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Comparison of the Effectiveness of Positive Thinking Group Training and Acceptance and Commitment Therapy on Psychological Well-being and Risky Behaviors of Patients with HIV

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Abstract

Background: The purpose of the present study was to compare the effectiveness of positive thinking group training and acceptance and commitment therapy on psychological well-being and risky behaviors of patients with HIV.

Methods: A quasi-experimental pretest-posttest research method was used with a control group. Accordingly, 45 HIV patients, referring to Imam Khomeini Hospital in Tehran, were selected and randomly assigned to groups 1-3, including positive thinking (n=15), ACT (n=15), and control (n=15) groups, respectively. Scales of Psychological Well-being by Ryff (1989) and Risk Behaviors Standard Scale (2010) were administered for all three groups (pretest). Subsequently, the participants of the experimental groups attended eight 90-minute sessions of group training. The posttest was performed two weeks after training. Multivariate and univariate analyses of variance (MANCOVA and ANCOVA) were used to analyze the data.

Results: The results showed that positive thinking group training was effective in promoting psychological well-being and reducing high-risk behaviors. The results also demonstrated that acceptance and commitment therapy was effective in promoting psychological well-being and reducing high-risk behaviors. According to the findings, there was no significant difference between the effectiveness of positive thinking group training and acceptance and commitment therapy on psychological well-being and risky behaviors of people living with HIV ($p > 0.05$).

Conclusion: Both educational interventions (positive thinking and ACT approach) can increase psychological well-being and reduce high-risk behaviors of HIV+ patients, and there was no significant difference between the two intervention approaches. Therefore, both approaches have beneficial effects on improving the quality of life among people living with HIV.

Keywords: Acceptance and commitment therapy, HIV, Positive thinking, Risk taking, Social behavior

Introduction

Acquired Immunodeficiency Syndrome (AIDS) is a condition caused by infection with the Human Immunodeficiency Virus (HIV) and has recently become an epidemic that threatens the international community (1). HIV patients have limited access to occupation, educational and health services (2). Research shows that HIV is often stressful and affects the patients' psychological well-being (3,4). According to Ryff (5), psychological well-being means striving for improvement, manifested in the realization of individual talents and abilities and formed by main dimensions of self-acceptance (positive attitudes towards the self and the past and present behaviors), purpose in life (a sense of directedness), personal growth (emphasizing the importance of continued development and realizing potentials), positive relations with others (empathy and mutual interpersonal relationships), environmental mastery (ability to choose or create contexts suitable to personal needs and values), and autonomy (ability to maintain personal standards and resist adaptation and internal control). Related research shows that HIV seems to have the greatest effect on psychological well-being compared to other chronic diseases and is a threatening factor to psychological well-being (6).

Risky behaviors are important for public health intervention because of their association with HIV infection. Not only do risky HIV-related behaviors contribute to disease transmission, but also their changes and patterns are among the main determining factors in the HIV epidemic within the community (7). Risky sexual behaviors are a major threat to the physical and social health of adolescence and young ages (8). According to several studies, people tend to reduce risky behaviors and show safer sexual behaviors after becoming aware of their disease (9,10). Research has shown that psychological interventions can be effective in reducing high-risk behaviors (11). Hence, it seems that HIV patients face many problems and challenges in individual and social life, necessitating psychological interventions to enable them to deal with the psychological and social problems of their disease.

Some treatment interventions are done in groups. Group therapy is done to promote mental development and reduce mental problems. The goals of promoting mental development and reducing psychological problems are achieved through cognitive and emotional exploration of interactions between members and therapist (12).

Positive psychology is one of the interventions considered by therapists in recent years. Positive psychology interventions aim to enhance positive emotions and pleasure, engagement, and purpose in life (13). Research has shown that the positive thinking approach decreases depression significantly while increasing happiness and a sense of mental comfort (14), as well as psychological well-being (15).

