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Contents

Thrice Monthly Volume 9 Number 14 May 16, 2021

MINIREVIEWS

- 3227 Non-invasive physical therapy as salvage measure for ischemic skin flap: A literature review
Zheng YH, Yin LQ, Xu HK, Gong X
- 3238 Prediction models for development of hepatocellular carcinoma in chronic hepatitis B patients
Guo J, Gao XS

ORIGINAL ARTICLE

Retrospective Cohort Study

- 3252 Burden of atrial fibrillation in patients with rheumatic diseases
Khan MZ, Patel K, Patel KA, Doshi R, Shah V, Adalja D, Waqar Z, Franklin S, Gupta N, Gul MH, Jesani S, Kutalek S, Figueredo V

Retrospective Study

- 3265 Observation of the effect of one-to-one education on high-risk cases of diabetic foot
Fu XJ, Hu SD, Peng YF, Zhou LY, Shu T, Song DD
- 3273 Pediatric Wilson disease presenting as acute liver failure: Prognostic indices
Fang WY, Abuduxikuer K, Shi P, Qiu YL, Zhao J, Li YC, Zhang XY, Wang NL, Xie XB, Lu Y, Knisely AS, Wang JS
- 3287 Positive psychological intervention for anxiety, depression and coping in subjects addicted to online games
Gao XJ, Sun JJ, Xiang M

SYSTEMATIC REVIEWS

- 3294 Cluster headache due to structural lesions: A systematic review of published cases
Long RJ, Zhu YS, Wang AP

META-ANALYSIS

- 3308 Comparison of smear cytology with liquid-based cytology in pancreatic lesions: A systematic review and meta-analysis
Zhang XH, Ma SY, Liu N, Wei ZC, Gao X, Hao YJ, Liu YX, Cai YQ, Wang JH

CASE REPORT

- 3320 Bronchial glomus tumor with calcification: A case report
Zhang Y, Zhang QP, Ji YQ, Xu J

- 3327** Acute flaccid paralysis and neurogenic respiratory failure associated with enterovirus D68 infection in children: Report of two cases
Zhang Y, Wang SY, Guo DZ, Pan SY, Lv Y
- 3334** Skeletal muscle metastases of hepatocellular carcinoma: A case report and literature review
Song Q, Sun XF, Wu XL, Dong Y, Wang L
- 3342** Bone cement implantation syndrome during hip replacement in a patient with pemphigus and Parkinson's disease: A case report
Zhou W, Zhang WJ, Zhao GQ, Li K
- 3350** Novel intergenic *KIF5B-MET* fusion variant in a patient with gastric cancer: A case report
Wu ZW, Sha Y, Chen Q, Hou J, Sun Y, Lu WK, Chen J, Yu LJ
- 3356** Recurrent perimesencephalic nonaneurysmal subarachnoid hemorrhage within a short period of time: A case report
Li J, Fang X, Yu FC, Du B
- 3365** Incremental value of three-dimensional and contrast echocardiography in the evaluation of endocardial fibroelastosis and multiple cardiovascular thrombi: A case report
Sun LJ, Li Y, Qiao W, Yu JH, Ren WD
- 3372** Floating elbow combining ipsilateral distal multiple segmental forearm fractures: A case report
Huang GH, Tang JA, Yang TY, Liu Y
- 3379** Acute cholangitis detected ectopic ampulla of Vater in the antrum incidentally: A case report
Lee HL, Fu CK
- 3385** Almitrine for COVID-19 critically ill patients – a vascular therapy for a pulmonary vascular disease: Three case reports
Huette P, Abou Arab O, Jounieaux V, Guilbart M, Belhout M, Haye G, Dupont H, Beyls C, Mahjoub Y
- 3394** Tenosynovial giant cell tumor involving the cervical spine: A case report
Zhu JH, Li M, Liang Y, Wu JH
- 3403** Primary bone anaplastic lymphoma kinase positive anaplastic large-cell lymphoma: A case report and review of the literature
Zheng W, Yin QQ, Hui TC, Wu WH, Wu QQ, Huang HJ, Chen MJ, Yan R, Huang YC, Pan HY
- 3411** Acute spontaneous thoracic epidural hematoma associated with intraspinal lymphangioma: A case report
Chia KJ, Lin LH, Sung MT, Su TM, Huang JF, Lee HL, Sung WW, Lee TH
- 3418** Change in neoadjuvant chemotherapy could alter the prognosis of patients with pancreatic adenocarcinoma: A case report
Meyer A, Carvalho BJ, Medeiros KA, Pipek LZ, Nascimento FS, Suzuki MO, Munhoz JV, Iuamoto LR, Carneiro-D'Albuquerque LA, Andraus W
- 3424** Laparoscopic cholecystectomy for gangrenous cholecystitis in around nineties: Two case reports
Inoue H, Ochiai T, Kubo H, Yamamoto Y, Morimura R, Ikoma H, Otsuji E

