ISBN 978-602-73585-0-8

THE 2nd INTERNATIONAL CONFERENCE OF HEALTH SCIENCE 2015

Optimizing The Life Quality of Children Under SDGs

POLTEKKES KEMENKES YOGYAKARTA

PROCEEDING BOOK

October, 11th, 2015
Inna Garuda Hotel Yogyakarta

Email: icbs@

BENSON RELAXATION TECHNIQUES TO REDUCE DEPRESSION HEMODIALYSIS PATIENTS PKU MUHAMMADIYAH HOSPITAL IN YOGYAKARTA

Elsa Yunita[1], Harmilah[2], AnitaKustanti[1]

[1]Nursing Science Faculty of Medicine GMU
[2]Politeknik Health Ministry of Health of Yogyakarta
Email : harmilah2006@yahoo.com

ABSTRACT

Patients with chronic kidney disease should undergo hemodialysis therapy (HD) to sustain their life. That hemodialysis therapy performed on an ongoing basis can lead to changes in the patient's life. Such changes can lead to depression. Benson's relaxation technique is a combination of relaxation and beliefs held by the patient. The relaxation response arises from Benson's relaxation technique is expected to help Overcome Decrease the psychological problems and depression. This study aims to determine the effect of Benson's relaxation technique to depression reduction.The research was carried out by a Quasi Experiment pre-test and post-test design with control group methods in HD Patients at PKU Muhammadiyah Hospital in Yogyakarta. Thirty respondents were divided into intervention group (n = 14) and control group (n = 16). The intervention group was given a Benson's relaxation technique twice a day with 15 minutes duration and the control group was not given the intervention. Depression measurements performed twice, pre and post in the two groups with the Beck Depression Inventory-II (BDI-II). The results of this study showed that there are significant differences mean depression scores in both groups with $p = 0.004$ ($p < 0.05$). Decreasing in depression scores occurred in the group receiving Benson's relaxation technique after getting intervention with the average value (SD) 8:21 (7:33). Benson's relaxation technique has a significant effect in reducing depression of hemodialysis Patients.

Keywords: chronic kidney disease, Benson relaxation techniques depression, BDI-II

INTRODUCTION

Kidney is one organ having a vital function. The main function of the kidneys, among others are as organ secretions, excretions, and filtration. Progressive decline in renal function will end up with chronic kidney disease (CKD). Chronic kidney disease is an abnormality of structure or function of the state of the kidney that lasted more than three months[1]. Patients with CKD will still be able to survive for many years with renal replacement therapy. One replacement therapy of renal function is hemodialysis (HD). Patients with chronic renal rely heavily on HD treatment to replace kidney function. Patients who have undergone HD will continue to make regular HD therapy to connect their lives[2]. People with chronic diseases, including patients undergoing HD continuous therapy will experience a change in their lives. HD inadequate process would cause side effects such as tired and weak, no appetite, nausea, insomnia, pruritus, tasteless tongue, difficulty in concentrating, decreased libido, body pain, and often an uncontrolled blood pressure. HD therapy will also affect the psychological state of the patient. Patients reported experiencing depression, anxiety, sexual dysfunctions, and problems interpersonal[4]. Research conducted by Tanvir et al., showed the prevalence of depression in patients with HD reached 57.30%[5].

Meanwhile, according Cengic & Resic, 51% of patients undergoing HD experience depresi[6]. Depression is a common problem in patients with CKD who received long-term HD therapy. It is associated with an increased real risk of morbidity and mortality in patients HD[7]. In addition to physical problems, psychological problems such as depression in HD patients also need to be considered because depression can worsen the patient's condition.

