The Effectiveness of Logotherapy Training on Psychological Well-Being and Life Expectancy in Patients with Diabetes Type 2

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Abstract

Objective: In daily life, logotherapy is one of the skills that can be taught to increase the levels of psychological well-being and hope. The purpose of this study was to evaluate the effectiveness of meaningful psychological skills in promoting psychological well-being and life expectancy in patients with type 2 diabetes in the city of Salas city of Kermanshah province.

Materials and Methods: The present study is an experiment with a pre-test-post-test design with a control group. The statistical population of the study was all patients with type 2 diabetes in Salas city of Kermanshah province. Thirty people were randomly divided into two groups of 15 experimental and controlled by sampling. After that, the experimental group was trained in logotherapy skills and meaning for 2 months in a total of 8 sessions of 90 minutes. After completing the training and after one month, the post-test was performed simultaneously and under the same conditions for both experimental and control groups. Data were analyzed by multivariate analysis of covariance (MANCOVA) with SPSS 18 software.

Results: Results of analysis of covariance on post-test means, there is a significant difference between logotherapy and control groups in psychological well-being and life expectancy variables (*P*-value< 0.001). The value of squares indicates that about 77% of the variance of the well-being score and about 81% of the variance of the life expectancy score is explained by the difference between the two methods.

Conclusion: Logotherapy training is effective on psychological well-being and life expectancy of diabetic patients.

Keywords: Logotherapy, Psychological well-being, Life expectancy, Diabetes type 2

Introduction

Diabetes is among the most pervasive chronic diseases which has increasingly been a major concern for health professionals. According to the International Diabetes Federation, in 2017, % 8.8 of the adult population (about 425 million) were diagnosed with diabetes, and by 2045, will exceed 629 million. Meanwhile, 212 million people are still undiagnosed (1).

Psychological well-being is one of the most important psychological components involved in the perception of illness and pain. Reef (2)

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for the first time realized criteria such as positive attitude towards self, self-acceptance, environmental dominance, ability to establish warm and trusting relationships with others, positive relationships with others, purposefulness of feeling and directing goals in life, continuous growth of individual potential, individual growth, and independence affect one's psychological state. According to this view, the health index is not defined as lack of disease, and people with high psychological well-being perceive a more pleasant experience and suffer less from negative emotions (3). In his research, Kong concluded that feeling meaningful in life can significantly enhance self-esteem and reduce problems (4).

Moreover, life expectancy is another variable that has attracted a lot of attention in recent years and is defined as one's health index, quality of life, and mental well-being (5). Studies have shown that hope can both facilitate change and boost physical and mental health. Contrarily, lack of hope can adversely affect a person's mental health and lead to diseases (6). Hope is one of the characteristics of life that makes a person be hopeful for the future and seek for better tomorrow and success. When there is hope, the person will experience a happy life (7). As a healing, multidimensional, dynamic, and powerful factor, life expectancy is effective in coping with problems and even with incurable diseases. In other words, life expectancy is one of the basic concepts of positive psychology which acts as a key enriching factor in people's lives (8). Hopeful people own more ways to pursue their goals, and while facing a barrier, they still remain motivated, and use alternative solutions, whereas disappointed people with fewer options to choose to lose their motivation in same situations (9).

Among therapies that leave the greatest positive effects on mental functions is logotherapy. Frankl believes that when someone confronts a disappointing situation, he/ she still has another opportunity to realize the meaning, that is, he/ she can understand the highest value to conceive the deepest and most profound meaning (10). He assumes that suffering makes sense if and only if the situation is irreversible. There are times in life that are unchanged. Here, the message of logotherapy is that "the heavy burden of meaning-making is on one's shoulder." In fact, if a person actively seeks his responsibilities, there will remain no place for disappointment (11,12). In this regard, several studies examining the effectiveness of logotherapy on mental functions have found that logotherapy can leave beneficial effects on promoting life expectancy (13), psychological well- being and quality of life (14) in patients suffering physical and mental problems. In fact, logotherapy is an effective treatment method that can be performed in a group work (15). The aim of this study was to show the usefulness of logotherapy interventions on psychological well-being and life expectancy of diabetic patients; the result can be the basis for designing courses and sessions of logotherapy and meaning training to increase the level of psychological well-being and life expectancy of diabetic patients.

