The Effectiveness of Self-Compassion Group Training on Raising Hope in Diabetics

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Abstract

Introduction: Type 2 diabetes is a common chronic disease that can have irreparable complications for patients if not controlled. The present study aimed to investigate the effectiveness of self-compassion group training on the hope of patients with type 2 diabetes referred to Taleghani Diabetes Clinic of Kermanshah.

Method: The present experimental study had a pre-test post-test design with a control group. The statistical population included patients with type 2 diabetes who had referred to the Diabetes Clinic of Kermanshah in 2017.Among them, 32 were selected by convenience sampling method and were determined according to the inclusion criteria; and 20 patients were randomly assigned to two experimental and control groups (each group with 10 samples). The self-compassion training was provided for the experimental group during 8 sessions (90 minutes per session), but the control group did not receive any training. Data was collected by Miller Hope Scale (MHS); and the univariate analysis of covariance with SPSS 21were utilized for data analysis.

Results: The mean values of pre-test of hope variable were statistically equal in both groups; and equal to 199.60 and 197.30 in post-test and follow-up periods respectively for the experimental group. They were significantly higher than the control group (P<0.05).

Conclusion: Self-compassion group training is a determinant of hope in diabetics. Therefore, therapists and psychologists are suggested to use this method to increase hope in diabetics.

Keywords: Self-compassion Training, Hope, Type 2 Diabetes

Introduction

Diabetes is a complex metabolic disorder that is characterized by hyperglycemia (levels of blood sugar that is above normal levels). Hyperglycemia is resulted from impaired insulin secretion or function or both of them. Diabetes is a debilitating and chronic problem [1]. Type 2 diabetes is a common non-transmissible disease in the world and is considered to be one of 10 most important causes of death in many countries [2]. Diabetes mellitus has a negative effect on patients' overall function and general health and also their psychological well-being [3]. Hope is a basic concept in positive psychology. It is a process that allows people to design and follow goals [4]. Hope is also the perceived ability to create desirable paths to achieve goals and being motivated to use these paths [5]. It leads to positive attitude towards life, positive self-concept, mental health, emotional balance, favorable and satisfactory attitude towards oneself and others, balanced social communication, conscious choice of life goals, efforts to achieve goals, avoidance of time wasting and laziness, increasing life success, having high living standards, better function of the immune system against stress, better sleep, higher willingness to help others, better occupational-educational performance, and better decision-making [6]. In other words, hope predicts the physical and mental health by a variety of indices, including self-reported health, positive

response to medical interventions, mental health, positive mood, safe cognitive robustness, life satisfaction, effective coping, and health promoting behavior [7]. Hope is a main source of adaptation for chronic patients for their survival, and it affects their attitude, health and facilities in the future [8]. Hope helps patients to physiologically and emotionally tolerate diseases [9]. Accordingly, hopeful people, even if at advanced stages of diseases, still use other purposes, such as spending time with family and enjoy the remaining opportunities [10].

People with chronic diseases have different physiological, psychological and emotional needs which are a part of treatment. The most beneficial choice, both in terms of disease improvement and satisfaction of their needs, includes interventions that consider psychological treatments in addition to physical ones [11]. The self-compassion training is a psychological treatment including caring for oneself in dealing with hardship or perceived inadequacies [12].Self-compassion consists of three main components: self-kindness against self-judgment (self-perception rather than judgment or criticism; and a kind of kindness and support against shortcomings and incompetence), common human sense against isolation (confessing that all humans are incomplete and make mistake), and mindfulness against the projective identification (balanced and clear awareness about experience of the present under which painful aspects of an experience are neither overlooked, nor repeatedly occupy the mind). Positive aspects of self-compassion are associated with optimism, happiness, individual creativity, freedom of experience, and well-being; and its negative components are related to anxiety, depression, neuroticism, and negative self-assessment [13]. Self-compassion means the acceptance of vulnerable emotion, care and kindness with oneself, understanding, a non-criticizing attitude towards failures, and the recognition of common individual experiences [14]. Compassion-based therapy, as a multidimensional model, uses a variety of educational skills relating to attention, reasoning, imagery practice, and behavioral interventions [15]. People perform self-care and kindness activities to improve their health, prevent diseases, limit their illness and preserve their health [16]. Learning self-activities can lead people to preserve their health and well-being and increase their ability to adapt to diseases [17]. Results of studies indicate that self-compassion is associated with mental health in patients with mood disorders [18].

