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Effectiveness of Quality of Life Based on Glasser's Reality Therapy on Internet and Computer Game Addiction According to Adolescents' Lived Experiences

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A B S T R A C T

Objective: Nowadays, internet addiction has become a social problem that can disrupt an individual's health and productive presence in society. Everyone spends a significant amount of time on various programs and using the internet daily, but some people excessively engage in these activities to the extent that their mental health, behavior, and social life are adversely affected. Therefore, it is essential to intervene and prevent internet addiction. The purpose of this research was to investigate the effectiveness of quality of life intervention based on reality therapy according to adolescents' lived experiences on internet and computer game addiction.

Methods and Materials: The first part of the research employed a qualitative phenomenological approach. The statistical population consisted of all adolescents with internet addiction under counseling in counseling centers in Isfahan. Fifteen adolescents were purposefully selected and interviewed until saturation. After analyzing the interviews using Colaizzi's method and MAXQDA software, nine main concepts (lifestyle, identity formation, self-efficacy, psycho-physical factors, family structure, parent-adolescent relationship, family demographic characteristics, interpersonal relationships, and society) and 33 sub-concepts were categorized. Consequently, the quality of life intervention based on reality therapy was developed based on the extracted themes. The second part of the research was a quasi-experimental design with a pre-test, post-test control group, and follow-up period. The statistical population included all adolescents with internet addiction under counseling in counseling centers in Isfahan. Thirty adolescents were purposefully selected based on the inclusion criteria (scoring above 50 on the Internet Addiction Questionnaire) and randomly assigned to experimental and control groups. The experimental group received the quality of life intervention based on reality therapy over two months in ten 120-minute sessions. The questionnaires used included the Internet Addiction Questionnaire by Kimberly Young (1998) and the Computer

Game Addiction Questionnaire by Soltani and Farhadi (2016). The collected data were analyzed using repeated measures analysis of variance with SPSS23 software.
Findings: The results indicated that the quality of life intervention based on reality therapy according to adolescents' lived experiences had a significant effect on internet and computer game addiction ($P < 0.001$).
Conclusion: Based on the findings, it can be concluded that the quality of life intervention based on reality therapy according to adolescents' lived experiences, utilizing the principles and techniques of changing conditions and enhancing quality of life based on Glasser's reality therapy theory, can be an effective intervention for improving internet and computer game addiction.
Keywords: *Emotional Maturity, Body Image, Cognitive-Behavioral Therapy, Schema Therapy.*

1. Introduction

Today, the rapid expansion of technology and the global internet has significantly changed human life compared to the past (Ladrón de Guevara Rodríguez et al., 2022). Evidence suggests that excessive internet use leads to internet addiction. Internet addiction is defined as the inability to control internet use despite its negative consequences. This behavioral addiction has become a social problem in both Western and Eastern societies and is increasingly prevalent among adolescents and adults (Cheng & Liu, 2020). Since internet addiction alters cognitive behaviors and brain structures, it is responsible for a large part of poor performance in real-life activities, social relationships, and academic and professional advancements (Cheng & Liu, 2020). Internet addiction was particularly harmful during the pandemic, especially for adolescents. Today's generations use the internet extensively (Shalchi & Kolahi Hamed, 2018), and since the COVID-19 virus has created conditions where adolescents stay home more, this could lead to increased internet use. Consequently, exposure to distressing news and content related to the COVID-19 virus and virtual education might cause harmful stress (Dong & Zheng, 2020).

