Psychiatria Danubina, 2022; Vol. 34, No. 3, pp 490-496 https://doi.org/10.24869/psyd.2022.490 *Original paper*

EFFECT OF SOCIAL-PSYCHOLOGICAL INTERVENTION ON SELF-EFFICACY, SOCIAL ADAPTABILITY AND QUALITY OF LIFE OF INTERNET-ADDICTED TEENAGERS

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received: 20.1.2022; revised: 4.4.2022; accepted: 23.6.2022

SUMMARY

Background: *Internet addiction leads to psychological and social damage to teenagers. Rehabilitation treatment of Internet-addicted adolescents has aroused widespread concern. This study aims to explore the effect of social-psychological intervention on self-efficacy, social adaptability, and quality of life of Internet-addicted teenagers.*

Subjects and methods: *A total of 100 Internet-addicted teenagers in Guilin mental health center in China were selected and were randomly divided into control (n=50) and observation (n=50) groups. The teenagers in the control group received general withdrawal intervention, whereas those in the observation group received social-psychological intervention based on general withdrawal intervention. The intervention duration was 3 months.*

Results: *After intervention, the time management, interpersonal and health, Internet addiction tolerance, Internet withdrawal response, compulsive surfing of the Internet, and total score of Chinese Internet Addiction Scale of Internet-addicted teenagers in the two groups decreased significantly. Conversely, the total scores of boring and relaxation, stimulation and exposure, communication and information acquisition, negative emotion, and self-efficacy increased significantly, and the scores improved more significantly after the intervention in the observation group (P<0.05). Moreover, the scores of social adaptability, quality of life, and Internet avoidance of Internet-addicted teenagers in the two groups increased significantly after the intervention, whereas the scores of behavior monitoring and hazard perception decreased significantly, and the scores mentioned above improved more significantly in the observation group after the intervention (P<0.05).*

Conclusions: *Social psychological intervention can effectively improve the self-efficacy of Internet-addicted teenagers, correct their bad surfing habits, and improve their social adaptability and quality of life, which is an intervention method worthy of promotion in the rehabilitation of Internet addiction.*

Key words: *social-psychological intervention - Internet-addicted teenagers - self-efficacy - social adaptability - quality of life*

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INTRODUCTION

Internet addiction refers to impulsive and out-of-control online behavior of individuals without the influence of addictive substances, which is mainly caused by improper use or overuse of the Internet and thus leads to obvious damages to psychological and social functions of individuals (Mihajlov & Vejmelka 2017, Su et al. 2020). Moreover, there exist different degrees of Internet-related compulsiveness, withdrawal response and tolerance, and other behaviors. In China, an increasing number of teenagers have started to use the Internet. According to the 46th China Internet development statistical report, among 940 million network users in China, 172 million were teenagers, accounting for 18.3% (Wu et al. 2022). In recent years, the number of Internet addicts has also gradually increased, among which the Internet-addicted teenagers accounted for a relatively high proportion. Teenagers are in an important period of physical and mental development. Internet addiction will have varying degrees of adverse effects on their physical and mental development, as well as their study and life, and may lead to crime in serious cases.

With respect to the harmfulness of Internet addiction to teenagers, the huge number of Internet-addicted teenagers, and the importance and particularity of teenagers, the Internet-addicted teenagers have gradually become a close concern of research institutions, schools, the government, and other people from all walks of life, which urgently need to be solved (Karacic & Oreskovic 2017). Currently, no special and effective drugs are available in China, but cognitive behavioral therapy, systematic compensation, comprehensive psychological therapy, family therapy, and group psychotherapy are mostly used (Chang et al. 2019). Li et al. (2014) pointed out that giving cognitive, supportive, and reasonable emotional therapy to Internet-addicted teenagers can better improve their score of QOLI and negative emotions. Chung et al. (2019) demonstrated that the psychological intervention for Internet-addicted teenagers can better relieve the negative temperament of their parents and improve the quality of life of teenagers. Kim et al. (2019) found that positive psychological intervention is beneficial to the emotional development of Internet-addicted teenagers and can improve their social adaptability. Kawabe et al. (2019) showed that group psychological intervention for Internet-addicted teenagers can better improve their understanding of social support, the role of family, and overall function. Lo et al. (2021) found that cognitive-behavioral therapy has a positive effect on improving

self-efficacy of Internet-addicted teenagers. Though the above methods have certain effects on Internet-addicted teenagers, some problems still exist in the process of application. Therefore, exploring an intervention method that suits them is urgent.

