Original Article

Access this article online

Quick Response Code:

Website: www.jehp.net

DOI: 10.4103/jehp.jehp_1120_20

Effect of positive thinking training on stress, anxiety, depression, and quality of life among hemodialysis patients: A randomized controlled clinical trial

Nasrin Shokrpour[1,2,3], Shima Sheidaie[4], Mehdi Amirkhani[5], Leila Bazrafkan[6], Ameneh Modreki[7]

[1]Department of English, School of Paramedical Sciences, Shiraz University of Medical Sciences, Shiraz, Iran, [2]IJCBNM research Center, Nursing School, Shiraz University of Medical Sciences, Shiraz, Iran, [3]Center for Interdisciplinary Research in Islamic Education and Health Sciences, Shiraz University of Medical Sciences, Shiraz, Iran, [5]Department of Health in Disasters and Emergencies, Health Human Resources Research Center, School of Management and Information Sciences, Shiraz University of Medical Sciences, Shiraz, Iran, [6]Clinical Education Research Center, Shiraz University of Medical Sciences, Shiraz, Iran, [4]Department of Education, Fasa University of Medical Sciences, Fasa, Iran, [7]Department of Clinical Psychology, Fasa University of Medical Sciences, Fasa, Iran

Address for correspondence:
Mehdi Amirkhani, Department of Health in Disasters and Emergencies, Health Human Resources Research Center, School of Management and Information Sciences, Shiraz University of Medical Sciences, Shiraz, Iran.
E-mail: m.amir2006@yahoo.com

Received: 30-08-2020
Accepted: 10-10-2020
Published: 30-06-2021

Abstract:

BACKGROUND: Given the relationship between positivity interventions and psychological problems, this study aimed to investigate the effect of positive thinking training on stress, anxiety, depression, and quality of life of hemodialysis patients.

MATERIALS AND METHODS: This is a quasi-experimental and interventional study conducted on 70 hemodialysis patients referred to Fasa hemodialysis centers, Iran, between April 2019 and October 2019. Patients were selected using a simple sampling method and randomly divided into control (n = 35) and intervention (n = 35) groups. The intervention group was trained on positive thinking skills in eight sessions of a workshop. Before and after the intervention, stress, anxiety, depression, and quality of life in both the groups were measured using the Depression, Anxiety, and Stress Scale-21 and Short Form-36 Questionnaire. Data were analyzed using paired t-test, independent t-test, Kolmogorov–Smirnov, and Chi-square tests.

RESULTS: There was no significant difference in the mean scores of stress, anxiety, depression, and quality of life in the two groups before the intervention.($P > 0.05$), and in the control group, there was no statistically significant difference before and after the intervention ($P = 0.092$, $P = 0.228$, 0.280, respectively). In the intervention group, the mean score of stress and anxiety decreased from 23.65 ± 4.12 to 16.68 ± 4.41 ($P < 0.001$) and from 17.77 ± 5.15 to 14.57 ± 4.18 ($P = 0.002$), respectively, and that of the patients' quality of life also increased from 35.19 ± 10.07 to 55.98 ± 11.71 ($P < 0.001$). However, the mean score of depression did not change significantly after the intervention ($P = 0.689$).

CONCLUSION: According to the results of this study, the use of positive thinking intervention programs with other methods for hemodialysis patients' care and treatment is recommended as a nonpharmacological, cost-effective, and uncomplicated method.

Keywords:

Anxiety, depression, optimism, quality of life, stress

Introduction

Today, with increasing life expectancy, one of the major problems in the field of human health is chronic diseases.[1] End-stage renal disease is one of the chronic diseases that endangers not only the physical health but also the mental health of patients[2,3] so that it has led to an increase in the prevalence of mental disorders, including anxiety and depression.[4] Studies have shown that the prevalence of depression in patients undergoing hemodialysis is about three times higher than other patients, and in some studies, 10%–66% have been reported.[5-7] Problems such as dietary restrictions, side effects of medications,

How to cite this article: Shokrpour N, Sheidaie S, Amirkhani M, Bazrafkan L, Modreki A. The effect of positive thinking training on stress, anxiety, depression, and quality of life among hemodialysis patients: A randomized controlled clinical trial. J Edu Health Promot 2021;10:225.

