



The benar relaxation therapy (BRT) for increasing sleep quality in diabetic type II at Pakem primary health centre

Terapi relaksasi benar meningkatkan kualitas tidur pasien dengan diabetes melitus tipe II di Puskesmas Pakem

Rizqi Wahyu Hidayati^{1*}, Dwi Kartika Rukmi²

¹Health Faculty, University Jenderal Achmad Yani Yogyakarta, Indonesia

INFO ARTIKEL

ARTICLE HISTORY:

Artikel diterima: 24 Oktober 2024
Artikel direvisi: 21 November 2024
Artikel disetujui: 26 November 2024

KORESPONDEN

Rizqi Wahyu Hidayati,
rizqiwahyu2989@gmail.com. Orcid ID:

ORIGINAL ARTICLE

Halaman: 275 - 280
DOI:
<https://doi.org/10.30989/mik.v13i3.892>

Penerbit:
Universitas Jenderal Achmad Yani
Yogyakarta, Indonesia.
Artikel terbuka yang berlisensi CC-BY-SA



ABSTRACT

Background: Insomnia was 4.3 times more risky improving blood glucose. Nowadays, 60% of diabetes type II patients are insomnia. Sleep regulates the hormones and regulation of glucose. Poor glucose regulation has an effect on obesity, which increases the risk of diabetes complications.

Purpose: To evaluate the effect of Benar Relaxation Therapy (BRT) on increasing sleep quality in diabetes patients.

Method: This study was a Quasi-experimental method with a pre-posttest control group design—the 37 adults with type II diabetic patients. The patients who had got ADLs independently in Pakem Primary Health Centre followed this study. Both the BRT and aromatherapy needed 3 days long and got 15 minutes for one session each day. PSQI was used to measure the sleep quality of the respondents. The Friedman was used to test statistically.

Result: Based on the result, it showed that the p-value 0.02 ($p < 0.05$) for the intervention group with the Post Hoc result pre–post 1 was 0.017; pre-post 2 was 0.006; and pre-post 3 was 0.009 ($p < 0.05$). However, the control group was 0.188 ($p > 0.05$).

Conclusion: Benar Relaxation Therapy significantly increases sleep quality with one session minimum intervention. This therapy can be implemented in nursing practice who have insomnia, especially patients with type II diabetes.

Keywords: Benar Relaxation Therapy; Diabetic Type II; Sleep Quality

ABSTRAK

Latar belakang: Orang insomnia berisiko 4,3 kali meningkatkan glukosa darah. Saat ini 60% pasien diabetes tipe II insomnia. Tidur mengatur hormon dan pengaturan glukosa. Regulasi glukosa buruk memiliki efek obesitas yang meningkatkan risiko komplikasi diabetes.

Tujuan: Mengevaluasi pengaruh Terapi Relaksasi Benar (BRT) terhadap peningkatan kualitas tidur pada pasien diabetes.

Metode: Penelitian menggunakan metode Quasi-experimental dengan rancangan pre-posttest control group design. Sebanyak 37 pasien dewasa penderita diabetes tipe II. Para pasien yang sudah mendapatkan ADL secara mandiri di Puskesmas Pakem mengikuti penelitian ini. Baik BRT maupun aromaterapi membutuhkan waktu 3 hari dan dengan waktu 15 menit untuk satu sesi setiap harinya. PSQI digunakan untuk mengukur kualitas tidur responden. Friedman digunakan untuk uji statistik.

Hasil: Hasil penelitian menunjukkan nilai $p = 0,02$ ($p < 0,05$) untuk kelompok intervensi dengan hasil Post Hoc pre–post 1 adalah 0,017; pra–pasca 2 adalah 0,006; dan pra-pasca 3 adalah 0,009 ($p < 0,05$). Namun kelompok kontrol adalah 0,188 ($p > 0,05$).

Kesimpulan: Terapi Relaksasi Benar meningkatkan kualitas tidur secara signifikan dengan intervensi minimal satu sesi. Terapi dapat diimplementasikan dalam praktik keperawatan pada orang insomnia khususnya pasien diabetes tipe II.