Several studies have investigated the role of self-compassion in mental health. For instance, self-compassion training plays a role in reducing stress-related behavioral and safety responses [19], increasing health promoting behavior, and increasing hope [20]. Diedrich et al. indicated that people, who participated in self-compassion training sessions, had a more reduced depressed mood than people in the waiting list [21].

Collins et al. found that the self-compassion-based treatment could reduce the anxiety and depression in patients with dementia and improve quality of life and hope in them [22]. In a study on patients with severe self-criticism, Shahar et al. found that the compassion-based treatment can reduce depression in patients and increase their positive emotions, optimism and hope. In addition, it was indicated that the results continued after a quarterly follow-up period [23]. Taher-Karami et al. found that the self-compassion-based therapy increased scores of hope, psychological well-being, and resilience and decreased the self-discrepancy in menopausal women [24].

A research with the aim to investigate the effectiveness of compassion-focused therapy for the treatment of diabetic patients with depression in Sanandaj indicated that the self-compassion training decreased depression and, consequently, increased hope in diabetic patients [25]. Furthermore, Golpour et al. concluded that self-compassion training was an important effective factor in the quality of life, adaptive and social performance, and depression [26]

Results of a research by Farokhzadian and Mirderekvand indicated that the self-compassion training treatment might had a significant impact on increasing psychological well-being in the elderly [27].

The basis of compassion-based therapy points out that thoughts, images, and external relieving behavior are introverted, and thus the mind reacts to external factors while being relaxed in facing the interior feeling [15]. Therefore, the self-compassion training contributes to increasing hope in diabetic patients by decreasing self-judgment and improving mindfulness. On the other hand, the compassion trait is greater in diabetic patients. Hence, the efficacy of self-compassion therapy is different from other psychotherapy approaches in these patients. Given the basics and history of research on the efficiency of this treatment, the present study decided to perform and conduct a research among diabetic patients in Kermanshah city. Therefore, the main question of the present study was whether the self-compassion treatment is effective on hope in diabetic patients in Kermanshah city or not.

Method

The present study was a pretest-posttest with a control and follow-up group (a month after post-test). The statistical population consisted of the diabetics who had referred to the Diabetes Center of Kermanshah in 2017. Among them, 32 diabetics were selected by the convenience sampling based on the inclusion and exclusion criteria (inclusion criteria: age range of 33 to 52 years, at least a year of type 2 diabetes, at least a 96 score in Miller Hope Scale, greater scores of criticism, isolation and projective identification than self-kindness, common humanity, and mindfulness in Neff self-compassion scale, at least elementary education, volunteered to participate in this study, and not receiving individual counseling from outside the therapy sessions. Exclusion criterion: to have diagnosed criteria for known psychiatric disorders based on clinical interviews and concurrent physical diseases that changed research results). Among them, 20 patients were randomly put into two groups, experimental (n= 10) and control (n= 10) groups. The pre-test was performed for both groups. Training courses for self-compassion training consisted of eight 90-minute sessions that were