underlying illnesses, dependence on dialysis machines, poor sleep, lack of mobility, and changes in sexual activity have led to mental disorders such as anxiety and depression in these patients and it has affected their quality of life.[8] Lack of a positive outlook on life is one of the causes of depression, anxiety, and reduced quality of life. On the other hand, positive thinking and avoiding negative thoughts are one of the important strategies to overcome psychological problems and increase self-efficacy in patients.[9,10] One of the important aspects of care in hemodialysis patients is the improvement of their psychological states and quality of life.[11] Today, education has become one of the most important areas of health care.[12-14] Studies have shown that training hemodialysis patients have been very effective in improving their psychological well-being.[11,15] One of the most important educational approaches to dealing with stress, anxiety, and depression is positive training. Positive psychology training improves people's mental and psychological conditions and leads to positive experiences and positive characteristics.[16,17] The goal of positive psychology is to identify the positive aspects in people and strengthen them in order to prevent and promote the mental health.[18] Positive beliefs have a positive relationship with various aspects of health and play an important role in preventing the occurrence of physical and mental disorders and increasing the level of mental health. Positive interventions through increased positive emotions reduce depression; increase happiness and psychological well-being; and improve quality of life.[19,20] Positive thinking skills training increases the ability to manage stress and regulates emotions by increasing self-awareness, reduces anxiety, and increases the people's ability to understand adaptation, through the training of these skills; they are able to understand the connection between their thoughts, feelings, and behaviors.[13,21] In general, although chronic diseases cannot be cured, through appropriate educational interventions and changes in perceptions about the disease, training the patients increases their self-efficacy skills and adaptability and improves their quality of life.

Increasing the prevalence of psychological problems such as stress, anxiety, and depression in hemodialysis patients, along with other factors, has led to a decrease in the quality of life of these patients. Due to the fact that not much research has been done on the effect of psychological interventions including stress, anxiety, and depression on these patients and to improve the effectiveness of therapeutic interventions in these patients, the present research was, therefore, conducted to examine the effect of positive training on stress, anxiety, depression, and the quality of life of patients undergoing hemodialysis.

Materials and Methods

The present study was a randomized controlled trial conducted between April 2019 and October 2019 in Fasa, Iran. The statistical population of this study included hemodialysis patients referred to educational and medical centers affiliated to Fasa University of Medical Sciences. The sample size was calculated using the formula below using $\alpha = 0.05$, $\beta = 0.10$, and the mean ($mean_1 = 2.82$, $mean_2 = 5.58$) and standard deviation ($S = 3.5$), based on the results of a previous study.[22] At least, a 68-subject sample size (34 subjects in each group) was determined for the study. By considering a 10% attrition rate, the final sample size for both the groups was about 75 and it was raised to 78 (39 subjects in each group).

$$n = \frac{2s^2(z_{1-\frac{\alpha}{2}} + z_{1-\beta})^2}{d^2} = \frac{2 \times (3.5)^2 \times (1.96 + 1.28)^2}{(2.76)^2}$$

Among the patients registered in the hemodialysis centers of Fasa, 89 were selected based on a simple sampling method (based on random number table) and among them, those who were not willing to participate in the study were excluded (four patients). After signing the written consent form, the patients who were interested in participating in the study were given the Depression, Anxiety, and Stress Scale-21 Questionnaire (DASS-21)and Short Form-36 (SF-36) quality of life to complete. People with anxiety, stress, and depression scores below average had a better quality of life (above 75) or those who did not meet the study inclusion criteria were excluded (seven patients). The remaining patients ($n = 78$) were divided into two intervention ($n = 39$) and control groups ($n = 39$) based on the block randomization method (Block size = 4).

During the study, one patient due to the hospitalization, three due to absence in more than two sessions were excluded from the study. Furthermore, in the control group, four people were excluded due to unwillingness to continue participating in the study, and finally, 70 people were analyzed [Figure 1].