Acceptance and Commitment Therapy (ACT) is another psychological intervention that affects various psychological factors and has been considered by researchers because of its emphasis on psychological flexibility (16). Empirical evidence for research in the field of the ACT approach indicates its effects on emotional and behavioral problems and disorders. For example, this treatment has been significantly effective in reducing disorders such as depression and anxiety (17), and stress and depression (18). It has also been shown to have a significant effect on psychological well-being and resilience (19).

Based on the results of previous research, acceptance, and commitment therapy, successful and standard intervention methods in correcting habits and improving and reducing psychological problems have been considered in other groups, but very limited investigations have been done on their effectiveness among HIV+ patients. No significant investigation has been implemented on the effectiveness of a positive approach on psychological problems. Thus, there was a need to implement extensive measures in this field. The, to the purpose of the current study was to find whether there is a difference between the effectiveness of positive thinking approaches and acceptance and commitment therapies in psychological well-being and risky behaviors of HIV patients in order to empower this population.

Materials and Methods

The present research used a quasi-experimental method. The pretest-posttest design with control and experimental groups was used to compare the

effectiveness of positive thinking group training and acceptance and commitment therapy on psychological well-being and risky behaviors of patients with HIV and also to test the research hypotheses. Accordingly, the research steps included random allocation of the subjects into control and two experimental groups, implementation of pretest, pretest data collection, administration of independent variables for the experimental group, implementation of posttest, and posttest data collection. The statistical population of the study included all patients with HIV who referred to the Behavioral Counseling Center of Imam Khomeini Hospital in Tehran and had a medical record. Therefore, out of all HIV patients who volunteered to participate in the training program, 45 patients were matched (in terms of age, education, and socio-cultural conditions) and selected as the research sample through purposive sampling. Then, participants were randomly assigned to groups 1-3, including positive thinking (n=15), ACT (n=15), and control (n=15) groups, respectively (Figure1).

HIV infection, complete satisfaction for cooperation, absence of acute psychological disorders, no drug use, and being literate were considered as the inclusion criteria. Exclusion criteria were discontinuing cooperation with the researchers, absence of more than two sessions in the medical training, and taking psychiatric drugs.

Psychological Well-being Scale

This questionnaire was designed and developed by Ryff (20), to assess the psychological well-being of individuals. There are 54 questions and 6 components of autonomy, environmental mastery, personal growth, positive relationships with others, purpose in life, and self-acceptance, scored on a Likert 6-point scale from completely disagree (1), to completely agree (6). Items 3, 5, 7, 8, 10, 12, 13, 14, 16, 18, 20, 22, 24, 25, 26, 27, 30, 31, 32, 39, 40, 41, 43, 44, 46, 49, 50, and 54 are scored inversely. Next, the scores of the 54 questions are added together, the minimum and maximum of which are 54 and 324, respectively. Low, moderate, and high levels of psychological well-being are represented by scores 54-108, 108-216, and >216, respectively. Ekhbaraty and Bashardost (21), reported Cronbach's alpha coefficient of 0.79 for this questionnaire and validity of the questionnaire has been approved by the researchers. The Persian version of this questionnaire was used from the www.madsg.com website.