Relaxation techniques effectively reduce and prevent the psychological effects of stress[8]. Relaxation is one of the most useful non pharmacological techniques to reduce stress through the impact on the mental and physical condition, depression, mood swings, anxiety, and self-steam[4]. The easiest and less expensive relaxation methods is the Benson relaxation techniques. Benson Relaxation is a development method of relaxation combined with the confidence of patients and focused on certain words or phrases spoken repeatedly [9]. According to Gregory & Snyder mechanism of Benson relaxation consists of four main points, namely by creating a quiet environment, relaxing foot to head muscles, relaxing the body and mind, and doing a deep breathing, inhaling through nose and exhaling through mouth accompanied by the repetition of the phrase were able to make the patient calm and distract patients from stressor[10]. Responses arising from the expected relaxation techniques can help reduce psychological problems like depression in patients. The aim of this study is to determine the Benson relaxation techniques can reduce depression in hemodialysis patients at RS PKU Muhammadiyah Yogyakarta.

METHODS

This study was a quantitative type of Quasi Experiment pre-test and post-test design with Control Group. The study was conducted on 6th to January 26th, 2015 at RS PKU Muhammadiyah Yogyakarta. Subjects in this study were 30 patients with HD in RS PKU Muhammadiyah Yogyakarta. They were divided into intervention group (n = 14) , given Benson relaxation techniques twice daily in the morning at 06.00 and in the afternoon at 17.00 with a duration each 15 minutes for 14 days and the control group (n = 6) were not given the intervention. The inclusion criteria respondents, ie patients who are willing to be a sample, undergo HD twice a week, long live HD for less than three years, and is not affected by other diseases (except for patients with hypertension and diabetes were included in the inclusion criteria). Exclusion criteria namely psychotic patients, decreased consciousness, taking sedatives, using a ventilator, patient non-compliance (adherence value <80%), patients experienced an event that can lead to depression during the intervention process takes place.

Having obtained the intervention and control groups, then measuring the depression scores in both groups were conducted twice during the first day or the pre and post on the 15th day. Measurement scores of depression using the Beck Depression Inventory-II (BDI-II).

After data collection is complete analysis. Analysis between the intervention group and the control is done with Mann Whitney U Test.

RESULTS AND DISCUSSION.

Research result 1. Basic characteristics of respondents in the intervention group is that they have the same sex.. While the majority respondents in the control group are male. The average age of respondents were 48.5 years, whereas the intervention group and the control group is 42.44 years. Respondents in the intervention group are mostly housewives and in the control group are dominated by the private sector. Both group are mostly married.

High School (SMA) graduate dominated the last education background of both groups. They have the same characteristics as the proportion of the value of p> 0.05. The baseline characteristics of the respondents can be seen in Table 1.

Table 1.
Basic Characteristics of Respondents

Characteristics	Intervention Group		Control Group		*p-value*
	f (%)	Average (SD)	f (%)	Average (SD)	
Gender					0,296
Male	7 (50,0)		11 (68,8)		
Female	7 (50,0)		5 (31,2)		
Age		48,5 (9,41)		42,44 (12,93)	0,170
Jobs					0,244
Private	1 (7,1)		4 (25,0)		
Self	2 (14,3)		2 (12,5)		
Retired	2 (14,3)		3 (18,8)		
Housewives	7 (50,0)		2 (12,5)		
Other	2 (14,3)		5 (31,2)		
Marital					0,459
Unmarried	0 (0,0)		5 (31,2)		
Married	13 (92,9)		10 (62,5)		
Widow / Widower	1 (7,1)		1 (6,3)		
Last Education					0,971
No school	0 (0)		2 (12,5)		
Elementary School	4 (28,6)		2 (12,5)		
Junior High School	3 (21,4)		2 (12,5)		
High School	6 (42,9)		6 (37,5)		
College	1 (7,1)		4 (25,0)		

Scores of depression in HD patients in PKU Muhammadiyah Hospital in Yogyakarta.

Depression scores were measured in the intervention group and the control. Measurements depression scores performed twice during the pre-test and post-test. Depression scores of pre-test and post-test can be seen in Table 2.