held two sessions per week for the experimental group; and the control group remained without any intervention during the study (Table 1). At the end of the training period, both groups received hope questionnaires again. In the follow up phase, the Miller Hope questionnaire was again distributed among the members of both groups a month after the training course; and results were compared with the post-test period. The research utilized the Miller Hope Scale (MHS), which was designed by Miller and Powers in 1988.The test consisted of 48 aspects of hopelessness and hopefulness; and its items were selected based on obvious or latent behavioral manifestations in hopeful or disappointed people. The questionnaire was based on the Likert scale. The participants were scored by selecting sentences that were true for them. The total score indicated hope or disappointment. In the Miller Hope Scale, the scores range from 48 to 240, and if participants earn a score of 48, they are considered to be completely helpless. Score 240 indicates the most hopeful. Twelve items of Miller Hope Scale consist of negative issues that earn opposite scores in evaluation and scoring [28]. Hosseini used the criterion question score to determine the validity of the questionnaire. The total score of the questionnaire was correlated with the score of the criterion question and a significant positive relationship was found between them. Cronbach's alpha and split half method with coefficients of 0.9 and 0.89 respectively were utilized to determine the reliability of the questionnaire [28]. In the present research, the reliability of the questionnaire was 0.76 using the Cronbach's alpha test and it was considered to be desirable. The questionnaire has not been validated, since it has been interpreted from a tool in English. Finally, the information of the questionnaires were analyzed using the SPSS 21 and a one-way analysis of covariance.

Table 1. Educational protocol derived from Gilbert

Stages	Content of session
1	Assessment of Hope: A description and explanation of hope and factors associated with its symptoms, conceptualization of cognitive self-compassion training, and expression of training purposes.
2	Self-care Education: Training with the aim to make an understanding in people to act by self-compassion.
3	Self-compassion Training: Training to create more emotions about issues for increasing care and attention to health.
4	Forgiveness Training: Teaching about accepting mistakes and self-forgiveness for mistakes to speed up changes.
5	Problem Acceptance Training: Teaching to accept future changes, and then the ability to withstand difficult and challenging conditions with respect to variable life issues, facing people with different challenges.
6	Teaching the Growth of Excellent and Valuable Feelings: Training people to create valuable feelings in themselves to effectively deal with the environment.
7	Responsibility Training: It is a basic component of self-compassion training, so that learners learn to have self-critical thinking to create new and more effective feelings and perspectives in themselves.
8	Skills Training and Practice: Review and practice of presented skills in past sessions in order to help participants to be able to use different methods under different life conditions.

Results

The research sample consisted of 20 participants (10 per group) and the mean and standard deviation of participants' age were 43.47 and 6.726 with a minimum of 33 years and a maximum of 52 years in the experimental group, and they were 44.38 and 521.5 years with a minimum of 31 years and a maximum of 50 years in the control group. Furthermore, 40% of participants in the experimental group, and 50% in the control had academic degrees and the rest had diploma and lower. Moreover, nine participants in the experimental group and eight in the control group were married.

The mean hope of experimental group increased in post-test and follow-up. The normality of data was confirmed since the significant level of Shapiro-Wilk test was greater than 0.05 for each test (Table 2).

Given that the F-values for posttest and follow up were equal to 0.141 and 2.403 respectively, and were also insignificant at the level of 0.05, the homogeneity of the variance of hope was accepted in the control and experimental groups.

Table 2. Descriptive indices and results of normality of hope score

Test time	Group	No.	Mean	SD	Shapiro- Wilk	Significance
Pre-test	Control	10	171.20	13.12	0.95	0.75
	Experimental	10	172.80	110.29	0.95	0.67
Post-test	Control	10	170.00	17.93	0.88	0.13
	Experimental	10	199.60	13.37	0.85	0.06
Follow-up	Control	10	167.60	12.14	0.94	0.58
	Experimental	10	197.30	12.95	0.88	0.14

Table 3. The multivariate significance tests of trace of independent variable of group in post-test and follow-up scores of hope variable

Effect	Index	Value	F	Degree of Freedom	Error of Degree of Freedom	Significance
Group	Pillai's Trace	0.82	8.81	2	16	0.001
	Wilks' Lambda	0.17	38.81	2	16	0.001
	Hotelling's Trace	4.85	38.81	2	16	0.001
	Roy's Largest Root	4.85	38.81	2	16	0.001

Table 3 presents the results of four multivariate tests, namely Pillai's Trace, Wilks' Lambda, Hotelling's Trace and Roy's Largest Root for post-test scores of hope variable at the significance level of P<0.01. It is found that the independent variable of group had a significant effect in at least a post-test or follow-up score.