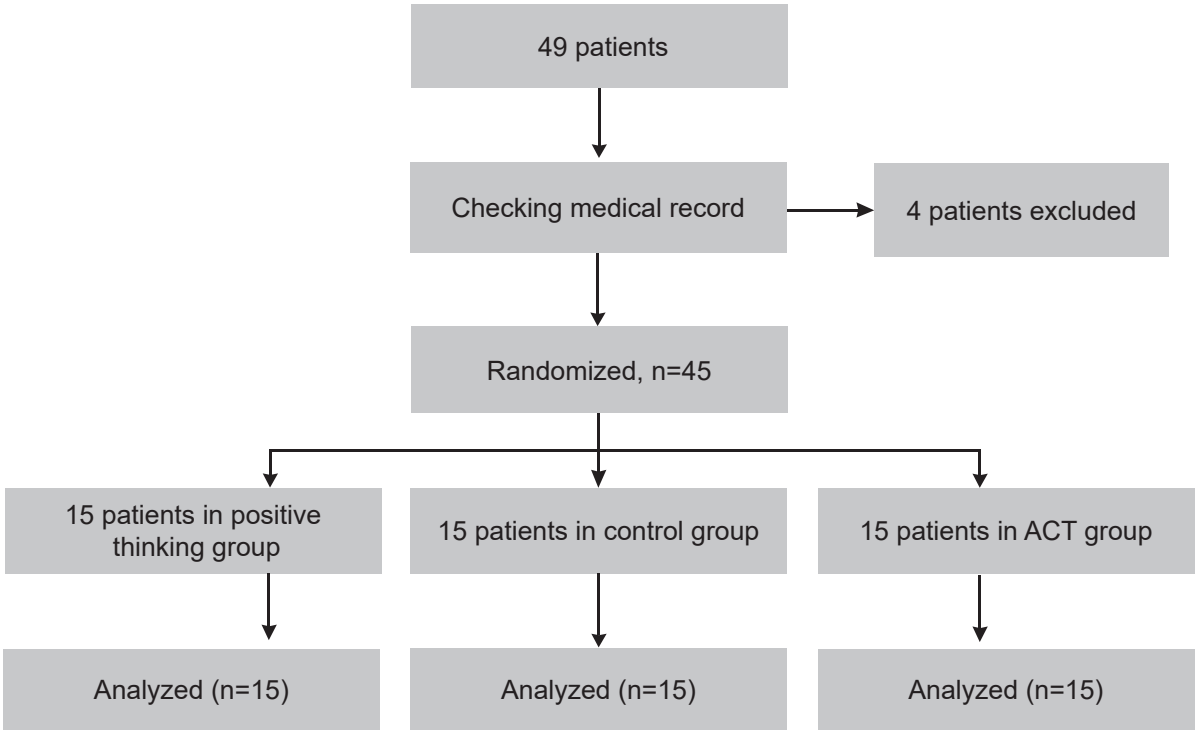

Figure 1. Flow of participants through study.

Risk Behaviors Standard Scale

The Sexual Risk Behaviors Scale by Zarei *et al* (22), can be used to measure risky behaviors. This questionnaire consists of ten questions, the first eight of which are scored directly from 0 to 4 and the last two questions inversely from 0 to 3. The sum of these scores identifies individuals' risky behaviors, with higher scores indicating higher levels of risky sexual behaviors. The reliability of the questionnaire was 0.68 by retesting method, and its Cronbach's alpha was 0.86 (22). Also, Mirzapour (7), reported the reliability of the risky sexual behavior scale by Cronbach's alpha of 0.84.

Training procedure

The first intervention group received eight 90-minute sessions of positive thinking group training. To implement positive education, the book entitled "Positive Psychotherapy: Happiness, Treatment, and Promotion" (12), was used. table 1 summarizes the structure of these sessions. Acceptance and commitment therapy training was performed for the second intervention group in eight 90-minute group sessions once a week. table 2 shows a summary of acceptance and commitment therapy sessions. Post-test was performed for all three groups after two weeks training. Then, descriptive statistics, MANCOVA, and ANCOVA were used to analyze the collected data.

Results

According to descriptive statistics and the difference between the pre-test and post-test of the components of psychological well-being and risky behaviors, the scores of the experimental group improved in the post-test while this difference was negligible in