Kata kunci: Benar Relaxation Therapy; Diabetic Tipe II; Kualitas Tidur

BACKGROUND

Nowadays, the diabetes patients in Indonesia is getting increase (1). The type II Diabetic Mellitus prevalence in Yogyakarta is the second highest in Indonesia, diabetic is also one of the highest non-communicable diseases, along with hypertension and cancer in Di Yogyakarta (2)(3). Many of them get psychological pain, the effect of the chronic disease. Psychological pain is almost suffers for people with psychological stress(4). Insomnia is one of the psychological syndrome. Based on Jin, Chen, Yu, & Li, there is 60% of the diabetes mellitus suffering insomnia or poor sleepers(5).

People with diabetes is risky 4.3 times increasing in blood sugar with insomnia(6) Cauter, Spiegel, Tasali, & Leproult said that sleep is the major modulator of hormonal release, the regulation of glucose, and cardiovascular function. Moreover, the poor sleeper also has risky in obesity because of the hormone which play in central control of appetite. This is improve the complication in people with diabetes type II(7).

Because of this reason, it is important patient to get good quality of sleep. There is many of management which is improving the quality of sleep, such as relaxation. Benson technique and aromatherapy are the examples of non-pharmacological therapies(8)(9). This research is modified by two of the therapy; Benson Relaxation Technique and Aromatherapy. Next, this therapy is called Benar Relaxation Therapy. The aim of this study was to know the effectiveness of Benar

Relaxation Therapy to improve the sleep quality in patients with diabetic type II.

METHOD

The method was quantitative with quasi experiment pre-post control group design. The intervention group received BRT and the control group only received inhalation lavender aromatherapy. The participants' data was taken at Pakem Primary Health Centre and the cadres helped researcher to raffle them for choosing between intervention and control groups. The respondents were diabetes patients in Pakem Primary Health Center for the respondents. The inclusion criteria were Diabetes patient which is ≥ 35 years old and they had independence Activity Daily Living's (ADLs). The exclusion criteria were Diabetes patients with severe dementia, mental disorder and severe cardiopulmonary disease. Total participants were 40 patients; however, 3 patients were dropped out because they refused to be checked the blood glucose. There was one participant in control group (aromatherapy group) and there were two patients in intervention group (BRT group). Because of that, the total participants who joined in this study were 37 participants, which is divided in two group. There were 18 patients in BRT group and 19 patients in aromatherapy group. The Instruments used Pittsburgh Sleep Quality Index (PSQI) for sleep quality. Based on normality test of SPSS 21, the statistic test used Friedman. Every respondent had 15 minutes for each session in 3 days therapy. They finished the study after 9 session therapy

in 3 weeks. The formula of the aromatherapy was formulated by the researchers with 3 drops of pure aromatherapy and it was diffused in 20 ml of sterile water. While they induced the aromatherapy, they did the Benson Relaxation Techniques. This therapy called Benar Relaxation Therapy (BRT) because it was modified from Benson Relaxation Techniques and Inhalation Lavender Aromatherapy. Moreover, because of The Covid-19 Pandemic, the BRT recorded into video and it was shared to the respondents by the Cadres. To maintain the dosage of the Lavender Aromatherapy, the research was formulated it before it was shared to the respondents. This study also had ethical approval with a number: Skep/010/KEPK/II/2020.

RESULT AND DISCUSSION

Based on table 1, the average of aged was 58.05. It showed that most of them were adults. Female had majority in number of the respondents with 70.3%. The unemployed, including housewives and retired, was 59.5%. Most of the respondents were educated, there was 89.2%. They also got medical treatment, it was 75.7% and they had Pakem 1 Primary Health Center activities for people with chronic disease. It was called Prolanis. The majority of patients also did the exercise such as walking in the morning for about 30 minutes each day. There were only 37.8% who had other disease such as hypertension, uric acid, stroke, and kidney failure.

Table 1. Frequencies of demographic data

No	Variable	Mean (SD)	% (N = 37)
1	Age (years olds)	58.05 (1.02)	
2	Duration (years)	2,5 (0.87)	
Sex			
3	Male		29.7
	Female		70.3
Jobs			
4	a. Unemployment		59.5
	b. Farmer		24.3
	c. Entrepreneur		13.5
	d. Laborer		2.7
Education			
5	a. Uneducated		10.8
	b. Elementary		13.5
	c. Junior High School		29.7
	d. Senior High School		40.5
	e. Diploma		5.4
Diabetes Medical Treatment			
6	Yes		75.7
	No		24.3
Exercise (≥ 30 minutes)			
7	Yes		73
	No		27
Other Disease			
8	Yes		37.8
	No		62.2

Table 2 was consist of the effectivity of the therapy. Based on the Friedman test, the Benar Relaxation Therapy was more effective than Lavender Aromatherapy in increasing sleep quality ($p < 0.05$). The post hoc p-value for pre-test to post-test in weeks 1, 2 and 3 were under 0.05. It meant that to increase the sleep quality, the respondents should have three days therapy of Benar Relaxation Therapy.