Social psychological intervention is a psychological technology, which can correct bad online behavior of teenagers based on an accurate grasp of the development, causes, and psychological status of teenagers. Instead of rigid management and simple preaching as the main correction methods for bad behaviors of teenagers in the past, the motivation level of bad behaviors of teenagers should be changed, which can be implemented in natural situations to improve the self-management ability of students (Zhang et al. 2021). Mukhaini et al. (2021) indicated that comprehensive psychological intervention can effectively relieve Internet addiction among teenagers and better correct their bad online habits. In comparison with the traditional psychological intervention methods, Social psychological intervention relies on sitcoms, such that teenagers have a higher degree of participation and acceptance. Fidelix et al. (2019) found that Social psychological intervention plays an important role in the intervention of Internet-addicted teenagers. Andrade et al. (2019) claimed that Social psychological intervention has a positive effect on improving social adaptability and self-efficacy of Internet-addicted teenagers. Selhorst et al. (2021) found that social influence intervention on psychological technology has a significant effect on the quality of life of Internet-addicted teenagers.

Intervention treatment is particularly important for Internet-addicted teenagers. At present, although the conventional intervention method is effective, it is still slightly boring, and teenagers do not have strong interest in participating in interventions. Therefore, exploring an intervention method that suits Internet-addicted teenagers is urgent. Social psychological intervention is a type of indoctrination using group pressure to assist with bad behaviors, with high participation of teenagers and good effect. Therefore, this study performs a randomized controlled trial to provide a reference for the corrective intervention of bad online behaviors of Internet-addicted teenagers.

SUBJECTS AND METHODS

Participants

A total of 100 Internet-addicted teenagers in Guilin mental health center in China were selected via sampling and were randomly divided into control (n=50) and observation (n=50) groups using a random digital table.

The control group had 35 men and 15 women, aged 12 to 19 years with an average age of 15.16±2.18 years; the course of the disease was 0.5-8 years with an average course of disease of 2.38±0.69 years. For the degree of education of their parents, 13 graduated from junior high school, 38 graduated from senior high school, and 49 graduated from college and university. For their jobs, the control group had 18 workers; 22 businessmen; and 60 professional engineers, teachers, and cadres.

The observation group had 33 men and 17 women, aged 12 to 19 years with an average age of 15.25±2.12 years; the course of disease was 0.4-8 years with an average course of disease of 2.41±0.72 years. For the degree of education of their parents, 14 graduated from junior high school, 33 graduated from senior high school, 53 graduated from college and university. For their jobs, the control group had 19 workers; 23 businessmen; and 58 professional engineers, teachers and cadres.

Only those patients who (1) complied with the diagnostic criteria of Internet addiction disorder formulated by Young (2004), (2) received treatment in the center for the first time, (3) had good compliance and were willing to cooperate with intervention investigators were included in the sample. Conversely, those patients who demonstrated complications associated with (1) serious hereditary and infectious diseases, (2) serious physical diseases or conduct disorders, and (3) serious intellectual or mental disorders were excluded.

Methods

Experimental method

The control group was given general withdrawal intervention, and the observation group was given social-psychological intervention based on the general withdrawal intervention. The duration was 3 months.

Design of social-psychological intervention scheme

The teenagers of network strong interest who participated in the psychological intervention shall initially understand the significance of Social psychological intervention and then, from the cognitive perspective, shall encourage them to carry on theme discussion and communication on Internet addiction issues, such that they can understand their addiction situation and know their problems. It shall give scientific guidance and make corrections based on the analysis of occurrence and development process of Internet addiction. Moreover, it shall establish a supervision and evaluation mechanism to supervise the behavior changes of teenagers and take corresponding rewards and punishment measures.