Materials and Methods

This is an experimental study with a pre-test/ post-test design and a control. The statistical population of this study consists of patients with diabetes type 2 under the auspices of the health network of the city of Salas city of Kermanshah province who were referred to this center periodically during the research. Based on the random sampling method, 30 samples were selected and divided into two groups of 15 experimental and control. Participation criteria were getting informed consent to participate in the study, having diabetes type 2, and filling out the questionnaires successfully. Exclusion criteria were absenteeism in logotherapy training sessions, failure to answer the questionnaires, and disagreement with the research conditions. Based on the sampling method, the psychological well-being and life expectancy questionnaire was first distributed among the

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sample people in the pre-test, and they were asked to answer the questions honestly. After correcting and scoring, the samples with low psychological well-being and life expectancy scores were identified and placed in the experimental and control groups. After that, the experimental group received semantic therapy training skills in 90-minute sessions for 2 months with a total of 8 sessions. One month after this training, a post-test was performed for both groups. Another point is that the control received no training until the end of the period and had no psychological interventions.

The psychological well-being questionnaire used in this study was developed by Carol Ryff (16) to determine the level of psychological well-being of the grown-ups. It contains six scales designed to measure the dimensions of self-adherence, environmental dominance, personal growth, positive relationships with others, purposeful life, and self-acceptance. These scales are formulated in three forms: 84 items (14 item scales), 54 items (9 item scales), and 18 items (3 item scales). In the Ryff's Psychological Welfare questionnaire, there are six grades ranging from 1 (strongly disagree) to 6 (strongly agree). The Ryff's Psychological Welfare Questionnaire includes 6 components and a total score. In this questionnaire, the questions (in the file) are scored in reverse, and the rest of the questions are scored directly. Here, the higher the score, the higher the psychological well-being. The internal stability coefficients ranging from 0.65 to 0.70 were reported for different dimensions of the Reef scale. The reef also used Cronbach's alpha in a study to evaluate the reliability of the tool. Alpha rates obtained for self-acceptance (0.93), positive communication with others (0.91), autonomy (0.86), mastery of the environment (0.90), purposefulness in life (0.90), and personal growth (0.87) were also reported, so it can be regarded a suitable tool for research and clinical purposes (16). In Iran, in a study conducted with student samples, internal consistency was measured using Cronbach's alpha. The results for the subscales of environmental mastery were 0.69, personal growth 0.74, positive communication with others 0.65, purposefulness in life 0.73, self-acceptance 0.65, autonomy 0.6, and overall score 0.94. (17). This scale was initially performed on a sample of 321 people (130 men and 191 women). The mean age of the subjects was 19.5 years and 47% had a university education (17).

The life expectancy questionnaire was also used in this study. This scale was developed by Schneider (18) to determine the level of hope in adults. This test consists of 12 items and two scales, eight of which are used here. Of these 8 items, four are related to the factor scale. (2,9,10,12) and the other 4 (1,4,6,8) belong to the bus scale. The remaining 4 questions are deviant and are not scored at all. Moreover, its scoring method is a five-point Likert ranging from 1 (strongly disagree) to 5 (strongly agree). The scores range from 12 to 60. The sum of the scores of all the questions shows the level of personal hope. Schneider reported the Cronbach's alpha coefficient of the total scores (0.86), for the factor subscale (0.82), and for the bus component (0.84) (19). The original scale and the translated Farsi version were reviewed by the original author (PhD in reproductive health) and an external expert in social sciences (who was bilingual and fluent in English) to compare the scales and resolve any discrepancies. Subsequently, psychometric tests, including face validity, exploratory factor analysis (EFA), confirmatory factor analysis (20). Noteworthy that in this study, the total score of the hope questionnaire was used. In the pre-test and post-test stages, the psychological well-being and life expectancy questionnaires were filled out as the main tools of the research for all subjects. Data were analyzed using statistical software (SPSS-18). Moreover, data were analyzed in terms of descriptive indices (mean and standard deviation) and inferential indices (Multivariate analysis of covariance) at the significance level of> 0.05. The following is an explanation of the training sessions.

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Table 1. Description of teaching method in logotherapy sessions

Sessions	Session description
Session 1	Defining goals and rules for the group, introducing group members, defining and explaining logotherapy and the necessity of the presence of meaning in life
Session 2	Reviewing previous session's assignment and giving feedbacks, informing about beliefs in accepting one's self and knowing personal traits along with attention to spiritual freedom as a key aspect of human existence
Session 3	Reviewing previous session's assignment and giving feedbacks, informing about a sense of responsibility and its role in achieving success
Session 4	Reviewing previous session's assignment and giving feedbacks, introducing anxiety-inducing factors and ways to cope with them, knowing existential anxiety
Session 5	Reviewing previous session's assignment and giving feedbacks, introducing the necessity of preserving identity and communication with peers and seeking the meaning of love
Session 6	Reviewing previous session's assignment and giving feedbacks and analysing the meaning of suffering
Session 7	Reviewing previous session's assignment and giving feedbacks and discussing creative values
Session 8	Reviewing previous session's assignment and giving feedbacks and discussing experimental values

Ethical considerations

The study was approved by the ethics committee of Payame Noor University, Tehran, Iran. (IR.PNU.REC.1399.090).