The inclusion criteria for the study were willingness to participate in the study, age 18–70 years, end-stage renal disease and under hemodialysis, a history of hemodialysis for at least 12 months or more, lack of participation in other training courses at the same time, no history of positive thinking training, and lack of treatment with psychotropic drugs.[23] Patients who refused to continue their participation for any reason or were absent for more than two sessions were excluded.

Data collection tools included a demographic information form, SF-36 quality of life questionnaire, and DASS-21 Questionnaire

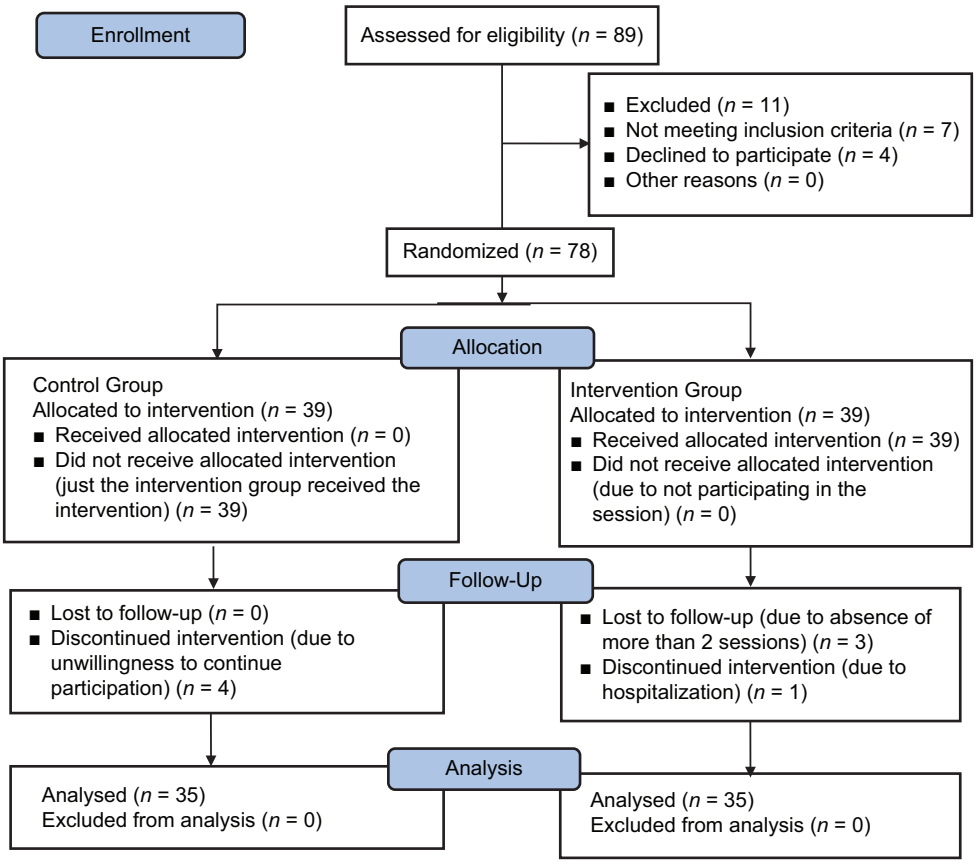

Figure 1: Consort diagram of the study among hemodialysis patients

Quality of Life Short Form-36

This questionnaire was designed by John and Ware and is one of the most common and comprehensive standard tools used internationally and has two dimensions of physical and mental health.[24,25] Its reliability has been estimated using both internal consistency and test–retest methods. With rare exceptions, the published reliability statistics have exceeded the minimum standard of 0.70 recommended for measures used in group comparisons in >25 studies; most have exceeded 0.80. A review of the first 15 published studies revealed that the median reliability coefficients for each of the eight scales were equal or >0.80, except for social functioning, which had a median reliability across studies of 0.76.[26,27] In addition, a reliability of 0.93 has been reported for the Mental Health scale, suggesting that the internal consistency method underestimated the reliability of that scale by about 3%.[28] The validity and reliability of the Persian translation of the questionnaire were confirmed in two studies by Asghari Moghaddam and Faghehi in two studies on Shahed University students. There were desirable internal consistency and reliability of all subscales of the questionnaire (test–retest coefficients of subscales ranged from 0.43 to 0.79 and Cronbach's alpha coefficients of subscales ranged from 0.70 to 0.85).[29,30] Each section was rated between 0 and 100, with a score of 0 indicating the lowest level and 100 showing the highest quality of life.[31]

