



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

Elahe. Heidari¹

Mahmoud. Shirazi^{2*}

Gholam Reza. Sanaguye Moharer³

1. *Corresponding author: PhD student, Department of Psychology, Faculty of Psychology and Educational Sciences, Zahedan Branch, Islamic Azad University, Zahedan, Iran
2. Department of Psychology, Faculty of Psychology and Educational Sciences, Sistan and Baluchestan University, Zahedan, Iran
3. Department of Psychology, Faculty of Psychology and Educational Sciences, Zahedan Branch, Islamic Azad University, Zahedan, Iran

Email: mshirazi@edpsy.usb.ac.ir Received: 05.04.2021 Acceptance: 09.07.2021

Journal of Applied Family Therapy

eISSN: 2717-2430
http://Aftj.ir

Vol. 4, No. 4, Pp: 49-68
Fall 2023

Original research article

How to Cite This Article:

Heidari, E., Shirazi, M., & Sanaguye Moharer, G. R. (2023). The Effectiveness of Laughter Yoga Training on Quality of sleep and positive and negative affect of female teachers with diabetes. *aftj*. 4(4), 49-68.



© 2023 by the authors. Licensee Iranian Association of Women's Studies, Tehran, Iran. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0 license) (<http://creativecommons.org/licenses/by-nc/4.0/>)

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.

References

- Akbari Oriani, B. (2016). The effect of laughter yoga on moods and concentration of salivary immunoglobulin (A) in women of Zahedan city. Doctoral dissertation in dentistry, Zahedan University of Medical Sciences.
- Amiri, M., Aghaei, A., & Abedi, A. (2010). The effect of immunization training against stress on the general health of diabetic patients. *Applied Psychology Quarterly*, 4(4 consecutive 16); 85-100
- Baghernejad, O. (2016). Investigation of emotion control in people with diabetes and normal people, 6th National Congress of Family Pathology, Tehran: Shahid Beheshti University.
- Behzadi, A., Shahidi, M., Farrokhi, N. A., & Jafari, F. (2013). Effectiveness of Kataria laughter therapy on increasing the level of general health of elderly men living in Shahid Hashminejad nursing home in Tehran, *Journal of Counseling Research*, 47 (12): 5-21
- Chue A.E. Gunthert K.C. Kim R.W., Alfano, C. A., & Ruggiero, A.R. (2018). The role of sleep in adolescents' daily stress recovery: Negative affect spillover and positive affect bounce-back effects. *Journal of Adolescence*, 66; 101-11
- Dolgoff-Kaspar R, Baldwin A, Johnson MS, Edling N, Sethi GK. (2012). Effect of laughter yoga on mood and heart rate variability in patients awaiting organ transplantation: a pilot study. *Alternative therapies in health and medicine*, 18(5),61
- Fakhri, Z., Rezaei, A., Pakdaman, Sh., & Ebrahimi, S. (2013). The mediating role of academic self-efficacy beliefs in predicting achievement goals based on positive and negative affect. *Applied Psychology Quarterly*, 7(1); 55-68
- Golparvar, M., & Karmi, M. (2010). The moderating role of positive and negative affect in the link between organizational injustice and employees' destructive behaviors. *Applied Psychology Quarterly*, 4(3); 7-23
- Hedayati, A., Pourasmail, A., Gholampour, Y., & Dehghan, A. (2016). The relationship between sleep disorders and hemoglobin A1c level in type 2 diabetes mellitus patients, *Journal of the School of Medicine, Mashhad University of Medical Sciences*, 3 (59): 179-187
- Hemati, Z., Alidosti, M., & Raisi, M. (2012). Comparison of sleep quality of type 1 diabetic patients with non-diabetic patients, *Paish Quarterly*, 6 (11): 863-867
- Heydari, A., Ehtshamzadeh, P., & Marashi, M. (2010). The relationship between insomnia severity, sleep quality, sleepiness and mental health disorder with academic performance in girls, *Women and Culture Research Quarterly*, 1 (4): 65-76
- Karimi, M., & Rezaian Abarghoui, A. (2015). The effect of a course of selected yoga exercises on C-reactive protein and sleep quality in non-athletic obese men, *International Conference on Physical Education and Sports*, Tehran: Shahid Beheshti University.
- Keikhaei Hosseinpour, A., Rahnama, N., & Chitsaz, A. (2013). The effect of eight weeks of laughter yoga exercises on motor function, balance and flexibility of patients with Parkinson's disease, *Journal of Research in Rehabilitation Sciences*, 1 (9): 47-39