Implementation of Social psychological intervention

Establish a mutual-help group. Through observation of intervention, the individuals with certain complementarity and commonness were classified into 1 group, 1 group of 10 people, with a total of 5 groups. Watching sitcoms and organizing discussions in groups every time could provide better discussion, collaboration, and learning.

Establish a stable relationship. The interventions established a relatively stable relationship with Internet-addicted teenagers through two activities, such that they would have a sense of belonging and trust and were willing to talk and discuss problems with the interven-

tions. The individuals in one group could also become partners who can understand, trust, and share happiness and sorrow. The activity time was once a week, 1 hour at a time, and the duration of the intervention was 3 months. The goal was to work together, trust each other, believe in oneself, and finally achieve healthy and comfortable surfing and life-based on the principle of motivation, mutual trust, resources, equality, and confidentiality.

The participants watched sitcoms related to Internet addiction. Then, they were asked to give feedback and share their feelings, and put forward opinions and suggestions to correct their bad online behaviors. It shall sign the behavior contract; each member should guarantee publicly that they will correct their bad online behaviors and constantly strengthen the correction state in their future life and study.

Measuring Tools

Internet addiction

The Internet addiction of teenagers was evaluated using the Chinese Internet Addiction Scale (CIAS-R) (Jiang et al. 2019). The content of this scale mainly included five dimensions, namely, time management, interpersonal and health, Internet addiction tolerance, Internet withdrawal response, and compulsive surfing of the Internet, with a total of 26 topics. A four-level scoring method was used to evaluate each topic. The Cronbach'α coefficient was 0.93, and the structural validity KMO was 0.99.

Self-efficacy

The questionnaire of confidence, resisting the situational temptation of Internet addiction, was used to evaluate the self-efficacy of Internet-addicted teenagers (Berte et al. 2021). The original questionnaire included four dimensions, namely, boring and relaxation, stimulation exposure, communication and information acquisition, and negative emotions, with a total of 20 questions. A five-level scoring method was used to evaluate each question. The confirmatory factors and reliability analysis indicated that the questionnaire had good reliability and validity. The Cronbach'α coefficient was 0.91, and the structural validity KMO was 0.99. The self-efficacy of Internet addiction behavior change has two manifestations: one is to provide consultation for individuals with the confidence in resisting temptation, and the other is to provide consultation for individuals suffering from temptation in various temptation situations. On the basis of the content of this study, the first manifestation was selected to evaluate the self-efficacy of Internet-addicted teenagers. Therefore, the content of the original questionnaire was changed to analyze and discuss the degree of confidence of individuals in resisting temptation. A five-level scoring method was used for evaluation (4 points for high confidence and 0 points for no-confidence). It demonstrated that the scale also had good reliability and validity. The Cronbach'α coefficient was 0.87, and the structural validity KMO was 0.97.

Internet addiction strategy change

The questionnaire of Internet addiction strategy change prepared by Liu et al. (2010) was used to evaluate the strategy change. The content of this questionnaire included five dimensions, namely, avoidance of Internet use, the establishment of plan, behavior monitoring, stimulation and recognition of cognition, and hazard perception, with a total of 24 questions. A five-level scoring method was used to evaluate the questionnaire (often=4 points, never=0 points). The Cronbach'α coefficient was 0.75, and the structural validity KMO was 0.97. The more the strategy changed, the higher the scores would be.

Social adaptability

Social adaptability scale compiled by Zhuo et al. (2020) was used to evaluate the social adaptability of Internet-addicted teenagers; the content of this scale included four dimensions, namely, mental elasticity, interpersonal adaptability, psychological energy, and psychological superiority, with a total of 70 topics. A five-level scoring method was used to evaluate social adaptability; the total score was the sum of scores of each dimension. The better social adaptability was, the higher the score would be. The Cronbach'α coefficients of each dimension and total scale were 0.71, 0.82, 0.83, 0.79, and 0.91.

Quality of life

The brief scale of quality of life organized by the WHO was used to evaluate the quality of life (Meyer et al. 2020). The scale had four dimensions, namely, environment, society, psychology, and physiology, with a total of 27 topics. Levels 1–5 scoring methods were used to evaluate each topic. The sum of the scores of each dimension was the original score, which would be converted into the total score through a percentage system. The better the quality of life was, the higher the score would be. The Cronbach'α coefficient was 0.85, and the structural validity KMO was 0.93.