Depression, Anxiety, and Stress Scale-21 Questionnaire

Depression, Anxiety, and Stress Scale-21 (DASS-21) was designed in 1995 by Lovibond and Lovibond. They used exploratory factor analysis on a large nonclinical sample (n = 2914) and reported the internal consistency of the DASSs as 0.91, 0.84, and 0.90.[32] This scale was first validated in Iran by Sahebi *et al*., and the matching of the test subscales was calculated through Cronbach's alpha and its values were 77% for depression, 79% for anxiety, and 78% for stress.[33] After reading each phrase, the subject should mark the intensity of the sign in the phrase he or she has experienced over the past week using a 4-point scale ranging from zero (does not apply to me at all) to 3 (completely about me), which ultimately puts stress levels, anxiety, and depression at one of the normal to very high levels.

The intervention

A positive training program was developed based on research and positive intervention programs, as well as internal and external studies in the field of

positive education.[9,22,34-36] Then, it was approved by the teachers of a Fasa University of Medical Sciences who had academic and clinical experience in this field. The positive training program was held eight sessions of 90 min and two sessions per week.

The control group did not receive any training during the research, but after completing it, to observe the principles of ethics in research, they were taught positive thinking content in the form of a 2-day workshop. To hold the workshops, the intervention groups were divided into smaller groups of seven people. The main topics are listed in Table 1.

The training sessions were held by a clinical psychologist through lectures, discussions and group participation, modeling and role-playing, intellectual challenge, staging, and homework; at the end of each session, the participants' questions were answered and the next sessions commenced with a review of the topics of the previous session. To blind the control group about how the interventions were performed in the intervention group, the present study used the double-blind method. Multimedia facilities such as computers, videos, and software players (PowerPoint) were used to provide training and prevent tiredness in the participants; also, catering and short breaks were used. One week after the end of the intervention, stress, anxiety, depression, and quality of life questionnaires were filled out by the participants in both the groups.

This study started after approval of Shiraz University of Medical Sciences Research Vice Chancellor with the code of IR.SUMS.REC.1399.133 and Trial Registration Number of IRCT20200514047435N1; we also obtained permission from the university and medical centers. To observe the ethical principles, we obtained written informed consent from the participants and all of them participated in the study willingly. The objectives and research processes were explained to the patients, and written consent was obtained from them, ensuring that their information would remain confidential and anonymous; also, they were assured that they can withdraw at any stage of the study willingly.

The present study was double blinded and the participants were unaware of the type of group allocation (intervention or control). Furthermore, through coding of questionnaires in Groups 1 and 2, statistical analysts were unaware of the type of allocation of intervention and control groups. Data were analyzed using SPSS 20 (IBM Chicago, USA) software.

Descriptive statistics (percentage, average, and standard deviation) were used to describe the demographic characteristics of the participants and Chi-square test was used to test the normality of demographic data distribution. Smirnov–Kolmogorov test was also used to test the normality of data distribution. Moreover, to compare the mean scores of stress, anxiety, depression, and quality of life between the two groups before and after the intervention, we used an independent *t*-test to compare the mentioned cases in each group before and after the intervention. The significance level was considered $P < 0.05$.