Table 2. The Effect of Benar Relaxation Therapy (BRT) for Physiologic symptoms (N = 37)

Variable	Time Series	Intervention (BENAR Therapy)			
		N	Mean - Rank	Median (Min-Max)	Sign

Sleep Quality	Pre	3.17	1.5 (0 – 7)
	Post-Test 1	2.42	1 (0 – 2)
Post-Test 2	2.28	1 (0 – 2)	
Post-Test 3	2.14	1 (0 – 2)	

*With Intervention Post-Hoc Wilcoxon: Pre-Post 1 was 0.017; Pre-Post 2 was 0.006; and Pre-Post 3 was 0.009 ($p < 0.05$).

The results of this study state that sleep quality can be improved with Benar Relaxation Therapy. Based on statistical tests, it was found that the value of $p = 0.02$ ($p < 0.05$), meaning that this therapy is really effective in improving the quality of sleep for patients with diabetes. The differences was be met in sleep latency, sleep disorder, and medication. In sleep latency, there were any respondent said that before used Benar Relaxation Techniques, the sleep latency had 60 – 120 minutes of duration. However, after they did this therapy, the sleep latency was decreasing from 120 minutes to 10 minutes.

This is in line with Habibollahpour, Ranjkesh, Motalebi, & Mohammadi that the quality of sleep in the elderly is better in clients with Benson relaxation therapy than in the control group(10). This statement is also in line with Masry, Aldoushy, & Abd that Benson relaxation is effective for reducing sleep disorders in adults and the elderly with joint replacement surgery(11). Beside it, Rambod, Pourali-mohammadi, Pasyar, Rafii, & Sharif said that the Benson relaxation technique also effective to improve sleep quality index subscale sleep disturbance, day time dysfunction, the use of sleep medication, and subjective sleep quality for the examples(12).

Because this study it used mixture of Benson Relaxation Techniques and aromatherapy which is Benson relaxation techniques had good effect for sleep quality.

Benson relaxation techniques stimulates the parasympathetic nerves. It also releases the tension in the muscle, it release the chemical bond such as actin and myosin. When the muscle relaxed, they need oxygen less. Finally, the heart does not need pump too fast, then the blood pressure and heart rates decrease(13).

The Benar Relaxation Therapy was modified by Benson Relaxation Techniques and inhalation lavender aromatherapy. Lavender aromatherapy is improving the relaxation effect of Benson relaxation techniques. Gultom, Ginting, & Silalahi said that aromatherapy is decreasing blood pressure and palpitation. Because, it has a sedative effect. Lavender aromatherapy has directly effect for the brain. The receptor in a brain catch the smell of the lavender, then it delivers the information at the brain which control the mood and emotion(14).

This finding has the same results as Keshavarz Afshar et al., stated that Lavender can improve sleep disorders in postpartum mothers in a follow-up for 8 weeks. This therapy can stimulate the liquor and neurobiological systems, as well as the sedation effects of linalool acetate(15). Muz & Taşçı inhalation aromatherapy improves sleep quality and decrease fatigue level in hemodialysis patients(16).

It consistent with our result that there was

any respondent said that he took a medicine to help in sleeping process. However, after he joined the BRT, he felt better and never take any medicine anymore after they got Benar relaxation therapy (BRT). Besides, breathing in BRT is effectively for decreasing stress(17) and lowering the blood pressure(18). Because it induce development of mood and stress control(19).

CONCLUSION

The Benar relaxation Therapy (BRT) was effectively improving quality of sleep-in patients with diabetes type II. Because of this result, this therapy can be implemented to patients' diabetes type II who has insomnia or poor sleeper.