Statistical Analysis

The data were analyzed using SPSS 22.0. The measurement data following normal distribution were described in ($\bar{x} \pm s$), and a pairwise t-test was conducted. The enumeration data (case (%)) were evaluated by conducting the χ^2 test. $P<0.05$ indicated statistical significance.

RESULTS

Comparison of the Internet addiction situation

After the intervention, the scores obtained by the observation and control groups for reflections on time management, interpersonal and health, Internet addiction tolerance, Internet withdrawal response, compulsive surfing, and the total score of CIAS-R were significantly decreased; and the above scores obtained by the observation group were significantly lower than those obtained by the control group ($P<0.05$). The results are shown in Table 1.

Comparison of the score of self-efficacy

After the intervention, the scores obtained by the observation and control groups for reflections on boring and relaxation, stimulation and exposure, communication and information acquisition, negative emotion, and total scores were significantly increased; and the above scores obtained by the observation group were significantly higher than those obtained by the control group (P<0.05). The results are shown in Table 2.

Comparison of the score of each dimension in strategy change

After the intervention, the scores obtained by the observation and control groups for reflections on avoidance of Internet use, behavior monitoring, and hazard perception were significantly decreased; and the above scores obtained by the observation group were significantly higher than those obtained by the control group (P<0.05). The results are shown in Table 3.

Comparison of the score of social adaptability

After the intervention, the scores obtained by the observation and control groups for reflections on mental elasticity, interpersonal adaptability, psychological energy, and psychological superiority were significantly increased; and the above scores obtained by the observation group were significantly higher than those obtained by the control group (P<0.05). The results are shown in Table 4.

Table 1. Comparison of the Internet addiction situation ($\bar{x} \pm s$, scores)

	Control group (n=50)		Observation group (n=50)	
	Before	After	Before	After
Time management	10.87±1.36	8.02±1.15^a	10.85±1.41	6.54±1.06^{ab}
Interpersonal and health	23.39±2.87	18.66±2.10^a	23.43±2.82	15.19±2.32^{ab}
Internet addiction tolerance	12.45±1.41	9.56±1.25^a	12.43±1.47	8.02±1.14^{ab}
Internet withdrawal response	14.52±2.35	10.66±2.18^a	14.43±2.31	9.23±2.15^{ab}
Compulsive surfing	14.79±1.85	12.26±1.38^a	14.75±1.76	9.02±2.08^{ab}
Total score	75.32±5.63	63.26±3.24^a	75.26±5.71	46.89±3.02^{ab}

Note: Compared with the situation before the intervention, $^a P$<0.05; Compared with the control group, $^b P$<0.05

Table 2. Comparison of the score of self-efficacy ($\bar{x} \pm s$, scores)

	Control group (n=50)		Observation group (n=50)	
	Before	After	Before	After
Boring and relaxation	5.93±1.36	7.12±1.43^a	5.87±1.28	9.26±1.56^{ab}
Stimulation and exposure	7.52±1.87	8.85±1.33^a	7.56±1.74	10.26±1.97^{ab}
Communication and information acquisition	7.36±2.05	8.63±2.31^a	7.39±1.96	9.76±2.51^{ab}
Negative emotion	3.51±0.87	5.23±1.03^a	3.56±0.84	7.24±1.19^{ab}
Total scores	23.69±5.48	32.42±3.46^a	23.75±5.52	35.73±5.84^{ab}

Note: Compared with the situation before the intervention, $^a P$<0.05; Compared with the control group, $^b P$<0.05

Table 3. Comparison of the score of each dimension in strategy change ($\bar{x} \pm s$, scores)

	Control group (n=50)		Observation group (n=50)	
	Before	After	Before	After
Avoidance of Internet use	4.58±2.15	5.45±1.89^a	4.54±2.12	6.38±2.09^{ab}
Establishment of plan	9.89±2.56	10.01±2.68	9.86±2.51	10.06±2.62
Behavior monitoring	6.34±1.54	5.99±1.65^a	6.38±1.51	5.32±1.26^{ab}
Stimulation and recognition	4.85±1.26	5.01±1.12	4.88±1.21	5.09±1.18
Hazard perception	13.56±2.98	11.51±2.66^a	13.54±2.87	8.23±2.11^{ab}
Total scores	39.78±9.85	38.21±8.62	39.82±9.77	35.96±6.72