Table 1: The contents of positive thinking sessions

Session	Objective	The contents of the training program
1	Familiarity with the generalities	The participants introduced themselves and got to know the course providers
		A friendly relationship was established between the participants and the course providers
2	Meaning and concept of positive thinking	Giving the definition of positive thinking, positive and negative approach to events
		Recognition of the signs of positive thinking, beliefs
3	Awareness of one's abilities	Awareness of one's abilities and elimination or reduction of irrational beliefs
		Facilitators and barriers to self-awareness
		Forming four-person groups and group discussions
4	Positive social relationships	Positive communication and active feedback
		Having adaptability in dealing with unsolvable problems
5	Positive and negative thinking	Comparing positive and negative thinking through group discussion
		Expressing your experiences of negative and positive thoughts on various issues and comparing your feelings in both ways
6	Attention to one's strengths, one's ability to control one's inner and outer ones in dealing with problems	Reviewing the assignment of the previous session and expressing the feelings of the members, acquainting people with the effects and characteristics of hope and despair, paying attention to their strengths
		Expressing external and internal control features
		Assignment
7	Forgiveness	Explaining the concepts and strategies of forgiveness
		Forgiveness is introduced as a powerful tool that can turn the feeling of anger and resentment into a neutral feeling and even for some into positive feelings and emotions
8	Enjoyment and living a fruitful life	Full awareness of pleasure and deliberate effort to prolong it as much as possible and getting benefit from it

Results

Overall, 70 patients participated in the study, of whom 35 were included in the control group and 35 in the intervention group. The results of the demographic analysis of the study showed that the mean age of the participants in the intervention and control groups was 58.97 ± 9.68 and 62.82 ± 8.63 years, respectively, with a range of 36–69 years. The results of the study showed that the two groups were not significantly different in terms of age variables ($P = 0.60$), gender ($P = 0.12$), education ($P = 0.22$), marital status ($P = 0.29$), employment ($P = 0.31$), and the place of residence ($P = 0.63$) [Table 2].

The effect of the intervention on stress, anxiety, and depression of participants

Based on the results of independent *t*-test, as shown in Table 2, the mean scores of stress, anxiety, and depression before the intervention were not significantly different between the two groups ($P > 0.05$). Furthermore, a comparison of the mean scores of stress, anxiety, and depression in patients before and after the intervention in the control group did not show a statistically significant difference based on paired *t*-test ($P > 0.05$).

In the intervention group, a comparison of the patients' mean scores of stress ($P < 0.001$) and anxiety ($P = 0.002$) before and after the intervention showed a significant effect.

However, in the intervention group, the mean score of depression before and after the intervention did not show a significant change ($P = 0.46$). In addition, the mean score of the patients' quality of life before the intervention was not significantly different between the two groups ($P = 0.842$). A comparison of the mean scores of patients' quality of life before and after the intervention in the control group did not show a statistically significant difference based on the results of paired *t*-test ($P = 0.119$). The mean overall score of the patients' quality of life in the intervention group before and after the intervention showed that the intervention had a significant effect on the patients' quality of life ($P < 0.001$) [Table 3].

Discussion

The results of the above study showed that positive thinking training reduced the stress and anxiety of hemodialysis patients. Positive thinking group training created positive emotions in the participants and increased their ability to deal with stress and anxiety through raising their awareness of their abilities, innate talents and strengths.

Most patients' stress and anxiety are rooted in ignorance or negative thoughts about themselves and their surroundings. In this study, teaching internal and external control skills in dealing with problems, positive emotions, optimistic thinking and fighting negative thoughts, improving communication, and people's awareness of their strengths and abilities as a group could influence the patients' stress and anxiety. The results of this study are consistent with similar studies in this field.[16,22,37-40] However, in the above-mentioned studies, positive education reduced the rate of depression in the study population, but in this study, positive education did not have a significant effect on reducing depression in patients. It seems that the reason for this difference could be the participants' severe depression, their resistant depression, and the longer duration of treatment of depression, compared to those of stress and anxiety.

In one study which examined the effect of positivism training on depression in mothers of children with

Table 2: Demographic characteristics of the participants (*n*=70)

Demographic variable	Participants	Intervention Group (*n*=35), *n* (%)		Control Group (*n*=35), *n* (%)		K^2	*P**
Age (years)	20-39	3	8.6	2	5.7	1.02	0.60
	40-59	11	31.4	8	22.9		
	≥60	21	60	25	71.4		
Gender	Male	27	77.1	21	60	2.38	0.12
	Female	8	22.9	14	40		
Educational status	High school	23	65.7	17	48.6	3.06	0.22
	Diploma	9	25.7	16	45.7		
	Associate's degree	3	8.6	2	5.7		
Marital Status	Married	8	22.9	12	34.3	1.12	0.29
	single	27	77.1	23	65.7		
Occupation	Employed	10	28.6	14	40	1.01	0.31
	Unemployed	25	71.4	21	60		
Place of residence	Rural	20	57.1	18	51.4	0.23	0.63
	Urban	15	42.9	17	48.6		