According to the Table 4, F-values for post-test and follow-up of hope were 25.663 and 62.933 respectively in the source of group changes at the level of P<0.05. Hence, the null hypothesis was rejected and the research hypothesis based on the significant difference of mean post-test of hope in the control and experimental groups was confirmed. According to Table 2, mean values of post-test and follow-up hope in the experimental group were greater than the control group. As a result, the self-compassion training increased hope in diabetics.

Table 4. Analysis of covariance of the comparison of post-test and follow-up mean in control and experimental groups

Source of Change	Dependent Variable	Sum of Squares	Degree of Freedom	Mean Squares	F	Significance	ETA Coefficient	Test Power
Pre-test	Post-test	1881.49	1	1881.49	12.19	0.001	0.41	0.90
	Follow-up	1755.71	1	1755.71	27.61	0.001	0.61	0.99
Group	Post-test	3959.57	1	3959.57	25.66	0.001	0.60	0.99
	Follow-up	4000.66	1	4000.66	62.93	0.001	0.78	1.00
Error	Post-test	2622.90	17	154.28				
	Follow-up	1080.79	17	63.57				
Total	Post-test	691906.00	20					
	Follow-up	673007.00	20					

Discussion

Diabetes is a common chronic disease that can reduce the hope in patients. Therefore, self-compassion training can be used to increase hope in these patients. These results clearly indicate that psychological interventions can still be considered as an important part of the process of treating chronic physical diseases. This is due to the fact that an important part of therapeutic process of disease in chronic diseases, which are dependent on continuous "care" and do not necessarily benefit from a quick "cure", is the proper management of emotions, proper behavioral follow-up of treatment guidelines, addressing health behavior, and avoiding health-threatening (or high-risk) behavior.

Results of the present study indicated that the self-compassion training significantly increased hope in patients with type 2 diabetes. These results were consistent with the findings of previous studies [18,21-28,30-37]

Disappointment and hopeless (generally the negative emotional experience) play important roles in not adhering to treatment in chronic diseases and remains a challenge in the medical and social profession. Meanwhile, half of the interventions have failed to make patients adhered to diet and treatment [38].Therefore, it is essential to conduct interventions to increase and strengthen hope. Social-psychological support including self-compassion training is an important intervention in diabetic patients [39, 40].Chronic diseases, such as diabetes, have complex origins, a slow onset, and unpredictable deterioration and recovery, and thus need self-compassion and personal care due to their long process [41].

The main goal of self-compassion therapy is to concentrate on positive emotions, in order for people to experience greater calm and well-being [42]. On this basis, compassion as a positive emotion can lead to new thoughts, emotions and positive behavior that are contrary to negative emotions and self-judgment. The compassionated behavior, which is a compassion-focused treatment, means doing whatever is needed for its development. On the other hand, it is possible to cite the nature and content of compassion-based treatment. These exercises emphasize relaxation, quiet mindedness and mindfulness, and can play significant roles in the individual's calmness and hope.

In the field of effectiveness of these interventions, it should be noted that the cognitive self-compassion training is a positive self-attitude that promotes mental health in people [43]; and the low self-compassion leads to psychological damages such as anxiety and depression [44]. People, who are self-compassionate, experience greater mental health than those with less self-compassion because the experience of failure and frustration is reinforced through self-blaming [45], feeling of isolation, and the magnification of thoughts and feelings [47]. Furthermore, a sense of self-compassion means that the person is trying to avoid experiencing pain and frustration. This leads to the emergence of active coping styles for the promotion and maintenance of mental health. Self-compassionate people experience less pain and defect than others, and have supportive views about themselves that lessen feelings of depression and anxiety and increases their hope.