Table 1. Structure of positive thinking group training sessions

Training sessions	Structure of sessions
Session 1	Establishment of relationships, explaining group rules, illustrating positive thinking and its benefits, and teaching to use positive affirmations
Session 2	Teaching emotion recognition skills, the role of proper control of positive and negative emotions, and their contributions to persistent happiness in life
Session 3	Identifying the potential abilities of members, examining their weaknesses and strengths and the previous situations in which these strengths have helped them, and finally developing specific strengths on the path to happiness, pleasure, commitment, and meaning
Session 4	Review of previous sessions and teaching stress management skills
Session 5	Teaching appreciation, the effects of appreciation on peace of mind, appreciation as a powerful tool to change anger and irritation into neutral or even positive emotions, establishment of positive thinking in hardships, getting rid of resentment and hatred and its contribution to the improvement of interpersonal relationships
Session 6	Teaching members to find purpose in life and encouraging them to think about long-term and short-term goal setting
Session 7	Training and familiarity with negative and destructive beliefs to maintain happiness and enthusiasm
Session 8	Review of previous sessions, awareness of the blessing of time and how to manage and appreciate it, emphasis on healthy nutrition and exercise in daily routine aimed at satisfaction and enjoyment

Table 2. Structure of acceptance and commitment therapy group sessions

Training sessions	Objective	Content
Session 1	Relationship therapy and creative hopelessness	Introduction, specification of group rules, metaphors of the pit and two mountains, introduction of the past inefficient system
Session 2	Establishment of creative hopelessness, control is the problem, not the solution	Metaphors of the polygraph, jelly doughnut, and tug-of-war with a monster metaphor
Session 3	Assessment of problems and willingness to experience	Metaphors of two scales, the two scale-pans, and a box full of problems
Session 4	Introducing diffusion of thoughts and feelings	Metaphors of passengers on the bus, leaves floating on a stream, and teaching deep breaths
Session 5	Mindfulness	A metaphor of chessboard and meditation exercises
Session 6	Conceptualization of values	Value as behavior, selection, and identification of values, a metaphor of funeral/tombstone
Session 7	Goal setting	Examining selection versus judgments/decisions, the gardening metaphor, examining the existing barriers to goals and a willingness to accept them, a bubble in the road metaphor
Session 8	Commitment in practice	Teaching clients to be therapists themselves, all-or-nothing thinking, jumping exercise, a metaphor of idle/lazy person

Table 3. Demographic characteristics of the sample groups

Variables	Positive thinking	ACT	Control	p -value
Age (years), mean±SD	36±5.18	36±5.18	35.7±4.8	0.978
Marital status, n (%) Married Single	5 (33.3) 10 (66.7)	5 (33.3) 10 (66.7)	4 (26.7) 11 (73.3)	0.92
Gender, n (%) Female Male	4 (26.7) 11 (73.3)	5 (33.3) 10 (66.7)	5 (33.3) 10 (66.7)	0.92
Transmission route, n (%) Sexual contact Injection drug use Blood production	9 (60.1) 4 (26.6) 2 (13.3)	9 (60.1) 4 (26.6) 2 (13.3)	9 (60.1) 4 (26.6) 2 (13.3)	>0.99
Duration of infection 1-2 years 2-5 years 5-7 years	5 (33.3) 3 (20.1) 7 (46.6)	5 (33.3) 4 (26.6) 6 (40.1)	4 (26.7) 4 (26.7) 7 (46.6)	0.98

Table 4. Inferential statistics indices used to calculate multivariate analysis of covariance

Source of change	Variables	Sum of squares	df	Mean of squares	F test	p-value	Eta2
The effect of experimental variable	Self-acceptance	3318.32	2	1659.16	39.43	0.001	0.69
	Positive relations with others	3371.01	2	1685.51	60.25	0.001	0.77
	Autonomy	3814.90	2	1907.45	48.52	0.001	0.73
	Environmental mastery	4502.62	2	2251.31	108.70	0.001	0.86
	Purpose in life	4778.43	2	2389.22	71.51	0.001	0.80
	Personal growth	2895.14	2	1447.57	54.56	0.001	0.75
Error	Self-acceptance	1514.97	36	42.08			
	Positive relations with others	1007.07	36	27.97			
	Autonomy	1415.21	36	39.31			
	Environmental mastery	745.63	36	20.71			
	Purpose in life	1202.79	36	33.41			
	Personal growth	955.07	36	26.53			

Table 5. Pairwise mean comparison of psychological well-being in terms of intervention approach from Bonferroni test