*Chi-square test

Table 3: Comparison of the mean of depression, anxiety, stress, and quality of life in the intervention and control groups before and after the intervention

Variable	Group	Pretest	Posttest	*P***
Depression	Experimental Group	19.20±3.85	18.51±3.83	0.465
	Control Group	18.97±3.19	18.05±3.58	0.280
	*P**	0.788	0.608	
Anxiety	Experimental Group	17.77±5.15	14.57±4.18	0.002
	Control Group	16.57±4.04	17.48±4.71	0.228
	*P**	0.282	0.008	
Stress	Experimental Group	23.65±4.12	16.68±4.41	<0.001
	Control Group	22.51±3.86	23.37±4.16	0.092
	*P**	0.236	<0.001	
Quality Of life	Experimental Group	35.19±10.07	55.98±11.71	<0.001
	Control Group	34.71±9.99	36.90±13.53	0.119
	*P**	0.842	<0.001	

*Independent *t*-test, **Paired *t*-test

leukemia in the two groups of 15 people, intervention and control, the rate of depression in the intervention group decreased from moderate to normal.[37] In this study, the patients' depression in both the groups was moderate before the intervention but did not change after the intervention. In another study, positive thinking training reduced the stress levels, anxiety, and depression in juvenile delinquents. Even in the follow-up phase (1 month later), this result remained stable,[22] but this study did not have a follow-up phase. Since positive thinking intervention has been performed in hemodialysis patients for the first time, further studies are needed to confirm its effect on stress, anxiety, and depression in these patients in the long run. The results of positive thinking intervention on the quality of life of hemodialysis patients showed that positive thinking training improved the quality of life of these patients, which was consistent with the results of similar studies in this field.[9,22,41,42] Quality of life is a mental concept influenced by people's mental and psychological performance due to the positive effect that positivist thinking intervention has had on the patients' stress and anxiety. Furthermore, these patients' self-esteem was improved. It seems that improving their quality of life is not unexpected. By increasing psychological well-being and positive emotions, positive psychology interventions have led to more adaptive methods of responding to difficult situations, and ultimately, this has led to improved quality of life and reduced negative symptoms. The results of a study on 30 drug-dependent men showed that positivism training improves the quality of life and hope of these people. The difference between our study and the above-mentioned study was the number of training sessions and quality of life assessment tools.[41] Another study also assessed the impact of positivism training on the adolescent quality of life as positive, with the difference that in this study, they used different tools to measure the adolescents' quality of life. Furthermore, the sample size of our study was larger than all similar studies in this field.[22]

One of the limitations of this research was the use of self-reporting tools; also, the results of the present research are limited to hemodialysis patients, so they cannot be generalized. Other limitations of this study include the physical condition of patients, which sometimes made it difficult for them to attend the training classes for a long time; of course, we tried to solve this problem by resting and entertaining during the training session.

Conclusion

According to the results of the present study, it is possible to use positive intervention programs as a group training as a nonpharmacological, cost-effective, and uncomplicated method to increase the self-efficacy and adaptability of hemodialysis patients and as a complementary measure along with other methods used for the care and treatment programs of these patients. It is recommended that this study should be performed on other chronic patients with a larger sample size.

Acknowledgments

This study was the result of master's thesis of medical education. The sincere cooperation of the Vice Chancellor for Research and Technology of Shiraz University of Medical Sciences and the esteemed staff of the educational and medical centers of hemodialysis in Fasa city, as well as all the participants in the sincere study, is appreciated. This study was approved by the Ethics Committee of Shiraz University of Medical Sciences with the code of IR.SUMS.REC.1399.133.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. McGill RL, Bragg-Gresham JL, He K, Lacson Jr. EK, Miskulin DC, Saran R. Chronic disease burdens of incident US dialysis patients, 1996-2015. Clin Nephrol 2020;93:1-8.
2. Pei M, Aguiar R, Pagels AA, Heimbürger O, Stenvinkel P, Bárány P, *et al*. Health-related quality of life as predictor of mortality in end-stage renal disease patients: An observational study. BMC Nephrology 2019;20:144.
3. Sas C. The psychosocial evaluation is an essential part of the pretransplant workup for patients with end-stage renal disease: A social worker's perspective. Health Soc Work 2019;44:208-11.
4. Khan A, Khan AH, Adnan AS, Sulaiman SA, Mushtaq S.