Neff [48] believes that the mindfulness component is used in the self-compassion therapy and helps to prevent the creation of self-evaluation thoughts. Since most negative emotions, which are experienced by individuals, are due to the mentioned thoughts and are created by negative experiences in mind such as chronic illnesses like diabetes, the self-compassion focused treatment leads to relaxation and increased hope by reducing negative self-evaluating and criticism thoughts.

The self-compassion training increases and improves hope in patients by reducing their physical and psychological problems. The existence of hope is important in chronic illnesses, and is in fact a struggle to overcome limitations of life and an attempt to live [49]. Self-compassion trainings helps people not focus on deficiencies and failures in spite of illness and

hopelessness, but help them search hope and purpose in life, and thus make their life meaningful. Meaningfulness, purposefulness and hope are components that consolidate mental health [50]. If life is meaningful, every event even hard situations such as chronic diseases makes sense. Therefore, the psychologists' appropriate performance in providing self-compassion training can create a sense of purposefulness in the individual life, reduce their stress and depression, and ultimately create an interpersonal relationship with others and hope in life.

The present study had some limitations, including the lack of follow-up evaluation that limited the conclusion about sustainability of treatment outcomes. There was also limited access to a wider sample. Hence, the effectiveness of the therapeutic method could not be compared with other interventions. Therefore, other researchers are suggested considering these issues in their future research.

Conclusion

The results of the present study indicated that self-compassion training significantly increased hope in patients with type 2 diabetes.

Acknowledgment

References

1. Barnard KD, Lloyd CE, Holt RI. Psychological burden of diabetes and what it means to people with diabetes. Psychology and Diabetes Care: Springer; 2012. p. 1-22.
2. World Health Organization. The Top 10 Causes of Death. (Accessed Dec 1 2012). http://www.who.int/mediacentre/factsheets/fs310/en/index.html.
3. Skandarian R, Rashidipour A, Ghorbani R, Malek M. Epidemiology of diabetes and impaired fasting glucose in adults of Semnan province. Iranian Journal of Diabetes & Lipid, Summer. 2009;8(4):375-82.(In Persian).
4. Feldman DB, Kubota M. Hope, self-efficacy, optimism, and academic achievement: Distinguishing constructs and levels of specificity in predicting college grade-point average. Learning and Individual Differences. 2015;37:210-6.
5. Du H, Bernardo AB, Yeung SS. Locus-of-hope and life satisfaction: The mediating roles of personal self-esteem and relational self-esteem. Personality and Individual Differences. 2015;83:228-33.
6. Luhmann M, Necka EA, Schönbrodt FD, Hawkley LC. Is valuing happiness associated with lower well-being? A factor-level analysis using the Valuing Happiness Scale. Journal of research in personality. 2016;60:46-50.
7. Mathew J, Dunning C, Coats C, Whelan T. The mediating influence of hope on multidimensional perfectionism and depression. Personality and Individual Differences. 2014;70:66-71.
8. Ghezelseflo M, Esbati M. Effectiveness of Hope-Oriented Group Therapy on Improving Quality of Life in HIV+ Male Patients. Procedia - Social and Behavioral Sciences. 2013;84:534-7.(In Persian).
9. Benzein EG, Berg AC. The level of and relation between hope, hopelessness and fatigue in patients and family members in palliative care. Palliative medicine. 2005;19(3):234-40.
10. Kim Y, Evangelista LS. Relationship between illness perceptions, treatment adherence, and clinical outcomes in patients on maintenance hemodialysis. Nephrology nursing journal: journal of the American Nephrology Nurses' Association. 2010;37(3):281-271.
11. Kar A. Positive psychology: science of happiness and human's capabilities. Translated by: Pasha Sharifi Tehran: Sokhan. 2008.
12. Neff KD, Kirkpatrick KL, Rude SS. Self-compassion and adaptive psychological functioning. Journal of research in personality.