Note: Compared with the situation before the intervention, $^a P$<0.05; Compared with the control group, $^b P$<0.05

Table 4. Comparison of the score of social adaptability ($\bar{x} \pm s$, scores)

	Control group (n=50)		Observation group (n=50)	
	Before	After	Before	After
Mental elasticity	62.36±8.59	71.32±9.65^a	62.45±8.35	78.29±10.08^{ab}
Interpersonal adaptability	63.39±6.85	68.42±6.95^a	63.28±6.69	73.09±7.82^{ab}
Psychological energy	55.84±6.32	59.66±6.75^a	55.71±6.21	62.69±6.85^{ab}
Psychological superiority	49.36±5.19	53.08±6.39^a	49.21±5.08	56.89±6.74^{ab}

Note: Compared with the situation before the intervention, $^a P$<0.05; Compared with the control group, $^b P$<0.05

Table 5. Comparison of the score of quality ($\bar{x} \pm s$, scores)

	Control group (n=50)		Observation group (n=50)	
	Before	After	Before	After
Environment	56.06±4.39	59.36±4.74[a]	56.14±4.52	75.26±6.82 [ab]
Society	56.89±5.49	64.28±7.06[a]	56.93±5.62	78.25±7.68 [ab]
Psychology	56.76±3.18	61.08±5.09[a]	56.52±3.06	75.29±9.33 [ab]
Physiology	57.26±3.59	64.53±5.97[a]	57.38±3.48	73.55±6.67 [ab]
Total score	59.65±4.87	64.09±3.95[a]	59.58±5.12	77.29±5.26 [ab]

Note: Compared with the situation before the intervention, [a] $P<0.05$; Compared with the control group, [b] $P<0.05$

Comparison of the score of quality of life

After the intervention, the scores obtained by the observation and control groups for reflections on environment, society, psychology, physiology, and the total scores of quality of life were significantly increased; and the above scores obtained by the observation group were significantly higher than those obtained by the control group (P<0.05). The results are shown in Table 5.

DISCUSSION

This study shows that the scores of time management, interpersonal and health, Internet addiction tolerance, Internet withdrawal response, compulsive surfing of the Internet, and the total scores of CIAS-R in the observation group are lower than those in the control group after the intervention. Thus, Social psychological intervention can effectively reduce the extent of Internet addiction among teenagers. This finding agrees with the findings of Sun et al. (2020) which are due to excessive learning pressure, weak psychological defense mechanisms, poor interpersonal relationships, excessive punishment, or pressure from parents in the family. Conversely, the mental quality of Internet-addicted teenagers is relatively low. The scores of Internet addiction tolerance, Internet withdrawal response, and compulsive surfing of the Internet of Internet-addicted teenagers after three months of psychological intervention were significantly decreased, which would reduce their Internet addiction to a certain extent (Gholamian et al. 2016). The Social psychological intervention in this study adopted more humanized methods instead of rigid management of correcting bad behaviors of teenagers or simple preaching method, such that the level of motivation to change bad behaviors would be increased to a certain extent and would change their bad behaviors more effectively and achieve better self-management.