- 3432** Radiological insights of ectopic thyroid in the porta hepatis: A case report and review of the literature
Chooah O, Ding J, Fei JL, Xu FY, Yue T, Pu CL, Hu HJ
- 3442** Successful treatment of infantile hepatitis B with lamivudine: A case report
Zhang YT, Liu J, Pan XB, Gao YD, Hu YF, Lin L, Cheng HJ, Chen GY
- 3449** Pure large cell neuroendocrine carcinoma originating from the endometrium: A case report
Du R, Jiang F, Wang ZY, Kang YQ, Wang XY, Du Y
- 3458** Diabetic mastopathy in an elderly woman misdiagnosed as breast cancer: A case report and review of the literature
Chen XX, Shao SJ, Wan H
- 3466** Cronkhite-Canada syndrome with steroid dependency: A case report
Jiang D, Tang GD, Lai MY, Huang ZN, Liang ZH
- 3472** Extremely rare case of necrotizing gastritis in a patient with autoimmune hepatitis: A case report
Moon SK, Yoo JJ, Kim SG, Kim YS
- 3478** Paget's disease of bone: Report of 11 cases
Miao XY, Wang XL, Lyu ZH, Ba JM, Pei Y, Dou JT, Gu WJ, Du J, Guo QH, Chen K, Mu YM

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Observational Study

Positive psychological intervention for anxiety, depression and coping in subjects addicted to online games

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Abstract

BACKGROUND

Addiction to online games is not uncommon. The patients usually refuse to take medications and present with affective symptoms such as anxiety, depression and negative coping styles. Psychological intervention based on positive psychology is a promising treatment for such patients.

AIM

To evaluate the effect of positive psychological intervention on anxiety, depression and coping in people addicted to online games.

METHODS

This self-controlled study included 89 people addicted to online games, who received treatment at Hangzhou Seventh People's Hospital, Hangzhou, China in 2019. The Hamilton Anxiety Scale, Hamilton Depression Scale and Trait Coping Style Questionnaire were administered to evaluate the anxiety, depression and coping style among these people. Psychological intervention based on positive psychology was provided for 6 wk followed by another evaluation. The results were compared against those from the previous evaluation.

RESULTS

After 6 wk of psychological intervention, 89 people achieved a significant improvement in the Hamilton Anxiety Scale and Hamilton Depression Scale-24 scales. The score for positive coping style in Trait Coping Style Questionnaire was significantly improved, while that of the negative coping style decreased significantly ($P < 0.05$).

CONCLUSION

and the manuscript was prepared and revised according to the STROBE statement.

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Psychological intervention based on positive psychology alleviated affective symptoms, such as anxiety and depression, in subjects addicted to online games. Psychological intervention corrected negative coping style, thereby improving mental health.