2007;41(1):139-54.
13. Tang Y-Y, Tang R, Posner MI. Mindfulness meditation improves emotion regulation and reduces drug abuse. Drug and Alcohol Dependence. 2016;163:S13-S8.
14. Raes F. Rumination and worry as mediators of the relationship between self-compassion and depression and anxiety. Personality and Individual Differences. 2010;48(6):757-61.
15. Irons C, Lad S. Using compassion focused therapy to work with shame and self-criticism in complex trauma. Australian Clinical Psychologist. 2017;3(1):54-47.
16. Riegel B, Jaarsma T, Strömberg A. A middle-range theory of self-care of chronic illness. Advances in Nursing Science. 2012;35(3):194-204.
17. Habibzade H, Davarpanah M, Khalkhali H. The study of the effect of orem self care model on self efficacy in hemodialysis patients in urmia medical science hospitals during 2011. Journal of Nursing and Midwifery Urmia University of Medical Sciences. 2012;10(2):199-190.(In Persian).
18. Neff KD, Vonk R. Self- compassion versus global self- esteem: Two different ways of relating to oneself. Journal of personality. 2009;77(1):23-50.
19. Pace TW, Negi LT, Adame DD, Cole SP, Sivilli TI, Brown TD, et al. Effect of compassion meditation on neuroendocrine, innate immune and behavioral responses to psychosocial stress. Psychoneuroendocrinology. 2009;34(1):98-87.
20. Sirois FM, Kitner R, Hirsch JK. Self-compassion, affect, and health-promoting behaviors. Health Psychology. 2015;34(6):661.
21. Diedrich A, Grant M, Hofmann SG, Hiller W, Berking M. Self-compassion as an emotion regulation strategy in major depressive disorder. Behaviour research and therapy. 2014;58:43-51.
22. Collins RN, Gilligan LJ, Poz R. The evaluation of a compassion-focused therapy group for couples experiencing a dementia diagnosis. Clinical gerontologist. 2018;41(5):474-86.
23. Shahar B, Szepsenwol O, Zilcha- Mano S, Haim N, Zamir O, Levi- Yeshuvi S, et al. A wait- list randomized controlled trial of loving- kindness meditation programme for self- criticism. Clinical psychology & psychotherapy. 2015;22(4):346-56.
24. Taher-Karami Z, Hossieni O, Dasht-Bozorgi Z. The Effectiveness of Compassion-Focused Therapy on Resiliency, Self-discrepancy, Hope and Psychological Well-being of Menopausal Women in Ahvaz. Community Health (Salāmat-i ijtimāī). 2018;5(2):189-97.(In Persian).
25. F Z. Effectiveness of compassion-focused therapy in the treatment of depression and blood glucose control in patients with type 2 diabetes 2014. 2014.(In Persian)
26. Golpour R, Abolghasemi A, Ahadi B, Narimani M. The effectiveness of cognitive self-compassion training and emotion-focused therapy on quality of life with depression disorder. Journal of clinical psychology. 2014;6:53-64.(In Persian).
27. Farokhzadian Aa, Mirderekvand F. The Effectiveness of Self-Compassion Focused Therapy on Increase of Psychological Well-Being and Reduction of Depression in the Elderly. Journal of Aging Psychology. 2018;3(4):293-302.(In Persian).
28. Hosseini S. Relationship of hope and psychological hardiness in male and female students: MSc. thesis]. Gachsaran: Islamic Azad University; 2006.(In Persian).
29. Gilbert P. Introducing compassion-focused therapy. Advances in psychiatric treatment. 2009;15(3):208-199.
30. Rajaee AR. Comparison of Effectiveness of Dynamic-Supportive Psychotherapy and Pharmacotherapy on Type 2 Diabetes Patients' Depression. QHMS. 2018;24(2):139-45.(In Persian).
31. Shirkavand N, Gholami HS, Arab SZ, Ashoori J. The impact of life skills training on happiness and hopefulness among patients with type ii diabetes. Journal of Diabetes Nursing. 2015;3:19-8.(In Persian).
32. Kamaleddin R. Effectiveness of Group Therapy on Depression and Quality of Life in Patients with Type II Diabetes: University of Esfahan; 2011.(In Persian).
33. Rasoolifar R. The Effectiveness of Group Counseling with Omid Therapy Approach on Quality of Life in Diabetic Patients in Abadeh: Azad University of Marvdasht; 2013.(In Persian).
34. Samadi fard H. The role of source of disease control and self-sufficiency in predicting hope for diabetic patients. The 5th International Conference on Psychology and Social Sciences 2016.(In Persian).
35. Mehmet A, Rozien M. You've got to have hope: Studies show" hope therapy" fights depression. Atlanta: News RX. 2009:73-68.
36. Groopman J. The Anatomy of Hope. The Permanente Journal. 2004;8(2):43-7.
37. Snyder C, Rand K. Hopelessness and health. In: Anderson N, editor. Encyclopedia of health and behavior. Thousand Oaks, CA: Sage; 2005.