The American Psychiatric Association defines internet addiction as a pattern of internet use that causes functional impairment and is accompanied by unpleasant internal states over a two-month period, providing seven criteria for diagnosis (at least three criteria over two months): 1- tolerance, 2- withdrawal symptoms, 3- using the internet for longer periods than intended, 4- persistent desire to control behavior, 5- spending considerable time on internet-related activities, 6- reduction in social, occupational, and recreational activities due to internet use, 7- continued use despite awareness of negative consequences (American Psychiatric Association, 2022). Over the past decade, internet use has increased dramatically. According to the International Telecommunication Union, internet use in developed countries grew by 239% over this decade (Kuss et al., 2014). Numerous studies also show that alongside this widespread use of the internet, excessive use can lead to problems similar to addiction and dependency (Leung & Lee, 2011), to the extent that internet addiction has been described as the pandemic of the 21st century (Christakis et al., 2010), with prevalence estimates ranging from 0.3% in the USA to 18.3% in the UK (Niemz et al., 2005). According to statistics published by the National Internet Development Center, the number of internet users in Iran reached 40 million by the end of 2018, showing a 250% growth compared to five years earlier, which saw an upward trend during the coronavirus period among adolescents (Masaeli & Farhadi, 2021a, 2021b).

One reason for the importance of this issue is the greater vulnerability of children and especially adolescents in understanding privacy and awareness of surrounding issues. Additionally, one of the concerns of today's generation is the excessive use of the internet and social media networks. This problem, which primarily affects young adults and middle-aged individuals, has recently also become more prevalent among adolescents, leading to more problems (Farnam & Ghanbarpoor, 2020). Internet addiction can include addiction to computer games, chat rooms, pornography, and online gambling (Panahali et al., 2012). Computer game addiction is a behavioral pattern related to digital games where individuals show weakness in willpower and prioritize gaming over other activities, such that gaming becomes more important than other interests (Wölfling et al., 2019). Nowadays, computer games have become a means of satisfying users' psychological needs such as entertainment, a psychological mechanism for overcoming challenges, a way to escape reality, social reciprocity needs, stimulation and competition needs, and the need for a sense of power (Kim & Jang, 2019). Computer game addiction also leads to many problems, including academic decline, difficulties in

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social relationships, family detachment, isolation, high depression, sleep disorders, and loneliness (Masaeli & Farhadi, 2021a, 2021b), anxiety, sleep quality issues, aggression, self-control problems, reward system disruptions, and misconduct (Khanlari & Farhadi, 2022) among adolescents. Adolescents use the internet to fill their free time, and the availability of the internet allows them to interact with it and inevitably be affected by its positive and negative outcomes (Mortazavi & Farhadi, 2021). The massive influx of entertaining software and hardware into the market and the interactive nature of these entertainments, which engage individuals in the storyline and scenarios, heightens concerns. The increasing production and complexity of computer games have made them popular (Viana et al., 2021). Despite having a shorter lifespan compared to other cultural products like films, photographs, and newspapers, computer games have a higher prevalence among children and especially adolescents due to their high excitement, activity level, and alignment with their interests, resulting in significant time spent on them and influence from them (Jeong et al., 2021). The different effects of computer games are examined in terms of behavioral damages according to social learning theory, suggesting that adolescents often learn the behaviors they receive from various sources such as media, education, and family. Many computer games contain violent and controversial content that negatively impacts the minds and psyche of adolescents, jeopardizing their quality of life (Wölfling et al., 2019).

