



The Effectiveness of Laughter Yoga Training on Quality of sleep and positive and negative affect of female teachers with diabetes

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Abstract

Aim: The purpose of this study was to determine the effectiveness of laughter yoga training on sleep quality and positive and negative affect of female teachers with diabetes. **Method:** The research method was quasi-experimental with two groups of experimental and control, pre-test, post-test and two-month follow-up and the statistical population was 70 female teachers with diabetes in Zahedan in 1397. Sixty women were selected from this community in an accessible manner and randomly assigned 30 individuals in each of the experimental and control groups. The research tools were Pittsburgh Sleep Quality Questionnaire (1989) and Watson, Clark & Telgene (1988) Positive and Negative Affect Scale and Medical Laughter Yoga Program (2011) in 8 sessions of 60 sessions of two sessions per week for the experimental group. Data were analyzed using repeated measures analysis of variance. **Results:** Results showed the effect of laughter yoga training on sleep adequacy ($F = 4.15, P = 0.046$), positive affect ($F = 12.16, P = 0.001$), and negative affect ($F = 14.64, P = 0/001$) and stability of this effect was at follow-up. **Conclusion:** According to the findings of this study, laughter yoga training can be used as a complementary treatment along with other therapies to improve sleep quality and positive affect and reduce negative affect in women with diabetes.

Keywords: Diabetes, Sleep Quality, Positive and Negative Affect, Laughter Yoga.

Introduction

Diabetes, sometimes referred to as a silent epidemic, is a chronic metabolic disease and a major health and physical problem that is increasing, especially in developing countries (Sharma et al., 2018). This disorder is caused by the inability of the body to produce or use insulin, and it is a syndrome that occurs due to an imbalance between the need for insulin and its supply (Amiri et al., 2010).

Research indicates a significant relationship between sleep quality and the prevalence and occurrence of diabetes; In this way, sometimes insomnia can be caused by diabetes, or it can itself be the cause of diabetes. In recent years, several epidemiological studies have been conducted on the relationship between the amount and quality of night sleep and the prevalence and incidence of diabetes; In these studies, it has been seen that the increase or decrease in the duration of night sleep is related to the increase in the prevalence and occurrence of diabetes or the inappropriate control of blood sugar in diabetics (Sharma et al., 2018).

There are another psychological variables that are of significant importance in issues related to diabetic patients. Emotions are an essential part of the dynamic system of human personality. Characteristics and changes of emotions, how to communicate emotionally and understand and interpret the emotions of others play an important role in growth, personality organization, moral transformation, social relations, identity formation and self-concept (Miri, Karimian and Stovar, 2015). Positive affect expresses the "passionate motivational" system that motivates its reward. In principle, positive affect and good mood contribute to "approach behavior" (Cheo, Gantert, Kim, Alfano, & Ruggiero, 2018). Negative emotion represents the "annoying motivation" system that is triggered by punishment, and basically, negative emotion and unpleasant mood contribute to "avoidance behavior" (Singeroff Barbaum, Fritsche, Petrellini, Blaim et al., 2018). "High positive emotion" indicates high energy, full concentration, and enjoyable employment, while "low positive emotion" indicates sadness and depression. People with "high positive emotion" actively, powerfully, combined with enthusiasm, cheerfulness and trust, approach life, seek companionship with others and enjoy it. They have complete trust and satisfaction in their social interactions (Cheo et al., 2018). These people like exciting experiences and are not afraid to be the center of attention. On the other hand, people with "low positive emotion" lack energy, passion and confidence. They are reserved and socially withdrawn, avoid passionate experiences, and are generally hesitant to actively engage with their environment. On the other hand, people with "high negative emotion" tend to be unhappy and dissatisfied, have a negative view of themselves, and people who score low in this dimension are relatively calm, safe, and satisfied with themselves. (Akbari, 2016).

Therefore, as stated, diabetes can affect the physical and physical performance, mental and emotional state, and in general, the quality of sleep and positive and negative emotions of affected people (Norgaard & Kilgast, 2019). Therefore, it requires proper treatment and trying to improve the sleep quality and negative emotions of these patients is necessary and unavoidable.

Extensive research conducted in the last two decades in various countries of the world has proven that laughing has a positive effect on various body systems and is involved in strengthening the body's immune system.

Laughter yoga is done as a group activity that starts with eye contact and childish games and then turns into genuine and contagious laughter (Kataria, 2011).

Therefore, this research was conducted with the aim of determining the effect of laughter yoga on sleep quality and positive and negative emotions in female teachers with diabetes to test the following hypotheses.

1. Laughter yoga intervention is effective in increasing the quality of sleep in women with diabetes and this effect remains stable in the follow-up phase.
2. Laughter yoga intervention is effective in increasing positive affect in women with diabetes and this effect remains stable in the follow-up phase.
3. Laughter yoga intervention is effective in reducing negative emotions in women with diabetes and this effect remains stable in the follow-up phase.

Method

The research method was quasi-experimental with two groups of experimental and control, pre-test, post-test and two-month follow-up and the statistical population was 70 female teachers with diabetes in Zahedan in 1397. Sixty women were selected from this community in an accessible manner and randomly assigned 30 individuals in each of the experimental and control groups. The research tools were Pittsburgh Sleep Quality Questionnaire (1989) and Watson, Clark & Telgene (1988) Positive and Negative Affect Scale and Medical Laughter Yoga Program (2011) in 8 sessions of 60 sessions of two sessions per week for the experimental group. Data were analyzed using repeated measures analysis of variance.

Results

The results showed that the average sleep quality and negative affect decreased and the average positive affect increased more in the experimental group in the post-test phase compared to the control group.

Kolmogorov-Smirnov test indicates the establishment of the condition of normal distribution of scores and the result of the Levene test also indicates the establishment of the condition of homogeneity of variances in the research variables (quality of life and positive and negative emotions). Moheli's W statistic for the research variables is significant at the 0.01 level. This finding shows that the variance of the differences between the levels of the dependent variable is significantly different; Therefore, the assumption of sphericity is not met. In this situation, Geisser's epsilon correction should be used; Therefore, in the following, this statistic was used to interpret the results of the within-subjects effects test.

Considering that the significance level of chi square estimation for this test is less than 0.05, so this assumption has been violated. In this situation, epsilon correction should be used. Therefore, the proposed lower bound of the three correction options is more conservative than the other two. Therefore, the Greenhouse-Geisser statistic has been used to interpret the results of the within-subjects effects tests.

Laughter yoga training was effective on the sleep quality score ($P = 0.046$) with an effect size of 0.06; It was effective on the positive affect score ($P = 0.001$) with an effect size of 0.17; It has been effective on the negative affect score ($P = 0.001$) with an effect size of 0.20.

Conclusion

The results of variance analysis of repeated measures showed that laughter yoga training is effective on the sleep quality of female teachers with diabetes and the average of the experimental group increased compared to the control group.

Therefore, laughter yoga can be recommended as a complementary treatment for people with diabetes to treat and reduce the mental and psychological consequences of diabetes and other complications related to it.

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