Table 2.
Average Score Depression in Hemodialysis Patients Pre and Post Benson Relaxation Technique

Condition	Intervensi (n=14)		Control (n=16)		*p-value*
	Median (min. – max.)	Average (SD)	Median (min. – max.)	Average (SD)	
Pre	16,0 (5,0-41,0)	19,93 (11,24)	12,5 (3,0-33,0)	14,44 (8,37)	0,228
Post	6,5 (2,0-47,0)	11,71 (12,80)	12 (3,0-40,0)	15,06 (10,15)	-

Based on Table 2, the average depression score intervention group had higher scores than the control group. However, the average depression score before getting the Benson

relaxation techniques has equal proportions between the two groups, with p> 0.05. Post-test results showed the average depression scores were higher in the control group compared to the intervention group.

Relaxation techniques Benson Reduce Depression in HD patients in PKU Muhammadiyah Hospital in Yogyakarta.

Benson relaxation techniques in reducing depression can be determined by comparing the average value of the difference in depression scores pre and post intervention and control groups. Differences difference in pre- and post-depression scores in both groups were analyzed using nonparametric statistical test Mann Whitney U Test because the data are not normally distributed.

Table 3.

Mean Difference Score Depression Pre-Post Intervention Group and Comparative on HD Patients in PKU Muhammadiyah Hospital in Yogyakarta

Group	N	Median (min-max)	SD	P value
Intervention	14	**9,0 (-6,0 - 20,0)**	8,21 (7,33)	0,004
Control	16	(-16,0 – 10,0)	-0,63 (7,59)	

Based on Table 3, it is known that the average difference in depression scores pre and post Intervention group showed decreased depression scores after the intervention of Benson relaxation techniques was given. Whereas, in the control group showed negative results, which means an increase in depression scores in the group having no Benson relaxation techniques intervention Different test results showed no significant difference with p = 0.004 (p <0.05). The difference in mean depression scores between before and after a given Benson relaxation techniques. Different test is performed to determine changes in depression scores experienced by respondents after the study. Control of different test conducted by a mean score of depression pre-test and post-test in each group. Different test results in the intervention group and the control can be seen in Table 4.

Table 4.

Average Score Depression Intervention Group Between Pre-test and Post-test Benson Relaxation Technique In HD patients at RS PKU Muhammadiyah Yogyakarta

Group	N	Average (SD)		*CI* 95%	*p-value*
		Pre	*Post*		
Intervention	14	19,93 (11,24)	11,71 (12,80)	3,982 - 12,446	0,001
Control	16	14,44 (8,37)	15,06 (10,15)	-4,669 - 3,419	0,746

Based on Table 4, the average value of the depression scores in the intervention group decreased from pre-test to post-test at the time after the intervention. Different test conducted by Paired T-Test showed a significant difference with p = 0.001 (p <0.05). In the control group mean depression scores showed improvement from pre-test to post-test, but the increase in depression scores is not worth the significant difference with p = 0.746 (p <0.05). Different test performed by using paired T-test.

Discussion

The results showed that Benson relaxation techniques significantly reduce depression in patients with HD in PKU Muhammadiyah Hospital in Yogyakarta. These results form a significant decrease in depression scores in the group receiving Benson relaxation techniques. whereas in the group who did not receive therapy were actually having an increased depression scores. Results are also obtained by comparing the scores of depression in the intervention group and the control.

In this study, the mean depression scores obtained when the intervention group pre-test decreased while post-test scores are shown in Table 7. The increase in mean depression scores when pre-test to post-test occurs in the control group are shown in Table 8. according to the research conducted by Mahdavi et al., the mean score of depression in the intervention group decreased from the pre-test (9.04) to post-test (8.90). Whereas the increase occurred in the control group with pre-test (8.92) and post-test (9.16) [4].In the research that has been conducted, the average depression score intervention group showed a decrease of 8[21]. The decrease was statistically significant with $p = 0.004$ ($p < 0.05$). Decrease in depression scores in the intervention group in this study can be explained as a result of relaxation techniques and methods of delivery Benson. Relaxation as a calming technique. Relaxation can reduce physical tension, mental, and emotional domination parasimpatis[9].