Thus, intervening and treating internet addiction and consequently reducing computer game addiction among adolescents is essential. Various studies have been conducted on improving internet addiction and computer game addiction among adolescents (Ahmadi et al., 2021; Bayrami et al., 2021; Bayrami et al., 2024; Huang et al., 2022; Jaafary et al., 2022; Kafi Nia & farhadi, 2020; Najarzadegan & Farhadi, 2019; Panahali et al., 2012; Rezaiee & Farhadi, 2018; Riahi, 2017; Safari et al., 2021; Shameli et al., 2018; Soltani & Farhadi, 2021), showing that psychological treatments are effective for adolescents with internet addiction. However, most research on internet addiction has focused more on examining components and suggesting various solutions, with fewer intervention studies focusing on adolescents' lived experiences concerning quality of life therapy and choice theory. Considering that internet addiction has been prevalent in Iran for years, with the pandemic exacerbating the issue and significantly impacting education, the economy, interpersonal relationships, and overall lifestyle and quality of life, leading to lasting positive and negative effects in society, it is necessary to take essential actions for preventing or treating these problems. One approach to controlling and treating this social issue is applying counseling and psychotherapy models, such as choice theory. Glasser developed choice theory in 1998, emphasizing five basic needs (survival, love and belonging, power, freedom, and fun) that motivate all human behavior. These needs are inherent, universal, and harmonious. Choice theory posits that we are motivated to meet these needs by establishing our unique quality world, which encompasses people we care about, our beliefs, and our desires. Choice theory is a process emphasizing choice, responsibility, and personal evaluation, where individuals are accountable for their choices and fulfilling their needs, shifting the focus from external factors and their consequences. Reality therapy or choice theory views all our actions as efforts to meet these basic needs. By understanding human needs, individuals' motivation for various activities such as studying, exercising, quitting addiction, dieting, etc., can be enhanced (Riahi, 2017). Therefore, conducting research in this area to uncover adolescents' lived experiences and develop an intervention model based on quality of life therapy - Glasser's reality therapy based on adolescents' lived experiences can fill research and educational gaps and lead to the application of their experiences, concerns, and problems in therapy sessions. Accordingly, the aim of this research is to examine the effectiveness of quality of life intervention based on Glasser's reality therapy according to adolescents' lived experiences on internet addiction and computer game addiction among adolescents.

2. Methods and Materials

2.1. Study Design and Participants

This study employed an exploratory mixed-method approach conducted in two stages. In the first stage, the "quality of life intervention based on Glasser's reality therapy according to adolescents' lived experiences" was developed. Since the main goal was to uncover the lived experiences of adolescents with internet addiction, a purposeful sampling method was used to select adolescents aged 12-18 years with internet addiction under counseling at counseling centers, specialists in adolescent issues, and books and articles published in the field of internet addiction. The selection process continued until no new data emerged. Data were collected through in-depth interviews and based on the information obtained, the quality of life intervention

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based on Glasser's reality therapy was developed. The second part of the research employed a quasi-experimental design with a pre-test, post-test control group, and a two-month follow-up period. The study population included all adolescents with internet addiction in Isfahan who referred to counseling centers in the 2021-2022 academic year and had case files. The sample was selected through purposive sampling based on entry criteria. These individuals then completed the Kimberly Young Internet Addiction Questionnaire (1999) again, and 34 individuals who scored above the cutoff point of 50 were selected as the final sample and randomly assigned to experimental and control groups. The experimental group received the quality of life intervention based on reality therapy, while the control group did not receive this intervention during the research process. After the intervention started, 2 adolescents from the experimental group and 2 from the control group withdrew from the study (15 adolescents in each group). Entry criteria included a diagnosis of internet addiction by child and adolescent specialists at counseling centers and scores above the cutoff point on the Internet Addiction Questionnaire. Exit criteria included more than two absences, non-cooperation and failure to complete assigned tasks, unwillingness to continue participation, and unforeseen events. The mean age of the experimental group was 14.933 ± 1.57 years and the control group was 15.200 ± 2.00 years. Additionally, 9 adolescents in the experimental group were in junior high school and 6 were in senior high school, while 8 in the control group were in junior high school and 7 in senior high school. In terms of gender, the experimental group included 7 girls and 8 boys, while the control group included 6 girls and 9 boys.

2.2. Measures

2.2.1. Phenomenological Interview

The semi-structured interview form included open-ended questions such as "How do you evaluate your quality of life, meaning do you have a good life or not?" Before implementation, the interview form was provided to several specialists and professors to assess the validity of the interview questions. They were asked to give their opinions on the quantity, quality, and phrasing of the questions. After incorporating their feedback, the questions were used. To increase validity and reliability, which equates to the scientific rigor of qualitative findings, the researcher maintained prolonged engagement with participants and data to ensure credibility. Methods such as member checking, where participants reviewed transcripts to clarify any ambiguities in coding, were employed. Data saturation was also used to enhance credibility. Confirmability was achieved through systematic data collection, maintaining researcher neutrality, and agreement among members on interviews, codes, and categories for comparing the researcher's interpretation with participants' intended meanings.