Key Words: Online game addiction; Positive psychology; Anxiety; Depression; Coping style; Psychological intervention

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Core Tip: For patients with addiction to online games who present with affective symptoms such as anxiety, depression and negative coping styles, psychological intervention based on positive psychology is an effective treatment modality to alleviate affective symptoms. Moreover, negative coping styles could also be corrected by psychological intervention. Therefore, psychological intervention is a promising choice for the treatment of such patients with addiction to online games, which may bring great benefits and hope to both the patients themselves and their families. Psychological intervention is worthy of popularization in clinical practice.

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INTRODUCTION

In the era of accelerating development of computer technology and the growing influence of the internet, online games have entered thousands of households because of massive industrialization. The number of online gamers has been rising daily, and addicts have emerged. Some of them present with craving and withdrawal reactions similar to those with psychoactive substance use[1]. This phenomenon has evoked the attention of psychiatrists. In the Diagnostic and Statistical Manual of Mental Disorders- Fifth Edition, the above-mentioned mental disorder is named online game addiction. In the clinic, patients addicted to online games usually refuse to take medications and present with accompanying affective symptoms such as anxiety, depression and negative coping styles. There are mutual cause-and-effect interactions between these symptoms and addictive behaviors, which further aggravate the social function impairment of individuals and hinders their treatment and recovery[2,3]. If implemented under the theory of positive psychology, a psychological intervention can evoke positive behaviors, help the individuals manage and cope with negative emotions and reduce addictive behaviors[4]. The present study investigated the influence of psychological intervention based on positive psychology on anxiety, depression and coping style in people addicted to online games. The purpose was to provide a reference for the clinical prevention and treatment of online games addiction.

MATERIALS AND METHODS

Subjects

We recruited 89 people addicted to online games who were treated at Hangzhou Seventh People's Hospital in 2019. Inclusion criteria were: (1) Conforming to the diagnosis of online game addiction in the Diagnostic and Statistical Manual of Mental Disorders- Fifth Edition; (2) Age ≥ 12 years; (3) Junior high school and above; and (4) Cooperative with the researchers to finish the evaluations on different psychological scales. Exclusion criteria were: (1) Combined with mental retardation; and (2) Uncooperative with the evaluation on the psychological scale for various reasons. Dropout criteria were: (1) Unable to complete the psychological intervention; or (2)

Loss to follow-up. All participants were fully informed and gave signed informed consent before the study. The present study was approved by the Ethics Committee of Hangzhou Seventh People's Hospital.

Study design

This was a self-controlled study. The participants were first surveyed with respect to name, sex, age, occupation and number of years of education using a self-developed questionnaire. The Hamilton Anxiety (HAMA)[5], Hamilton Depression (HAMD-24) scales[6] and Trait Coping Style Questionnaire (TCSQ)[7] were administered to evaluate anxiety, depression and coping style. Psychological intervention based on positive psychology was then given for 6 wk. The anxiety, depression and coping style of the participants were re-evaluated after psychological intervention, and the results were compared against those before intervention. Thus, the influence of psychological intervention based on positive psychology on the negative emotions and coping style of the participants was determined.

Methods of psychological intervention

Group therapy was conducted in conjugation with lectures, study and discussion twice weekly. A total of 12 counseling courses were provided for 90-120 min per course. The curriculum plan was made by a professionally trained psychotherapist. The psychological intervention was divided into five stages: (1) Self-understanding: week 1, group education on cognitive knowledge and self-counseling on psychological disorders were performed. The purpose was to help the participants gain a more comprehensive understanding of themselves and establish a positive self-concept; (2) A grateful heart: week 2, the participants learned to sing the song "A Grateful Heart" and read articles on gratefulness. The purpose was to foster a sense of gratitude; (3) Understanding life: week 3, group psychological intervention was given, and the participants were required to write articles on the values and responsibilities of life. The purpose was to remind the participants of the preciousness of life and to help them appreciate life and their self-value; (4) Relieving family affections: week 4, the participants were required to make telephone calls, write letters to the family, watch TV dramas on family ethics and read articles on family affections. The purpose was to help the participants initiate positive interactions with the family members on the family visiting days; and (5) Rebuilding hope: weeks 5-6, the participants were required to write articles on hope, titled "My dream home," "A letter to the future," and "A wish bottle." They also watched inspirational movies. The purpose was to help the participants cultivate confidence and hope in future life.