The results are consistent with previous studies that have been done to look at Benson relaxation techniques to depression. Research conducted by Inayati in UPT Care Elderly Jember to see the effect of the relaxation benson on the level of depression elderly scratch using a questionnaire GDS (Geriatric Depression Scale), the number of samples 42 elderly showed a decrease in the level of depression with $p = 0.001$ ($p < 0$ 05) [11]. The study ever conducted Aryana & Novitasari in Social Rehabilitation Unit Wening Ward Ungaran with a sample of 30 respondents also showed the existence of a significant effect on reducing the level of stress with a value of $p = 0.002$ ($p < 0.05$) [12].Benson relaxation technique is a combination of breathing in and focus on the beliefs held by the patient. The results are consistent with other studies conducted focus on the benefits of meditation for reducing the emotional state of depression, anxiety, and stress. Research conducted Schreiner & Malcom showed that subjects who received meditation therapy for 10 weeks experienced a decrease in depression scores with $p < 0,05$[13]. Kanoija also mentioned that the subjects who received the mindfulness meditation-based stress reduction (MBSR) decreased depression within 8 weeks [14].Keeping your mind focused and resignation is an act that should be applied at the time of Benson relaxation techniques. Implementation of measures focusing on relaxation techniques Benson also found in yoga relaxation. Yoga can improve depression. In a study by Shapiro et al., Shows a decrease in depression scores were measured using the Hamilton Depression Scale (HAM-D) with $p = 0.001$ ($p < 0.05$) .15 In addition, other studies that support is research by Nazara states that surrender exercises may improve depressive symptoms as indicated by a decrease in BDI scores, a reduction in symptoms of depression in the intervention group than the control group, with $p = 0.012$ ($p < 0.05$) .[16].Beliefs held by patients cause rapid relaxation response and cause the state to relax. The stronger a person's beliefs combined with the relaxation response the greater the relaxation effect would take place[17]. According Beson in Datak, Benson is a combination of relaxation techniques which involve a deep breath with confidence will provide the dual effect of the relaxation response that will be achieced[18]. Deep breathing can give the effect of increased oxygen saturation in the

od, cleansing carbon dioxide and other waste products, relaxing the muscles, secretion of endorphins, and stabilize heart rhythm that can correct abnormal condition due to the ension experienced seseorang[19]. This is supported by studies that have been conducted by Chung et al., that the relaxation breaths can reduce depression scores proven effective when practiced regularly for four weeks, but a significant decrease in depression scores can already be seen in just two weeks of deep breathing relaxation [20]. Hand also conduct research to identify the influence of the management of depression using yoga breathing (pranayama) conducted over 12 days twice a day with a duration of 45 minutes. The study showed a decrease in depression scores with p = 0.017 (p <0.05) [21]. This research was also supported by other studies to determine the effect of relaxation on depression. Effect of progressive muscle relaxation were carried out for 12 weeks in patients with endometriosis showed an improvement of depression after intervention (p <0.05) [22]. Relaxation can also significantly improve depression in patients with pulmonary arterial hypertension[23]. Addition, relaxation techniques and guided imagery can also be beneficial to reduce the level of depression in brachytherapy patients [24].

Analysis of the questionnaire was carried out in this study. After the analysis we found a decrease in score of the most profound and significant changes in sleep patterns on items with a value of p = 0.006 (p <0.05). These results are reinforced by other studies conducted by Rambod et al. to determine the effect of Benson relaxation techniques on the quality of sleep in patients on hemodialysis with significant results between the intervention group and the control by looking at a score of Pittsburgh Sleep Quality Index (PSQI) with p <0,05.[25]

These results indicate that the statistical Benson relaxation techniques affects the decrease depression scores. In this study, obtained by the difference in mean depression scores between the intervention group compared with the control group, with p = 0.004 (p <0.05). This shows the significant difference between the groups who received Benson relaxation techniques and a group that did not get Benson relaxation techniques. Relaxation techniques can stop the fight-or-flight hormones and lower levels of cortisol in the blood. Muscle relaxation can reduce tension and increase the body's resistance to depression. This method can work because the muscles are not able to relax and tense at the same time. The relaxation response is regulated by the parasympathetic nervous system which is opposite to the response of fight-or-flight by the sympathetic nervous system. The relaxation response causes drop in blood pressure, pulse rate, and muscle tension. The brain stops sending a distress signal to the brain stem and the body returns to pre-stress state level[26]. Given the mechanism will make the body become more relaxed and calm, so that relaxation can lower depression scores in this study.