2.2.2. Internet Addiction

This questionnaire, created by Dr. Kimberly Young (1999), is one of the most reliable tests for measuring internet addiction. It contains 20 items aimed at assessing the level of internet addiction. The response scale is a Likert scale with five degrees (always: 5, often: 4, frequently: 3, sometimes: 2, rarely: 1). To obtain the overall score, the sum of the scores for each item is calculated, ranging from 20 to 100. Higher scores indicate greater internet addiction, and vice versa. Scores of 20 to 49 indicate no addiction, 50 to 79 indicate risk of addiction, and 80 to 100 indicate addiction. This standardized questionnaire has been validated in previous studies with a Cronbach's alpha of 0.90. The Persian version has also been used in Iran, with Cronbach's alpha of 0.81 and 0.88 reported (Safari et al., 2021).

2.2.3. Computer Game Addiction

This questionnaire, developed by Soltani and Farhadi (2016), consists of 19 items scored on a 5-point Likert scale (4 = always, 3 = often, 2 = sometimes, 1 = rarely, 0 = never). The scores range from 8 to 22, with higher scores indicating greater addiction to computer games. Soltani and Farhadi (2016) initially administered the questionnaire to over 30 individuals to estimate validity, using split-half reliability and Cronbach's alpha. The correlation coefficient between the two halves was 0.77, and the Spearman-Brown reliability coefficient was 0.87. The internal consistency reliability coefficient was 0.90, indicating high reliability. Content validity was confirmed by a group of experts evaluating clarity and comprehensibility, with a content validity index (CVI) above 0.90 for each item. The reliability of this questionnaire was 0.83 using Cronbach's alpha (Mortazavi & Farhadi, 2021; Soltani & Farhadi, 2021).

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2.3. Intervention

2.3.1. Quality of Life Intervention

Data were collected through in-depth interviews by a psychologist specializing in adolescents (with 8 years of experience in adolescent psychology) with adolescents addicted to the internet. The sample size was determined by the research objective and continued until data saturation, achieved after interviewing 15 adolescents. The interviewer, without guiding the conversation, sought to understand the participants' real world and life experiences. Interviews were conducted with assurances of scientific backing and confidentiality, addressing participants' information, statements, and identities. The questions aimed to reflect the concerns of adolescents' lives and avoid provoking sensitivity or reluctance to respond. Interviews began with a broad, central question about their experiences related to daily activities and quality of life. Clarifying questions were asked for ambiguous or incomplete responses. Each interview was transcribed verbatim and analyzed using Colaizzi's method, supervised by dissertation advisors. A composite intervention package based on quality of life components (individual, family, and social factors) according to adolescents' lived experiences and Glasser's reality therapy was developed. Content validity index (CVR and CVI) was used to measure the validity of the package, achieving acceptable levels of 0.66 for CVR and 0.88 for CVI. The qualitative research approach was chosen to understand and describe adolescents' experiences to develop the intervention, using descriptive phenomenology as the suitable method. Researchers then developed the quality of life intervention based on Glasser's reality therapy according to adolescents' lived experiences in 10 sessions (one session per week), each lasting 120 minutes. The unique feature of this educational program is its foundation on adolescents' experiences, which other approaches have less emphasized.

Session 1

The first session begins with an introduction to the facilitator, including their background and work experience. Group members then introduce themselves with the help of the facilitator to break the ice. The session proceeds with explaining the goals of the course (treatment rationale), outlining group instructions (rules and confidentiality), and providing an overview of quality of life and reality therapy. The session concludes with the administration of the pre-test.