The results in Tables 2 and 3 show that the scores of boring and relaxation, stimulation and exposure, communication and information acquisition, negative emotion, and self-efficacy, as well as the scores of each dimension in the strategy change questionnaire obtained by the observation group after the intervention were higher than those obtained by the control group, which demonstrated that Social psychological intervention can improve the self-efficacy of Internet-addicted teenagers. This result agrees with the findings of Ali-Saleh Darawshy et al. (2020). The instructor provides emotional support for Internet-addicted teenagers during the whole intervention process. Teenagers will receive considerable emotional support and aid and will even try to help others with the ongoing intervention. This type of experience will promote them to know themselves, strengthen their self-confidence, and walk out of the Internet virtual world as soon as possible and then gradually make friends in real life, improve their interpersonal skills, and strengthen their confidence against Internet temptation. Psychological intervention can enhance the self-confidence of Internet-addicted teenagers and improve their self-efficacy (Ruiz-Aranda et al. 2019). Comprehensive psychological intervention for Internet-addicted teenagers has some differences in behavior change strategies (Zhang et al. 2020) demonstrated that. This result is probably because the stronger the Internet interests of teenagers are, the lower their confidence against Internet temptation will be. They will like to go surfing to release their bad emotions and kill time when they need to relax, are in a bad mood, bored, and at leisure. After watching sitcoms related to Internet addiction, the group members were asked to give feedback and share their feelings, and proposed opinions and suggestions to correct these bad online behaviors. It shall sign the behavior contract; each member should guarantee publicly that they will correct their bad online behaviors and constantly strengthen the correction state in their future life and study, which can better improve their executive force to change their bad behaviors.

The results in Table 4 show that the scores of mental elasticity, interpersonal adaptability, psychological energy, and psychological superiority obtained by the observation group after the intervention were significantly higher than those obtained by the control group, which indicated that Social psychological intervention can significantly improve the social adaptability of Internet-addicted teenagers. This result agrees with the findings of Miao et al. (2021) Relevant study indicated that from the perspective of behavior reflections on social adaptation, good social adaptability is mainly reflected in facing reality, understanding reality, and seeking positive ways to transform the reality (Shi et al. 2019). However, adolescence is a period of rapid development in all aspects of life, personal psychology, and physiology, which will rapidly develop into a mature period.

When their desire for self-realization, friendship, and self-independence are fully satisfied in reality or cannot be satisfied as normal, they will gradually transfer their energy to the virtual world, taking the virtual space as a stage to enrich themselves, and their adaptation, understanding, and attention to the real world will thus be affected. The social adaptability of Internet-addicted teenagers is closely related to mental quality and communication skills (Marin et al. 2021). Social psychological intervention can effectively improve the SCL-90 symptom self-evaluation scale score of Internet-addicted teenagers and enhance their social adaptability (Zilka 2021) found. All of these conclusions are consistent with the findings of this study, which demonstrates that Social psychological intervention can improve the social adaptability of Internet-addicted teenagers. In this study, Social psychological intervention can understand the harm of Internet addiction by watching sitcoms, giving feedback, sharing their feelings, putting forward opinions and suggestions to correct their bad online behaviors, constantly strengthening the correction state in their future life and study, and improve their social adaptability.

The results in Table 5 show that the scores obtained by the observation group in terms of environment, society, psychology, physiology, and total score of quality of life after the intervention were significantly higher than those obtained by the control group, which demonstrates that Social psychological intervention can significantly improve their quality of life. This result agrees with the findings of Swerts et al. (2019) probably because social-psychological intervention can determine the negative effect of Internet addiction and correct bad online behaviors by watching sitcoms and then gradually reduce the dependence of teenagers on the Internet, change their schedule to the normal pace of life, and significantly improve their mental state and quality of life. Social psychological intervention can improve the family intimacy and adaptability of middle school students with Internet strong interests and improve their family relationships and quality of life. All these conclusions are consistent with the findings of this study. In sum, Social psychological intervention can effectively improve the quality of life of Internet-addicted teenagers, which is an effective means to improve the quality of life of Internet-addicted teenagers.

CONCLUSION

A total of 100 Internet-addicted teenagers in Guilin mental health center in China were selected as research objects, the effect of social-psychological intervention on self-efficacy, social adaptability, and quality of life of Internet-addicted teenagers was explored. Social psychological intervention can effectively improve the self-efficacy of Internet-addicted teenagers, correct their bad online behaviors, and improve their social adaptability and quality of life, which is a type of correction and intervention method worthy of promotion.

Acknowledgements: None.

Conflict of interest: None to declare.

Contribution of individual authors:

Yi Zhao: conception and design, analysis, planning and designing data collection.

Qiuwu Pan: material preparation, statistical analysis, draft preparation.

All authors have read and agreed to the published version of the manuscript, approval of the final version.

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