Based on the description that has been described can be concluded that the combination of relaxation techniques with confidence patients have positive benefits to reduce depression. Relaxation is very effective work through the patient's physiological condition by lowering metabolism and strengthening heart contractions, respiration, blood pressure, as well as the release of epinephrine on the system simpatis[4]. This study shows that Benson relaxation techniques is significantly effective in reducing depression in hemodialysis patients. According to the Datak Benson, Benson relaxation works by inhibiting the activity of the sympathetic nervous which will reduce oxygen consumption by the body and makes the muscles relax, causing a feeling of calm and nyaman[18].

CONCLUSIONS AND SUGGESTIONS

Conclusion

Based on the research results can be concluded that Benson relaxation techniques in reducing depression in hemodialysis patients at RS PKU Muhammadiyah Yogyakarta.

Suggestion

1. Training for nurses in doing Benson relaxation techniques and make Benson relaxation techniques as procedure to reduce hemodialysis depression patients.
2. Teaching Benson relaxation techniques in hemodialysis patients to decrease depression. Patients can perform independently Benson relaxation techniques to cope with feelings of calm and provide a relaxing effect because the technique is very easy to do.

REFERENCES

1. Perhimpunan Nefrologi Indonesia. *Naskah Lengkap Simposium Nasional Peningkatan Pelayanan Penyakit Ginjal Kronik Masa Kini dan Indonesia Renal Registry Joglosemar*. Yogyakarta: PERNEFRI; 2012.
2. Smeltzer, C. S. & Bare, G. B. *Brunner & Suddarth's Texbook of Medical-Surgical Nursing11th Edition*. Philadelpia: Lippincot Williams & Wilkins; 2008.
3. Lestariningsih. Komplikasi Hemodialisis Akut. *Naskah Lengkap Workshop & Simposium Nasional Peningkatan Pelayanan Hemodialisis, Penyakit Ginjal dan Aplikasi Indonesian Renal Registry Joglosemar*, 2012; PERNEFRI: 74-78.
4. Mahdavi, A., Gorji, M. H., Gorji, Ali A. H., Yazdani, J., Ardebil, M. D. Implementing Benson's Relaxation Training in Hemodialysis Patients: Changes in Perceived Stress, Anxiety, and Depression. *Am J Med Sci*, 2013; 5: 536-40.
5. Tanvir, S., Butt, G., Taj, R. Prevalence of Depression and Anxiety in Chronic Kidney Disease Patients on Hemodialysis. *Ann. Pak. Inst. Med. Sci*, 2013;9(2): 64-67.
6. Cengic, B., Resic, H. Depression in Hemodialysis Patients. *Bosnia Journal of Basic Medical Sciences*, 2013; 10(1): S73-S78.
7. Hedayati, S. S., Minhajudin, A. T., Rush, A. J. Prevalence of Major Depressive Episode in CKD. *Am J Kidney Dis*, 2009; 54(3): 424-432.
8. Johns, R. F. *The Effect of a Brief Relaxation Response Intervention on Physiologic Markers of Stress in Patients Hospitalized with Coronary Artery Disease*.Georgia: ProQuest; 2009.
9. Dossey, B. M., Keegan, L. *Holistic Nursing A Handbook For Practice 5th Ed*. Canada: Jones and Bartlett; 2009.
10. Gregory, S. K., Snyder-Mackler, L. *Physical Therapies in Sport and Exercise*. Philadepia: Elsevier Health Sciences; 2007.
11. Inayati, N. *Pengaruh Teknik Relaksasi Benson Terhadap Tingkat Depresi Lanjut Usia Awal (Early Old Age) Umur 60-70 Tahun di UPT Pelayanan Sosial Lanjut Usia Jember* (skripsi). Jember: Universitas Jember. Not published. 2012.
12. Aryana, K. O., Novitasari, D. Pengaruh Tehnik Relaksasi Benson Terhadap Penurunan Tingkat Stres Lansia di Unit Rehabilitas Sosial Wening Wardoyo Ungaran. *J. Keperawatan Jiwa*, 2013; 1(2): 186-295.
13. Schreiner, I., Malcom, J. P. The Benefits of Mindfulness Meditation: Changes in Emotional States of Depression, Anxiety, and Stress. *Behaviour Change*, 2008; 25: 156-168.