Session 2

In the second session, members are familiarized with taking responsibility for their behaviors and understanding the importance and necessity of responsibility in life. They are introduced to the basic needs crucial in real life and how these needs affect their lives and the best ways to meet them. Members learn to plan for solving problems and strategize for their current lives. The session emphasizes making commitments to carry out and act upon the plans made and avoiding excuses in executing chosen plans.

Session 3

This session focuses on better self-awareness, identifying strengths and weaknesses through self-expression, and practicing active listening and inference. Members learn about the impact of their thoughts and actions on others, seeing themselves from the group's perspective, and reducing anxiety about speaking in public. Emphasis is placed on accepting reality, fostering responsibility, focusing on present behavior, and understanding short- and long-term goals and values. The session also involves recognizing signs of despair, examining automatic thoughts in discouraging situations, and replacing negative thoughts with positive ones, highlighting the fundamental principles of reality therapy.

Session 4

Members are taught self-control techniques, such as staying calm in anger-inducing situations and using behavioral techniques like deep breathing, counting, and role-playing to manage crises and prevent harm. They learn about total behavior and its four components (physiology, thought, action, feeling) using the behavior car metaphor. The session includes identifying and explaining the four conflicts arising from total behavior and teaching effective communication and responsible actions through role-playing and participative methods. Destructive and constructive behaviors in relationships are introduced, with emphasis on living in the present and reshaping one's quality world.

Session 5

Negative emotions are introduced using metaphors, alternative behaviors, and role-play. Anger is discussed through games and activities. Members challenge incompatible responses by questioning, e.g., "If I were in the place of... then what would my responsibility be regarding...?" Inner and outer control and commitment to responsible choices are emphasized through role replacement and behavior car analogy. Concepts like total behavior, needs, wants, and behavior balance are reviewed using supportive forces and NLP. The session also addresses

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the victim, persecutor, and rescuer triangle, and the ten principles of reality therapy through role-playing.

Session 6

The session introduces the concept of self-efficacy and psychological well-being, with members listing tasks and goals they believe they cannot achieve. The needs of individuals are explored through reflection on fulfilling basic needs. Members practice behavior choice in real-life situations and are taught the importance of responsibility for behaviors by listing controllable and uncontrollable behaviors and strategies for control. They identify destructive and constructive behaviors in real-life situations, discussing how to move towards chosen behaviors. Goals, planning, and continuous behavior change are also discussed.

Session 7

This session reviews previous assignments and introduces the fundamental needs of choice theory (survival, love, power, freedom, fun) and how to satisfy them healthily and effectively. Members are educated on different perceptions of reality in meeting needs and the inefficiency of excessive internet use. The ten principles of choice theory are explained, emphasizing responsibility for actions related to family and internet use. The session also involves evaluating programs, introducing constructive behaviors, and appropriate internet use, fostering supportive habits instead of destructive ones, and using brainstorming to solve problems and accept responsibility and consequences.

Session 8

Members are encouraged to discuss current behavior, expectations from parents, and excuses for irresponsible behavior. Role-playing is used to provide information about adolescence and essential facts about this period. The counselor adopts a non-critical and accepting approach, allowing adolescents to explore various life aspects, including what they want from family, friends, and themselves. Members reflect on the question, "If you were the person you wished to be, what kind of person would you be?" They also evaluate current behavior and its impact on achieving life goals, discussing effective communication and need expression.

Session 9

The session explores what happens when members don't get what they want at school and what changes they want. It addresses making excuses and the idea that excuses do not help achieve goals. Members reflect on whether their current path leads to desired outcomes and whether their quality world and life goals are realistic. They create mental albums of their ideal lives and evaluate attainability. Members identify practical steps towards their goals and understand that they are the drivers of their behavior car and responsible for their lives.

Session 10

The final session evaluates members' perceptions of internet addiction and its consequences, emphasizing that feelings, emotions, and behavioral incompatibilities are influenced but not directly caused by it. The session reviews total behavior and the four components, highlighting control over thoughts and actions. It discusses the four conflicts (wanting someone to do something they don't want to do, someone wanting you to do something you don't want to do, mutual attempts to control, and self-imposed obligations) and destructive behaviors (criticism, complaining, etc.). Members review the ten principles of choice theory, providing personal examples, and use the WDEP system to develop a practical plan for avoiding external control and changing thoughts and behaviors related to internet addiction. Goals and their achievement levels are discussed.