Variables	Group	Mean	Comparisons		Mean difference	Standard error	p-value
Self-acceptance	Positive thinking	37.28	Positive thinking	Acceptance and commitment	1.84	2.40	>0.99
	Acceptance and commitment	35.44		Control	19.53	2.45	0.001
	Control	17.75	Acceptance and commitment	Control	17.69	2.39	0.001
Positive relations with others	Positive thinking	37.57	Positive thinking	Acceptance and commitment	0.38	2.00	>0.99
	Acceptance and commitment	37.19		Control	18.98	1.95	0.001
	Control	18.58	Acceptance and commitment	Control	18.60	2.32	0.001
Autonomy	Positive thinking	39.99	Positive thinking	Acceptance and commitment	0.38	2.32	>0.99
	Acceptance and commitment	39.61		Control	20.18	2.37	0.001
	Control	19.81	Acceptance and commitment	Control	19.80	2.31	0.001

Cont Table 5

Environmental mastery	Positive thinking	37.93	Positive thinking	Acceptance and commitment	1.53	1.68	>0.99
	Acceptance and commitment	36.41		Control	22.47	1.72	0.001
	Control	15.46	Acceptance and commitment	Control	20.94	1.68	0.001
Purpose in life	Positive thinking	38.47	Positive thinking	Acceptance and commitment	-0.62	2.14	>0.99
	Acceptance and commitment	39.09		Control	22.03	2.18	0.001
	Control	16.44	Acceptance and commitment	Control	22.65	2.13	0.001
Personal growth	Positive thinking	37.22	Positive thinking	Acceptance and commitment	3.11	1.90	0.33
	Acceptance and commitment	34.11		Control	18.83	1.94	0.001
	Control	18.40	Acceptance and commitment	Control	15.72	1.90	0.001

Table 6. Inferential statistics indices used to calculate multivariate analysis of covariance

	Source of change	Sum of squares	df	Mean of squares	F test	p-value	Eta2
Risky behaviors	Pretest effect	83.69	1	83.69	8.87	0.001	0.18
	Experimental variable effect	2376.40	2	1188.20	125.97	0.001	0.86
	Error	386.71	41	9.43			

the control group. The value of Wilks Lambda in these variables was 0.002, and the value of Pillai's Trace was 1.4. Since the significance level of these indicators is <0.01, there was a significant difference between the experimental and control groups in terms of the combination of dependent variables (psychological well-being and risky behaviors) in the research sample. table 3 shows the demographic characteristics of the three groups.

According to the results shown in table 4, the calculated F for the experimental variable in all components of psychological well-being was greater than the critical value of F (with df and p<0.01). It can be concluded with 99% confidence that there was a significant difference between the mean of all components of psychological well-being in the experimental (exposed to the independent variable) and control groups in the study population. According to the calculated effect size, the independent variable can explain a high percentage of the variance in all components of the psychological well-being of the study sample.

The result of the F-test indicated a significant difference between the mean of all components of psychological well-being in terms of the intervention approach. Paired comparisons were conducted using the Bonferroni test. According to the results of table 5, the significance level of the Bonferroni

Table 7. Pairwise mean comparison of risky behaviors in terms of intervention approach from Bonferroni test

Variables	Group	Mean	Comparisons		Mean difference	Standard error	P- value
Risky behaviors	Positive thinking	9.45	Positive thinking	Acceptance and commitment	-0.41	1.13	>0.99
	Acceptance and commitment	9.86		Control	-15.90	1.13	0.001
	Control	25.35	Acceptance and commitment	Control	-15.49	1.15	0.001

test is <0.05. Therefore, it can be concluded that there was no significant difference between the means of psychological well-being components in positive thinking group therapy and acceptance and commitment therapy.

According to the results of table 6, the calculated F for the experimental variable (125.97) was greater than the critical value of F (with df of 2.41 and p<0.01). It can be concluded with 99% confidence that there was a significant difference between the mean of all components of risky behaviors in the experimental (exposed to the independent variable) and control groups in the study population. According to the calculated effect size, the independent variable can explain 86% of the variance of all components of risky behaviors in the study sample.