- Ko, H.J. Young, C.H. (2011). Effects of laughter therapy on depression, cognition and sleep among the community-dwelling elderly. *Geriatrics & Gerontology International*;11 (3):267-74
- Lallukka T., Sivertsen B., Kronholm E., Bin Y.S., Øverland S., Glozier N. (2018). Association of sleep duration and sleep quality with the physical, social, and emotional functioning among Australian adults. *Sleep Health*, 4(2): 194-200
- Majid, M. (2012). *The power of laughter*, first edition, Tehran: Nesl Navandish.
- Memarian, A., Sanatkaran, A., Bahari, S. M., & Habibi, S. M. (2017). Effectiveness of Laughter Yoga Exercises on Anxiety and Sleep Quality in the Elderly with Parkinson's, *Journal of Geriatric Psychology*, 2(3): 85-96
- Merati, M., Amini, M., Kheyraadi, G., Fakhari Esfaziri, M., Fakhari Esfaziri, N., & Zanari Yazdi, R. (2011). Comparison of night sleep of people with type 2 diabetes, impaired glucose tolerance or fasting blood sugar with non-diabetic people, *Iranian Journal of Endocrine and Metabolism*, 2 (13): 165-172
- Miri, A., Karimian, E., & Ostovar, F. (2015). The role of positive and negative emotions and problem-solving styles in predicting life satisfaction in people with diabetes, *Diabetes Nursing Quarterly*, Zabul College of Nursing and Midwifery, 3 (3): 75-88
- Nørgaard K., & Kielgast U. (2019). A Response to "The Relationship between Sleep and Quality of Life in Type 1 Diabetes Patients". *Diabetes Therapy*, 10(3); 1173-1174
- Raai, F. (2016). *Determining the effectiveness of laughter yoga on stress and quality of life in cancer patients*, the second national conference of modern researches in the field of humanities and social studies of Iran, Qom: Soroush Hikmat Mortazavi Islamic Studies and Research Center
- Sharma D., Kaur J., Rani M., Bansal A., Malik M., Kulandaivelan S. (2018). Efficacy of Pilates Based Mat Exercise on Quality of Life, Quality of Sleep and Satisfaction with Life in Type 2 Diabetes Mellitus. *Rom J Diabetes Nutr Metab Dis*. 25(2):149-156
- Sheikhul-Islami, R., Nejati, A., & Ahmadi, S. (2011). Predicting the components of married women's happiness through self-esteem and marital relations. *Journal of Women in Culture and Art*, 3(1); 39-54
- Singer M., Burbaum C., Fritzsche K., Peterlini S., Bliem H.R., Ocaña-Peinado F.M., Schubert C. (2018). Subjective Positive and Negative Sleep Variables Differentially Affect Cellular Immune Activity in a Breast Cancer Survivor: A Time-series Analysis Approach. *Sleep Disorders*, 3(4); 58-69
- Smeltzer S, Bare BG. (2016). *A textbook of medicalsurgical nursing*. 10th Edition, WB Lippincott Co: Philadelphia.
- Tasali, R. Leproult, and K. Spiegel, (2009) Reduced sleep duration or quality: relationships with insulin resistance and type 2 diabetes. *Progress in cardiovascular diseases*, 51(5); 381-391
- Wiener, A.& Fauci, E. (2015). *Harrisons Principles of Internal Medicine Self-Assessment and Board Review 18th Edition*: McGraw Hill Professional.
- Yilmaz, H., & Arslan, C. (2013). Subjective well-being, positive and negative affect in Turkish university students. *The online Journal of Counseling and Education*, 2 (2), 1-8
- Zeng Y., Wu J., Yin J., Chen J., Yang Sh., & Fan Y. (2018). Association of the combination of sleep duration and sleep quality with quality of life in type 2 diabetes patients. *Quality of Life Research*, 27(12); 3123-3130