2.4. Data analysis

The collected data were analyzed using repeated measures analysis of variance with SPSS23 software.

3. Findings and Results

The descriptive findings of the research variables are presented in Table 1.

Table 1

Descriptive Statistics of Research Variables by Group and Three Stages of Research

Variable	Group	Pre-test Mean (SD)	Post-test Mean (SD)	Follow-up Mean (SD)
Internet Addiction	Experiment	76.8 (7.87)	67.7 (8.64)	69.87 (7.95)
	Control	74.8 (8.82)	74.87 (8.91)	77.93 (8.92)
Computer Game Addiction	Experiment	65.07 (8.5)	47.08 (8.45)	51.06 (8.44)
	Control	66.53 (7.76)	68.73 (8.59)	70.93 (9.06)

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As seen in Table 1, the mean scores of internet addiction and computer game addiction in the intervention group (quality of life based on reality therapy) show a greater reduction in the post-test and follow-up stages compared to the pre-test stage, relative to the control group. The use of parametric tests for repeated measures requires several initial assumptions, including the normality of scores, equality of variances, and equality of covariances, which, if groups are less than 40 and assumptions are met and confirmed, these tests can be used.

To test the assumption of normality, the Shapiro-Wilk test was used. The results for the scores of the research variables indicated that the null hypothesis of normal distribution in the research variables remained for all three stages (pre-test, post-test, follow-up) in both groups (all significance levels are greater than 0.05).

The assumption of equality of variances was examined using Levene's test. Results showed that for the variable of internet addiction in the pre-test (F = 0.382, p = 0.542), post-test (F = 0.002, p = 0.964), and follow-up (F = 0.13, p = 0.722), and for computer game addiction in the pre-test (F = 0.547, p = 0.466), post-test (F = 0.018, p = 0.789446), and follow-up (F = 0.031, p = 0.862), the assumption of equality of variances was confirmed in both variables across all three stages.

Results of Mauchly's test for checking the homogeneity of covariances for the internet addiction variable (Mauchly's W = 0.488, chi2 = 19.35, p = 0.001) and for computer game addiction (Mauchly's W = 0.144, chi2 = 25.27, p = 0.001) indicated that the assumption was not met for the research variables. Therefore, the Greenhouse-Geisser correction was used for within-subjects analysis in repeated measures ANOVA. The results of the comparison between subjects and within subjects for the research variables are presented in Table 2.

Table 2

Results of Between-Subjects and Within-Subjects Effects Analysis for Research Variables

Variable	Effect	Source	Sum of Squares	df	Mean Square	F	Sig.	Effect Size	Power
Internet Addiction	Between Subjects	Group	1369.896	1	1369.896	101.97	0.001	0.791	1.000
	Within Subjects	Time Effect	315.756	1.32	238.654	60.85	0.001	0.685	1.000
		Time*Group	469.622	1.32	354.95	90.505	0.001	0.764	1.000
Computer Game Addiction	Between Subjects	Group	4622.5	1	4622.5	21.99	0.001	0.44	0.995
	Within Subjects	Time Effect	950.6	1.08	882.03	152.27	0.001	0.845	1.000
		Time*Group	1874.6	1.08	1739.373	300.28	0.001	0.915	1.000

Based on the findings in Table 2, the between-subjects analysis shows a significant difference in the mean scores of internet addiction and computer game addiction between the experimental (quality of life based on reality therapy) and control groups ($p < 0.001$). Results indicated that 79% of the variance in internet addiction and 44% in computer game addiction were related to the difference between the two groups. For within-subjects analysis, the main effect of time was significant, indicating significant differences in the mean scores of both variables across the study stages ($p < 0.001$). Results also showed that the interaction effect of time and group membership was significant ($p < 0.001$), indicating that changes in the post-test and follow-up stages within each group were significant. The percentage differences in stages within groups for internet addiction and computer game addiction were 76.4% and 91.5%, respectively. The results of the post-hoc test for comparing the experimental and control groups in the research stages for the research variables are presented in Table 3.