Statistical analysis

All statistics were input into Excel and analyzed using SPSS version 25.0 (IBM Corp., Armonk, NY, United States). Counts were expressed as frequencies and measurements as means \pm SD. Self-controlled comparison of data before and after intervention was conducted by using the paired *t*-test. All tests were two-sided, with $\alpha = 0.05$.

RESULTS

Baseline information of the participants

Because of sufficient preliminary preparation and proactive follow-up measures, all 87 participants completed the follow-up. There were 46 men and 41 women, aged 26 ± 4 (16-37) years. There were 31 students, 24 unemployed, 18 manual workers and 16 non-manual workers, according to the classification by occupation. The number of years of education was 14 ± 3 (9-17) years.

Comparison of HAMA scores before and after psychological intervention

After psychological intervention, the scores for somatic anxiety factor and psychotic anxiety factor and HAMA total scores decreased significantly ($P < 0.05$) (Table 1).

Comparison of HAMD scores before and after psychological intervention

As compared with the situation before intervention, the scores for anxiety/somatic factor, cognitive impairment factor, retardation factor, despair factor and HAMD total scores were all significantly decreased after intervention ($P < 0.05$) (Table 2).

Table 1 Comparison of the Hamilton Anxiety Scale scores before and after psychological intervention, *n* = 87

Item	Before	After	<i>t</i> value	<i>P</i> value
Somatic anxiety factor	13.14 ± 2.56	6.31 ± 0.95	7.521	< 0.001
Psychotic anxiety factor	12.57 ± 3.11	8.54 ± 1.73	4.810	< 0.001
HAMA total score	25.71 ± 4.94	14.85 ± 1.53	9.176	< 0.001

HAMA: Hamilton Anxiety Scale.

Table 2 Comparison of Hamilton Depression Scale-24 scores before and after psychological intervention, *n* = 87

Item	Before	After	<i>t</i> value	<i>P</i> value
Anxiety/somatic factor	6.83 ± 1.58	2.68 ± 0.78	16.430	< 0.001
Body weight factor	0.93 ± 0.13	0.89 ± 0.11	0.364	0.716
Cognitive impairment factor	6.12 ± 1.23	2.86 ± 0.84	12.232	0.002
Circadian change factor	0.92 ± 0.26	0.90 ± 0.17	0.480	0.912
Retardation factor	7.63 ± 1.62	1.48 ± 0.19	21.134	< 0.001
Sleep disorder factor	4.42 ± 1.32	4.16 ± 0.34	1.609	0.110
Despair factor	3.58 ± 0.86	1.08 ± 0.13	4.405	< 0.001
HAMD total score	32.42 ± 8.63	9.15 ± 1.58	32.153	< 0.001

HAMD: Hamilton Depression Scale.

Comparison of TCSQ scores before and after psychological intervention

After psychological intervention, the score for positive coping style on TCSQ significantly increased, while that for negative coping style significantly decreased (*P* < 0.05) (Table 3).

DISCUSSION

People addicted to online games share some similarities with those addicted to psychoactive substances. Both suffer from negative emotions and psychology, which manifest as depression, anxiety and negative coping style. They are important poor prognostic factors[8,9]. Thus, the prognosis of those patients can be improved by promoting alleviation of anxiety and depression of the patients and changing the negative coping style. Positive psychology is considered an important pathway to help them seek more pleasure, satisfaction and happiness to promote their recovery[10]. Therefore, in clinical care, it is necessary to administer psychological intervention for those addicted to online games to enhance their positive emotional experience and to satisfy their higher levels of psychological demands. Psychological intervention can also alleviate anxiety and depression in these individuals, change their negative coping styles and improve prognosis.