pp. 523–521.

38. van Dulmen S, Sluijs E, van Dijk L, de Ridder D, Heerdink R, Bensing J. Patient adherence to medical treatment: a review of reviews. BMC health services research. 2007;7(1):55-68.

39. Anandarajah G, Hight E. Spirituality and medical practice. American family physician. 2001;63(1):81-8.

40. Moarefzadeh S, Sodani M, Shafi AA. The study of the effect of teaching of contrastive training skills originated of quran on reducing anxiety among high school girl student in ahwaz. Journal of Educational Psychology. 2010;1:19-32.(In Persian).

41. Noohi E, Khandan M, Mirzazadeh A. Effective of electronic education on knowledge attitude and self-care in patient's diabetic type 2 refer to diabetic center of kerman university of medical science. Iranian Journal Of Nursing Research. 2011;6:80-73.(In Persian).

42. Kok BE, Fredrickson BL. Upward spirals of the heart: Autonomic flexibility, as indexed by vagal tone, reciprocally and prospectively predicts positive emotions and social connectedness. Biological psychology. 2010;85(3):432-6.

43. Wang X, Chen Z, Poon K-T, Teng F, Jin S. Self-compassion decreases acceptance of own immoral behaviors. Personality and Individual Differences. 2017;106:329-33.

44. Krieger T, Martig DS, van den Brink E, Berger T. Working on self-compassion online: A proof of concept and feasibility study. Internet Interventions. 2016;6:70-64.

45. Kyeong LW. Self-compassion as a moderator of the relationship between academic burn-out and psychological health in Korean cyber university students. Personality and Individual Differences. 2013;54(8):902-899.

46. Van Dam NT, Sheppard SC, Forsyth JP, Earleywine M. Self-compassion is a better predictor than mindfulness of symptom severity and quality of life in mixed anxiety and depression. Journal of anxiety disorders. 2011;25(1):123-30.

47. Raes F, Pommier E, Neff KD, Van Gucht D. Construction and factorial validation of a short form of the self-compassion scale. Clinical psychology & psychotherapy. 2011;18(3):250-5.

48. Neff KD. The role of self-compassion in development: A healthier way to relate to oneself. Human development. 2009;52(4):214-211.

49. Soundy A, Benson J, Dawes H, Smith B, Collett J, Meaney A. Understanding hope in patients with Multiple Sclerosis. Physiotherapy. 2012;98(4):349-55.

50. Hawks SR, Hull ML, Thalman RL, Richins PM. Review of spiritual health: definition, role, and intervention strategies in health promotion. American Journal of Health Promotion. 1995;9(5):371-8.