Table 3

Results of Post-Hoc Test for Comparing Two Groups Based on Research Variables

Variable	Stage	Mean Difference	Sig.	Effect Size	Variable	Stage	Mean Difference	Sig.	Effect Size
Internet Addiction	Pre-test	2	0.518	0.015	Computer Game Addiction	Pre-test	-1.47	0.625	0.009
	Post-test	-7.27	0.001	0.422		Post-test	-21.66	0.001	0.632
	Follow-up	-8.07	0.001	0.558		Follow-up	-19.86	0.001	0.578

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The results in Table 3 show that the difference between the experimental and control groups in the pre-test stage was not significant ($p > 0.05$). However, the difference in the post-test and follow-up stages for both internet addiction and computer game addiction between the control group and the quality of life based on Glasser's reality therapy group was significant ($p < 0.001$). This indicates that the effect of the quality of life intervention based on Glasser's reality therapy on improving internet addiction and computer game addiction in the post-test was 42.2% and 63.2%, respectively. The effect of this intervention in the follow-up stage for internet addiction and computer game addiction was 55.8% and 57.8%, respectively. The comparison of the mean scores of research variables in three stages in the experimental group using Bonferroni Post-Hoc test is presented in Table 4.

Table 4

Results of Bonferroni Post-Hoc Test for Comparing Mean Scores of Research Variables in Research Stages in the Experimental Group

Variable	Stage 1	Stage 2	Mean Difference	Sig.
Internet Addiction	Pre-test	Post-test	9.2	0.001
		Follow-up	6.93	0.001
	Post-test	Follow-up	2.26	0.062
Computer Game Addiction	Pre-test	Post-test	18	0.001
		Follow-up	14	0.001
	Post-test	Follow-up	3.98	0.055

The results of the Bonferroni post-hoc test for comparing the mean scores of internet addiction and computer game addiction in the three stages in the experimental group in Table 4 show that the mean score differences for all research variables in the experimental group between the pre-test and post-test stages, as well as the pre-test and follow-up stages, were significant ($p < 0.001$). However, the mean score differences between the post-test and follow-up stages in this group were not significant ($p > 0.05$). In summary, the quality of life intervention based on Glasser's reality therapy had a significant effect on improving internet addiction and computer game addiction in the post-test stage, and this effect remained in the follow-up stage.

4. Discussion and Conclusion

The present study aimed to develop an integrated quality of life intervention based on Glasser's reality therapy, grounded in adolescents' lived experiences, and to evaluate its effectiveness on internet addiction and computer game addiction. The results of the first part of the study indicated that the developed intervention has acceptable content validity and can be implemented on adolescents with internet addiction. The second part of the study, which assessed the effectiveness of the integrated quality of life intervention based on Glasser's reality therapy grounded in adolescents' lived experiences, showed that this program significantly reduced internet addiction and computer game addiction. This finding is consistent with the prior research (Hunnicut & Felipe, 2019; Jaafary et al., 2022; Kim & Jang, 2019; Panahali et al., 2012; Safari et al., 2021; Taubin et al., 2023).