The result of the F test indicated a significant difference between the mean of all components of risky behaviors in terms of the intervention approach. Paired comparisons were conducted using the Bonferroni test. According to the results of table 7, the significance level of the Bonferroni test is <0.05. It can be concluded that there was no significant difference between the means of risky behaviors in positive thinking group therapy and acceptance and commitment therapy.

Discussion

The results demonstrated that there was a significant difference between the experimental and control groups in terms of psychological well-being of the study sample. According to the results of the study, it can be concluded that there is no significant difference between the effectiveness of the positive thinking group training approach and acceptance and commitment therapy in psychological well-being of HIV patients. In other words, both positive thinking group training and acceptance and commitment therapy affect the psychological well-being of HIV patients, and there is no significant difference between their effectiveness.

The results of the present study are consistent with the results obtained by Mostafa *et al* (11), Forgeard and Seligman (23), Satici (24), Yıldırım and Arslan (25), and Faezipour *et al* (18). Based on the results, it can be argued that both positive thinking group training and acceptance and commitment therapy promote the logical and cognitive thinking of individuals. The positive thinking group therapy teaches individuals to change their attitudes, respond to the problems of life, and not to focus on the losses by designing new programs such as setting goals, values, and giving meaning to sufferings. Thus, positive thinking training can promote six dimensions of psychological well-being (self-acceptance, autonomy, personal growth, positive relationships with others, environmental mastery, purpose in life, and personal growth) by changing the attitudes and thinking of HIV patients. During the course of acceptance and commitment therapy, participants are supposed to accept suffering as a part of the normal human experience. Patients can learn to be more adaptable to pain and correct their verbal associations with pain by accepting it as just another experience in life. This ability to use language can often alleviate problems (13). Consistent with the present study, Satici (24), also referred to

positive thinking as an important source for individual psychological well-being and mental health. Having hope in positive people prevents negative thoughts and emotions that occur in unfavorable living circumstances. Besides, concentration on positive thoughts can enhance resilience in stressful life events. Therefore, hope and positive thinking reduce the negative effects of stressors and promote the mental well-being of individuals (25). Dambrun and Dubuy (26), showed that positive psychology reduces depression and anxiety and increases mental health, life satisfaction, and self-esteem. In line with the results of the present study, Forgeard and Seligman (23), examined the consequences of optimism and positive thinking and found that although optimistic people see negative events, they do not consider them coercive, leading to a constructive response to such events. They are also confident in dealing with problems. A positive thinker sees happiness, pleasure, health, and the successful outcomes of every situation or task.

The results showed that there was a significant difference between the experimental and control groups in terms of risky behaviors. According to the results of the study, it can be concluded that there is no significant difference between the effectiveness of the positive thinking group training approach and acceptance and commitment therapy in risky behaviors of HIV patients. In other words, both positive thinking and acceptance and commitment therapy decrease risky behaviors of HIV patients, and there is no significant difference between their effectiveness.

The results of the present study are in line with the results obtained by Reiter and Wilz (14), Lyubomirsky and Layous (15), and Yasaee seke *et al* (17). In explaining the results of the present study, it can be argued that patients become aware of the causes of their behaviors and try to improve their thoughts and attitudes when they receive acceptance and commitment therapy. Besides, the trust in the emotional support by loved one's increases, and the lack of confidence decreases as HIV patients receive positive thinking training. Thus, positive thinking and acceptance and commitment therapy reduce the risky behaviors of HIV patients. Positive thinking training promotes self-awareness, while and purpose in life is considered as one of the foundations of positive psychology (27). Hence, HIV patients who receive positive thinking treatment can have a healthier life with higher levels of self-awareness, meaning, and purpose in life while they also experience the development of problem-solving abilities. Consistent with the results of this study, Reiter and Wilz (14), showed that positive psychology intervention reduces depression and feelings of stigma in HIV patients. On the other hand, acceptance and commitment therapy teaches individuals to respond to events more flexibly by reducing the undesirable functions of thoughts. Consequently, HIV patients can cope better with life problems and have higher levels of flexibility and resilience. Yasaee seke *et al* (17), showed that acceptance and commitment therapy could reduce depression and anxiety which confirms the results obtained in the present study. In general, according to the basic principle of acceptance and commitment approach, psychological sufferings usually prevent individuals from taking action based on the core values of their lives due to experiential avoidance. Acceptance and commitment therapy increases flexibility in responding to feelings and thoughts through the process of mindfulness, acceptance, and behavioral change (28). Thus, people who receive acceptance and commitment therapy and those undergoing positive thinking intervention can rationally control their emotions, which in turn reduces risky behaviors.