Results

As can be seen in Table 2, in the pre-test stage, the mean and standard deviation of the psychological well-being variable of each group were 9.97 and 1.81, the experimental group, 9.88 and 1.6, respectively, and the mean and standard deviation of the variable. Life expectancy is 10.37 and 2.15 in the experimental group and 9.67 and 1.71 in the control group, respectively**.**

Also, in the post-test stage, the mean and standard deviation of the psychological well-being variable of each group were 14.94 and 1.24, and the control group was 10.7 and 1.49, respectively, and the mean and standard deviation of the life expectancy variable were the experimental groups, respectively. 15.87 and 1.69 and the control group is 9.84 and 1.6.

According to Table 2, the mean scores of psychological well-being and life expectancy in the experimental group in the post-test increased more significantly than the pre-test, whereas in the control group, these scores did not vary greatly in the pre-test and post-test. The significance of this difference was evaluated by multivariate analysis of covariance**.**

According to the findings of Table 3, the results of analysis of covariance on post-test means, eliminating the effect of pre-test, showed that there is a significant difference between the groups of logotherapy, meaning finding, and control in psychological well-being and life expectancy variables (*P*-value< 0.001). The value of squares indicates that about 77% of the variance of the welfare score and nearly 81% of the variance of the life expectancy score is explained by the difference between the two methods.

Table 2. Mean and standard deviation of research variables in two groups

Variable	Phase	Group	Mean	Standard deviation
Psychological well being	Pre-test	Experiment	9.97	1.81
		Control	9.88	1.6
	Post-test	Experiment	14.94	1.24
		Control	10.07	1.49
Life expectancy	Pre-test	Experiment	10.37	2.15
		Control	9.67	1.71
	Post-test	Experiment	15.87	1.69
		Control	9.84	1.6

Table 3. Multivariate analysis of covariance test to compare the mean of research variables in two groups

Variable	Sources	Sum of squares	Degree of freedom	Mean of squares	F	significance	Eta square	Power
Psychological well being	Group	124.49	1	124.49	70.22	0.0001	0.77	1
Life expectancy	Group	155.46	1	155.46	84.88	0.0001	0/81	1

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Considering the significant difference in post-test in the experimental and control groups, the two-to-two study of the significant difference between the post-test scores of psychological well-being and life expectancy through pairwise comparisons (difference in means) with Bonferroni post hoc test confirmed the obtained results of the research.

Discussion

The results of analysis of covariance show that because the significance level (Sig.= 0.000) is less than 0.05, so the hypothesis H0 is rejected and the hypothesis H1 is confirmed. Therefore, it can be concluded that logotherapy training affects the psychological well-being of diabetic patients. The results of this test can be generalized to the statistical population with 95% confidence. Results from the present study with the findings of Soleimani & Khosravian (21), Faramarzi, & Bavali, (22), Golshan, Zargham Hajebi, & Sobhi Gharamaleki. (23), are consistent. Explaining these findings, it can be said that meaning therapy helps therapists to start and maintain meaning over time, and this shows that achieving meaningful and joyful activities is strong support against emotional instability and ensures mental health and well-being.

Also, there is a significant difference between the life expectancy scores of the experimental and control subjects at the level (Sig.= 0.000). Based on this, it can be stated that meaning therapy has increased the life expectancy of diabetic patients in the experimental group compared to the control group. Based on this, it can be stated that meaning therapy has increased the life expectancy of diabetic patients in the experimental group compared to the control group. The results are consistent with the research of Kang, et al., (24), Asghari, (25), Delavari, Nasirian (26), Hosseinian (27), and Breitbart, Gibson, Poppito, & Berg, (28).

Regarding the explanation of the above results, it can be acknowledged that semantic therapy training with emphasis on freedom and responsibility causes patients to change their position, strengthen their desire to live and face depression and helplessness, and finally feel optimistic and hope for the future is formed in them. Regarding the explanation of the above results, it can be acknowledged that semantic therapy training with emphasis on freedom and responsibility causes patients to change their position, strengthen their desire to live and face depression and helplessness, and finally feel optimistic and hope for the future is formed in them. Also, if we could not find meaning in our difficulties, it does not mean that life and difficulties have no meaning. Participating in group and semantic therapy training is a good opportunity for a person to express his feelings and emotions.

Conclusions

Logotherapy training is effective on psychological well-being and life expectancy of diabetic patients.

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Conflict of Interest

The authors of this article state that there is no conflict of interest**.**

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