In explaining the findings, it can be said that quality of life based on reality therapy in this study helped adolescents reduce their excessive use of the internet by empowering them to become aware of their fundamental needs. This awareness taught them not to choose pathological and unconventional internet use to pass leisure time or avoid family conflicts, but to plan constructively and effectively for their goals and take responsibility for their choices in life (Najarzadegan & Farhadi, 2019). The principles of reality therapy helped adolescents respond efficiently to their needs for independence, freedom, intimacy, love, power, fun, and survival. Adolescents who excessively use the internet gradually become isolated, depressed, lonely, and anxious. Through the quality of life based on reality therapy, adolescents learned to consider the unhealthy consequences of avoidant behaviors and prolonged internet use, such as social harm, depression, self-harming behaviors, and academic performance disruption, and instead plan for healthy and effective activities. This therapeutic method increases self-esteem, fosters personal independence in adolescents, and prevents social harms and interpersonal problems, enabling adolescents to successfully navigate the crises of adolescence (Taubin et al., 2023). According to Glasser (1960), reality is shaped and interpreted based on individuals' quality world. Adolescents, by recognizing their quality world and comparing it with the real world, evaluate it and realize the inefficacy of excessive internet presence.

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They learn to engage in constructive behaviors and appropriate internet use, replacing destructive habits with nurturing ones, thus enhancing self-control and reinforcing positive aspects of themselves (Jaafary et al., 2022; Kim & Jang, 2019). Since quality of life based on reality therapy addresses adolescents' needs, it can justify the effectiveness of this approach in reducing internet addiction among adolescents. By learning the concepts of reality therapy, adolescents learned to moderate their internet use and take effective actions to satisfy their needs, thus reducing internet addiction.

Additionally, quality of life based on reality therapy helped adolescents enhance self-control and responsible decision-making, enabling them to better control their lives and behave in ways that satisfy their needs. This control reduced adolescents' strong inclination toward computer games, allowing them to control their behavior and experience greater life satisfaction. According to quality of life based on reality therapy, only the individual can control and manage their life, not others (Panahali et al., 2012; Safari et al., 2021). Glasser believes that individuals need to feel valued, and this feeling of worthiness requires accurate self-evaluation. Criteria, ethics, values, or performing right and wrong behaviors are the conditions for achieving a sense of worthiness in adolescents, and reality therapy precisely addresses this issue. Therefore, this approach can strengthen personal evaluations and self-control among adolescents, helping them face the crises ahead and raising awareness of the negative tendencies towards computer games, thereby assisting them in achieving the high motivation of quality life (Kim & Jang, 2019).

5. Limitations & Suggestions

The present study faced several limitations, including restrictions in qualitative interviews with adolescents and specialists due to the COVID-19 pandemic. Concerns about disease transmission sometimes shortened or postponed interview times for adolescents and their families. Additionally, some participants faced mental preoccupations during qualitative interviews, leading to hesitation in recalling life situations. In educational and therapeutic sessions, there were interruptions due to illness or pandemic concerns. Some participants did not adhere to the suggested two-month intervention period continuously due to illness or bereavement, causing delays in post-test administration. Future research should address these limitations and exercise caution in generalizing the findings. The second part of this study was limited to adolescents with internet addiction in counseling centers in Isfahan, with uncontrolled personality, physiological, social, and family variables influencing sensation seeking, risky behaviors, and peer relationships. The lack of random sampling methods and some adolescents' reluctance to participate due to fear of social stigma were also limitations. Therefore, to increase generalizability, future research should include diverse cities, regions, and cultures, other adolescents with internet addiction, control mentioned factors, use random sampling methods, and psychologically persuade adolescents to participate more in similar studies. Given the effectiveness of the quality of life-based reality therapy intervention grounded in adolescents' lived experiences on internet addiction and computer game addiction among adolescents with internet addiction, it is suggested that counseling centers employ experienced psychologists and counselors to provide effective psychological services to families and adolescents in schools and homes. This approach can improve the psychological, emotional, and social status of adolescents, accelerating therapeutic follow-up and improvement.

The findings of this study can help adolescents raise awareness, acquire skills, and make appropriate decisions in dealing with uncertainties and risks, thereby managing and improving their life path and quality of life. Additionally, to enhance internal and external adaptability, adolescents can use this intervention constructively to foster effective upbringing, healthy growth, and purposeful development, addressing internet addiction.

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Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethics Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

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Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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Authors' Contributions

All authors contributed equally.

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