4. Kandola, A. Meditation And Depression: A Novel Solution to The Burden of The Burden of Mental Illness in India?. *Resilience: Interdisiplinary Perspectives on Science and Humanitarianism*, 2010; 1: 77-91.
5. Shapiro, D., Cook, I. A., Davydov, D. M. Ottaviani, C., Leuchter, A. F., Abrams, M. Yoga as a Complementary Treatment of Depression: Effects of Traits and Moods on Treatment Outcome. *eCAM*, 2007; 4(4): 493-502.
6. Nazara, V. K. *Pengaruh Latihan Pasrah Diri Terhadap Perbaikan Gejala Depresi Pada Penderita Penyakit Paru Obstruksi Kronik* (tesis). Yogyakarta: Universitas Gadjah Mada. Not published. 2012.
7. Purwanto, S. Relaksasi Dzikir. *SUHUF*, 2006; 18(1): 39-48.
8. Datak, G. *Efektifitas Relaksasi Benson Terhadap Nyeri Pasca Bedah pada Pasien Transurethral Resection of The Prostate di Rumah Sakit Umum Pusat Fatmawati Jakarta* (tesis). Jakarta: Universitas Indonesia. Not published. 2008.
19. Smith, S. F., Duell, D. J., Martin, B. C. *Clinical Nursing Skills Basic to Advanced Skills 8th Edition*. New Jersey: Pearson; 2012.
20. Chung, L., Tsai, P., Liu, B., Chou, K., Lin, W., Shyu, Y., Wang, M. Home-based Deep Breathing For Depression in Patients with Coronary Heart Disease: A Randomised Controlled Trial. *International Journal of Nursing Studies*, 2010; 47: 1346-1353.
21. Handayani, T. N. Pengaruh Pengelolaan Depresi dengan Latihan Pernafasan Yoga (Pranayama) terhadap Perkembangan Proses Penyembuhan Ulkus Diabetikum di RS Pemerintah Aceh (tesis). Jakarta: Universitas Indonesia. Not published. 2010.
22. Zhao, L., Wu, H., Zhou, X., Wang, Q., Zhu, W., Chen, J. Effects of progressive muscular relaxation training on anxiety, depression and quality of life patients under gonadotrophin-releasing hormone agonist therapy. *European Jurnal of Obstetrics & Gynecology and Reproductive Biology*, 2012; 162: 211-215.
23. Li, Y., Wang, R., Tang, J., Chen, C., Tan, L., Wu, Z., Yu, F., Wang, X. Progressive Muscle Relaxation Improves Anxiety and Depression of Pulmonary Arterial Hypertension Patients. Evidance-Based *Complementary and Alternative Medicine*, 2015 http://dx.doi.org/10.1155/2015/792895
24. Leon-Pizarro, C., Gich, I., Barthe, E., Rovirosa, A., Farrus, B., Casas, F., Verger, E., Biete, A., Craveb-Bartle, J., Sierra, J., Arcusa, A. A randomized trial of the effect of training in relaxation and guided imagery techniques in improving psychological and quality-of-life indices for gynecologic and breast brachytherapy patients. *Psycho-Oncology*, 2007; 16: 971-979.
25. 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: 577-584.
26. Sutcliffe, J. *The Complete Book of Relaxation Techniques*. People's Medical Society. 2004.