Conclusion

Since this study was conducted on HIV patients, caution should be taken in generalizing the findings of the study to other groups. Besides, follow-up and long-time investigation of the effects of positive thinking intervention were not carried out due to time constraints. Other limitations of this research, which were beyond the control of the researchers, included the differences in personal, psychological, cultural, and social characteristics of the participants. Despite significant efforts, the effect of some factors such as the passage of time and experience of the subjects cannot be overlooked to control the confounding variables. Future studies should evaluate samples with other specific diseases and in other medical centers to further generalize the results. According

to the results of the research, neither of the two interventions of positive thinking approach and acceptance and commitment therapy is superior to the other. Therefore, it is suggested that using therapeutic approach based on acceptance and commitment due to its underlying mechanisms such as acceptance, awareness raising, non-judgmental observation, and experiential avoidance by combining positivity techniques increase the effectiveness of treatment. It is recommended to teach the basic principles of positive thinking approach and acceptance and commitment therapy to the medical staff for treatment of specific diseases in medical centers.

Conflict of Interest

There is no conflict of interest.

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References

1. Cleghorn FR, Reitz MS, Popovic M, Gallo RC. Human immunodeficiency viruses. Bennett's principles and practice of infectious diseases. 6th ed. Philadelphia: Churchill Caurehill Livingston; 2005. 2119-33.

2. SeyedAlinaghi SA, Paydary K, Afsar Kazerooni P, Hosseini M, Sedaghat A, Emamzadeh-Fard S, et al. Evaluation of stigma index among people living with HIV/AIDS (PLWHA) in six cities in Iran. Thrita 2013;2(4):69-75.

3. Andersson GZ, Reinius M, Eriksson LE, Svedhem V, Esfahani FM, Deuba K, et al. Stigma reduction interventions in people living with HIV to improve health related quality of life. Lancet HIV 2020 Feb;7(2):e129-e140.

4. Zarei F, Khakbaz H, Karami H. The effectiveness of self-awareness skills training on reducing high-risk behaviors related to the opposite sex in addicts. J Addiction Research on Substance Abuse 2010;4(15):63-70.

5. Ryff CD. Psychological well-being revisited: Advances in the science and practice of eudaimonia. Psychother Psychosom 2014;83(1):10-28.

6. Poudel KC, Nakahara S, Poudel-Tandukar K, Jimba M. Perceptions towards preventive behaviors against HIV transmission among PLWHA in Kathmanda, Nepal. Public Health 2007;121(12):958-61.

7. Mirzapour, P. Evaluation of the effectiveness of social marketing methods in order to change attitudes towards sexual health, reduce high-risk sexual behaviors and increase self-care in HIV-positive people referred to the Behavioral Diseases Counseling Center of Imam Khomeini Hospital in Tehran during 1397-1397. Master Thesis, General Psychology, Payame Noor University of Garmsar. 2018.

8. Aalsma MC, Tong Y, Wiehe SE, Tu W. The impact of delinquency on young adult sexual risk behaviors and sexually transmitted infections. J Adolesc Health 2010;46(1):17-24.

9. Traeger MW, Cornelisse VJ, Asselin J, Price B, Roth NJ, Willcox J, et al. Association of HIV pre-exposure prophylaxis with incidence of sexually transmitted infections among individuals at high risk of HIV infection. American Medical Association 2019;321(14):1380-90.