REFERENCES

1. Kemenkes RI. Hari Diabetes Sedunia Tahun 2018: Pusat Data Dan Informasi Kementrian Kesehatan RI. 2019.
2. Pemerintah Kota Yogyakarta. Profil Kesehatan Tahun 2019 Kota Yogyakarta. 2019.
3. Kemenkes RI. Hari Diabetes Sedunia Tahun 2018: Pusat Data Dan Informasi Kementrian Kesehatan RI. 2019.
4. Mitra A, Krishna P, NDSS, Hackett RA, Steptoe A, Kesehatan FI, et al. The Effectiveness of Aromatherapy for Depressive Symptoms: A Systematic Review. *Evidence-based Complementary and Alternative Medicine*. 2016;11(1):e15452.
5. Jin QH, Chen HH, Yu HL, Li TL. The relationship between sleep quality and glucose level, diabetic complications in elderly type 2 diabetes mellitus. *Zhonghua Nei Ke Za Zhi*. 20012;51(5).
6. Amelia R, Harahap J, Harahap NS, Wijaya H, Ariga RA, Fujiati II. Effect of Sleep Quality on Blood Glucose Level of Type 2 Diabetes Mellitus Patients in Medan , Indonesia Effect of Sleep Quality on Blood Glucose Level of Type 2 Diabetes Mellitus Patients in Medan , Indonesia. 2020;(January 2021).
7. Cauter E Van, Spiegel K, Tasali E, Leproult R. Metabolic consequences of sleep and sleep loss. *Sleep Medicine*. 2015;9(0 1):1–11.
8. Otaghi M, Borji M, Bastami S, Solymanian L. The effect of benson relaxation technique on depression in patients undergoing hemodialysis. *Journal of Babol University of Medical Sciences*. 2015;17(8):34–40.
9. Sánchez-Vidaña DI, Ngai SPC, He W, Chow JKW, Lau BWM, Tsang HWH. The Effectiveness of Aromatherapy for Depressive Symptoms: A Systematic Review. *Evidence-based Complementary and Alternative Medicine*. 2017;2017.
10. Habibollahpour M, Ranjkesh F, Motalebi SA, Mohammadi F. The Impact of Benson's Relaxation Technique on the Quality of Sleep in the Elderly. *Topics in Geriatric Rehabilitation*. 2019;35(1):88–94.
11. Masry SE, Aldoushy EE, Abd N. Effect of Benson's Relaxation Technique on Night Pain and Sleep Quality among Adults and Elderly Patients Undergoing Joints Replacement Surgery. *International Journal of Nursing Didactics*. 2017;7(4).
12. Rambod M, Pourali-mohammadi N, Pasyar N, Rafii F, Sharif F. The effect of Benson ' s relaxation technique on the quality of sleep of Iranian hemodialysis patients : A randomized trial. *Complementary Therapies in Medicine*. 2013;21(6):577–84.
13. Marasabessy NB, Herawati L, Achmad I. Benson's relaxation therapy and sleep quality among elderly at a social institution in inakaka, Indonesia. *Kesmas*. 2020;15(2):65–72.
14. Gultom AB, Ginting S, Silalahi EL. The Influence of Lavender Aroma Therapy on Decreasing Blood Pressure in Hypertension Patients. *International Journal of Public Health Science (IJPHS)*. 2016;5(4):470.
15. Keshavarz Afshar M, Moghadam ZB, Taghizadeh Z, Bekhradi R, Montazeri A, Mokhtari P. Lavender fragrance essential oil and the quality of sleep in

- postpartum women. *Iranian Red Crescent Medical Journal*. 2015;17(4):1–7.
16. Muz G, Taşcı S. Effect of aromatherapy via inhalation on the sleep quality and fatigue level in people undergoing hemodialysis. *Applied Nursing Research*. 2017;37:28–35.
17. Upoyo AS, Taufik A. The Different of Finger Handheld and Deep Breathing Relaxation Techniques Effect on Reducing Heart Rate and Stress Levels in Primary Hypertension Patients. 2019;7(3).
18. Aritonang YA. The Effect of Slow Deep Breathing Exercise on Headache and Vital Sign in Hypertension Patients. *Jurnal Keperawatan Padjadjaran*. 2020;8(2).
19. Perciavalle V, Blandini M, Fecarotta P, Buscemi A, Di Corrado D, Bertolo L, et al. The role of deep breathing on stress. *Neurological Sciences*. 2017;38(3):451–8.