Prevalence and predictors of depression among hemodialysis patients: A prospective follow-up study. BMC Public Health 2019;19:531.
5. Mosleh H, Alenezi M, Al Johani S, Alsani A, Fairaq G, Bedaiwi R. Prevalence and factors of anxiety and depression in chronic kidney disease patients undergoing hemodialysis: A cross-sectional single-center study in Saudi Arabia. Cureus 2020;12:e6668.
6. Işık Ulusoy S, Kal Ö. Relationship among coping strategies, quality of life, and anxiety and depressive disorders in hemodialysis patients. Ther Apher Dial 2020;24:189-96.
7. Baykan H, Yargic I. Depression, anxiety disorders, quality of life and stress coping strategies in hemodialysis and continuous ambulatory peritoneal dialysis patients. Klinik Psikofarmakoloji Bülteni Bulletin Clin Psychopharmacol 2012;22:167-76.
8. Hagemann PM, Martin LC, Neme CM. The effect of music therapy on hemodialysis patients' quality of life and depression symptoms. J Bras Nefrol 2019;41:74-82.
9. Farnam A. The effect of positive thinking training in enhancement of quality and hope of life among the elderly. Positive Psychol 2016;2:75-88.
10. Ahadi H, Asadzadeh H. Effectiveness of positive thinking skills training on depression in female students. Iran J Educ Sociol 2019;2:90-9.
11. Espahbodi F, Hosseini H, Mirzade MM, Shafaat AB. Effect of psycho education on depression and anxiety symptoms in patients on hemodialysis. Iran J Psychiatry Behav Sci 2015;9:e227.
12. Fereidouni Z, Sabet Sarvestani R, Hariri G, Kuhpaye SA, Amirkhani M, Kalyani MN. Moving into action: The master key to patient education. J Nurs Res 2019;27:1-8.
13. Beiranvand M, Moghadam MK, Sabounchi R, Asadpour G, Jahani N, Ghafuori A. Positive thinking training increases tolerance levels of ambiguity and distress in men with hemophilia. J Sports Sci 2019;7:88-95.
14. Zandiyeh Z, Zare E, Hedayati B. The impact of group training about parenting styles on maternal attitudes toward parenting styles. J Educ Health Promot 2015;4:85.
15. Darvishi A, Otaghi M, Mami S. The effectiveness of spiritual therapy on spiritual well-being, self-esteem and self-efficacy in patients on hemodialysis. J Relig Health 2020;59:277-88.
16. Ahangarzadeh Rezaei S, Nematolahei A, Oladrostam N. The effect of positive thinking training on stress, anxiety and depression in coronary heart disease. J Urmia Nurs Midwifery Fac 2017;15:339-48
17. Shaghaghi F, Abedian Z, Forouhar M, Esmaily H, Eskandarnia E. Effect of positive psychology interventions on psychological well-being of midwives: A randomized clinical trial. J Educ Health Promot 2019;8:160.
18. McLean S, Dixit J. The power of positive thinking: A hidden curriculum for precarious times. Adult Educ Q 2018;68:280-96.
19. Lyubomirsky S, Layous K. How do simple positive activities increase well-being? Curr Dir Psychol Sci 2013;22:57-62.
20. Ghazbanzadeh R, EsmaeiliShad B, Masoumifard M, Hatamipour K. The effect of positive thinking group training on psychological well-being, positive meta-emotion and couple relationship quality in nurses. Iran J Psychiatr Nurs 2020;7:26-34.
21. Beiranvand M, Moghadam MK, Sabounchi R, Delphan M, Ghafuori A, Keramati Moghadam R. The effectiveness of positive thinking training on self-efficacy and emotion regulation in men with hemophilia. Trends Med 2019;19:1-5.
22. Nikmanesh Z, Zandvakili M. The effect of positive thinking training on quality of life, depression, stress and anxiety in delinquent juveniles. Psycologe J 2015;8:14-21.