10. Irungu E, Chersich MF, Sanon C, Chege R, GaillardP, Temmerman M, et al. Changes in sexual behaviour

among HIV-infected women in west and east Africa in the first 24 months after delivery. AIDS 2012 May 15;26(8):997-1007.

11. Mostafa MS, Norouzizarmehri Z, SeyedAlinaghi SA, Mirzapour P, Najafi Z, Dadras O. Effects of life skills and twelve steps on problem solving and risk-taking behaviors among people living with HIV, Tehran, Iran. J International Translational Medicine 2018;6(2):70-5.

12. Beninnick, F. (2015). Positive Behavior Therapy: From reducing pain to increasing success. Translated by Akram Khamseh. Arjmand publications.

13. Seligman MEP, Steen TA, Park N, Peterson C. Positive psychology progress: Empirical validation of interventions. American Psychologist 2005;60(5):410-21.

14. Reiter Ch, Wilz G. Resource diary: A positive writing intervention for promoting well-being and preventing depression in adolescence. J Positive Psychology: Dedicated to furthering research and promoting good practice 2015;11(1):99-108.

15. Lyubomirsky S, Layous K. How do simple positive activities increase wellbeing? Current Directions in Psychological Science 2013;22(1):57-62.

16. Hayes SC. Acceptance and commitment therapy, relational frame theory, and the third wave of behavioral and cognitive therapies–Republished Article. Behav Therapy 2016;47(6):869-85.

17. Yasaee seke M, Shafi'abadi A, Waliollah F. Comparison of the effectiveness of acceptance and commitment-based therapy (ACT) with mindfulness based cognitive therapy (MBCT) on anxiety and depression in hemodialysis patients. Journal of Mental Health 2017;19(3):220-30.

18. Faezipour M, Ghanbaripanah A, SeyedAlinaghi SA, Hajiabdolbaghi M, Voltarelli F. Effectiveness of acceptance and commitment therapy on reducing depression among people living with HIV/AIDS. J International Translational Medicine 2018;6(3):125-9.

19. Mohammadinejad M, Nikonejad F. The effectiveness of treatment based on acceptance and commitment (ACT) on psychological well-being and resilience of mothers with deaf girls in Isfahan. Knowledge and Research in Applied Psychology 2020;21(2):22-31.

20. Ryff CD. Happiness is everything, or is it? Explorations on the meaning of psychological well-being. J Personality and Social Psychology 1989;57:1069-81.

21. Ekhbaraty F, Bashardost S. Predicting psychological well-being based on su performance and basic psychological needs of students. J Principles of Mental Health 2016;18:374-9.

22. Zarei F, Khakbaz H, Karami H. The effectiveness of self-awareness skills training on reducing high-risk behaviors related to the opposite sex in addicts. J Addiction Research on Substance Abuse 2010;4(15): 3-69.

23. Forgeard MJC, Seligman MEP. Seeing the glass half full: A review of the causes and consequences of optimism. Pratiques Psychologiques 2012;18(2):107-20.

24. Satici SA. Psychological vulnerability, resilience, and subjective well-being: The mediating role of hope. Personality and Individual Differences 2016;102:68-73.

25. Yıldırım M, Arslan G. Exploring the associations between resilience, dispositional hope, preventive behaviors, subjective well-being, and psychological health among adults during early stage of COVID-19. Curr Psychol 2020 Nov 14;1-11.

26. Dambrun M, Dubuy AL. A positive psychology intervention among long-term unemployed people and its effects on psychological distress and well-being. J Employment Counseling 2014;51:75-85.

27. Seligman MEP, Steen TA, Park N, Peterson C. Positive psychology progress, empirical validation of interventions. Am Psychol Jul-Aug 2005;60(5):410-21.

28. Twohig MP. Acceptance and commitment therapy: Instruction. Cognitive and Behavioral Practice 2012;19(4):499-507.