Our study indicated that after 6 wk of psychological intervention based on positive psychology, 89 participants addicted to online games achieved a significant improvement in HAMA and HAMD-24 scores. The scores for positive coping style factor in TCSQ significantly increased, while that for negative coping style factor significantly decreased, indicating a good therapeutic effect.

Positive psychology is mainly concerned with the positive psychological qualities, psychological wellbeing and harmonious development[11]. Unlike the negative psychology that places human psychological problems and diagnosis and treatment of psychological illnesses at the center, positive psychology intervention goes beyond the limits that arise from too much attention given to pain and pain relief. Instead, positive psychology has the beneficial effect of raising the sense of happiness, thereby promoting the treatment of psychological diseases and functional recovery[12]. Skapinakis *et al*[13] believed that positive psychology intervention outperformed

Table 3 Comparison of scores on Trait Coping Style Questionnaire before and after intervention, *n* = 87

Item	Before	After	<i>t</i> value	<i>P</i> value
Positive coping style factor	24.87 ± 4.59	32.74 ± 6.26	11.695	< 0.001
Negative coping style factor	32.62 ± 5.48	25.21 ± 3.71	10.517	< 0.001

general psychotherapy and conventional medication therapy. We confirmed that psychological intervention based on positive intervention did help foster confidence and hope in participants, while alleviating negative affective symptoms like anxiety and depression. Thus, psychological intervention based on positive intervention exhibited excellent clinical efficacy.

Clinical symptoms are only part of the psychological disorder. There is still a long way to go from mitigating the clinical symptoms to full recovery[14]. Therefore, we should not only focus on the affective symptoms of people addicted to online games, but also on the negative coping style that lies underneath the symptoms[15]. Positive psychology is concerned with happiness, power and optimal functioning, with more efforts devoted to improving the subjective experience and positive individual features. Psychological intervention based on positive psychology can help individuals and relatives to face the problems with a positive attitude while establishing health awareness and positive coping styles[16,17]. The participants were more prone to adopt a positive coping style and less likely to adopt a negative coping style after positive psychology intervention. That means the negative coping style was corrected.

In the present study, attempts were made to correct the deeper self-cognition structure of the participants addicted to online games by the positive psychology approach. Our goal was to improve the positive psychological health of these individuals, with an emphasis on affective control, emotional regulation and correction of the coping style. We finally confirmed that positive psychology intervention effectively alleviated the affective symptoms, such as anxiety and depression, in people addicted to online games. Moreover, this approach could also correct the negative coping style, thereby improving the mental health status. Thus, the positive psychology intervention is worthy of clinical popularization.

CONCLUSION

Our study demonstrated that psychological intervention based on positive psychology alleviated affective symptoms (*e.g.*, anxiety and depression) in subjects addicted to online games. Moreover, psychological intervention corrected negative coping style, thereby improving mental health.

ARTICLE HIGHLIGHTS

Research background

Addiction to online games is common. The patients usually refuse to take medications and present with affective symptoms. Psychological intervention is a promising treatment for such patients.

Research motivation

Provide a reference for the clinical prevention and treatment of online games addiction.

Research objectives

This study aimed to evaluate the effect of positive psychological intervention in people addicted to online games.

Research methods

Eighty-nine people addicted to online games who received treatment at Hangzhou Seventh People's Hospital, Hangzhou, China in 2019 were enrolled in the study. The Hamilton Anxiety and Hamilton Depression scales and Trait Coping Style Questionnaire were analyzed.

Research results

Hamilton Anxiety and Hamilton Depression scales and the score for positive coping style in Trait Coping Style Questionnaire were significantly improved after 6 wk of psychological intervention, while that of the negative coping style decreased significantly.

Research conclusions

Positive psychological intervention alleviated affective symptoms in subjects addicted to online games. Psychological intervention corrected negative coping style, thereby improving mental health.

Research perspectives

Positive psychology intervention could effectively alleviate the affective symptoms and correct the negative coping style in people addicted to online games. Thus, the positive psychology intervention is worthy of clinical popularization.

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