23. Ebrahimi H, Sadeghi M, Amanpour F, Dadgari A. Influence of nutritional education on hemodialysis patients' knowledge and quality of life. Saudi J Kidney Dis Transpl 2016;27:250-5.
24. Bunevicius A. Reliability and validity of the SF-36 Health Survey Questionnaire in patients with brain tumors: A cross-sectional study. Health Qual Life Outcomes 2017;15:92.
25. Ware JE Jr., Gandek B. Overview of the SF-36 Health Survey and the International Quality of Life Assessment (IQOLA) project. J Clin Epidemiol 1998;51:903-12.
26. McHorney CA, Ware JE Jr., Lu JF, Sherbourne CD. The MOS 36-item Short-Form Health Survey (SF-36): III. Tests of data quality, scaling assumptions, and reliability across diverse patient groups. Med Care 1994;32:40-66.
27. Ware JE, Snow KK, Konsinski MA, Gandek B. The Health Institute, New England Medical Center. Boston, Massachusetts; 1993.
28. Rezaei S, Khaksari Z. Validity and reliability of short form health survey questionnaire (SF-36) for use in iranian patients with traumatic brain injury (TBI). Iran J Neurosurg 2019;5:79-92.
29. Asghari Moghaddam M, Faghehi S. Validity of the SF-36 health survey questionnaire in two iranian samples. Sci J Clin Psycho Pers 2003;1:1-10.
30. Ware JE Jr. SF-36 health survey update. Spine (Phila Pa 1976) 2000;25:3130-9.
31. Atapour A, Nasr S, Boroujeni AM, Taheri D, Dolatkhah S. A comparison of the quality of life of the patients undergoing hemodialysis versus peritoneal dialysis and its correlation to the quality of dialysis. Saudi J Kidney Dis Transpl 2016;27:270-80.
32. Lovibond PF, Lovibond SH. The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. Behav Res Ther 1995;33:335-43.
33. Sahebi A, Asghari MJ, Salari RS. Validation of depression anxiety and stress scale (DASS-21) for an Iranian population. Iran Psychol 2005;4:299-313.
34. Dargahi S, Mohsen Zade F, Zahrakar K, Didehban M. Effect of positive thinking training on psychological well-being and marital relationship quality of infertile couple. Middle East J Disabil Stud 2017;7:97.
35. Seligman ME. Positive psychology, positive prevention, and positive therapy. Handb Posit Psycho 2002;2:3-12.
36. Seligman ME, Ernst RM, Gillham J, Reivich K, Linkins M. Positive education: Positive psychology and classroom interventions. Oxf Rev Educ 2009;35:293-311.
37. Douki HE, Elyasi F, Hasanzadeh R. Effectiveness of positive thinking training on anxiety, depression and quality of life of mothers of children with leukemia. J Nurs Midwifery Sci 2019;6:21.
38. Babanataj R, Mazdarani S, Hesamzadeh A, Gorji MH, Cherati JY. Resilience training: Effects on occupational stress and resilience of critical care nurses. Int J Nurs Pract 2019;25:e12697.
39. Moaser ZA. Effectivenes of positive thinking skills training on hamedan students anxiety and happines. Spec J Psychol Manage 2016;2(3):72-79.
40. Kazemi N, Rasoulzadeh V, Mohammadi ST. Effect of positive thinking education on social anxiety and cognitive avoidance of mothers of children with specific learning disabilities. Q J Child Ment Health 2019;5:148-58.
41. Mohammad-Najar N, Khoshnevis E, Banisi P. Effectiveness of positive thinking skills training on the hope and quality of life of drug-dependent people. Addict Health 2017;9:120-8.
42. Mousavi E, Esmaeili A, Saless SS. The effect of positive thinking on quality of life and resiliency of cancer patients. Razavi Int J Med 2015;3:e27122.