
The Effect of Mindfulness Meditation on Mental Illness among Nurse in ICU and ICCU

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Abstract Critical conditions as one of the main focused in hospital care. This condition required rapid, comprehensive and quality management that carried out by nurses especially in the treatment of cardiovascular disease. This condition caused pressure on the nurse and causes stress. This stress can be overcome by complementary and alternative therapy in the form of mindfulness meditation. The purpose of this study was to identify the effect of mindfulness meditation therapy in reducing stress on nurses in ICU and ICCU. This study is quasi experiment research design through one group pretest posttest approach with respondents were 14. The results of this study indicated that there was decreased in stress before and after intervention with p -value=0000 and stress before and 1 week after intervention with p -value=0.001. Mindfulness therapy can reduce nurse stress.

Introduction

Critical conditions are one of the main focuses on hospital care. In general, patients in this condition will be admitted to the intensive care unit (ICU). ICU is a unit in the hospital that provides special care to patients (Jang, Park, Kim, & Chang, 2018). Life-threatening conditions include trauma, heart disease, stroke and others (Burke et al., 2013; Wihastuti, Widodo, Heriansyah, & Sari, 2015). WHO states that of the 56.9 million people who died in 2016, stroke and ischemic heart disease were the highest causes of death in the world, which reaches nearly 15.2 million people (WHO, 2018).

This condition requires immediate, comprehensive and quality care in supporting the patient's survival. This treatment is carried out by health workers, especially nurses (Motamedzadeh, Mahmoudi, Ebadi, & Nehrir, 2018). Nurses are health professions that focus on physical and mental health in caring for

individuals, families and communities (Craven & Jensen, 2013). In providing care for these emergency conditions, nurses must be focused and professional in their work so that stressors appear on nurses (Chuang, Tseng, Lin, Lin, & Chen, 2016).

Stressors that appear trigger a coping mechanism. The stress coping mechanism that occurs is different for each nurse. A good stress coping mechanism causes a positive stress adaptation response. However, poor stress coping mechanisms causes negative stress adaptation response (Deklava, Circenis, & Millere, 2014). This condition causes compassion fatigue (Sacco, Czurzynski, Harvey, & Ingersoll, 2015). Compassion fatigue triggers physical and psychological fatigue experienced by nurses in the form of stress (Kelly & Lefton, 2017). Stress is an individual response to problems that occur due to changes in physical, mental and emotional. This condition causes emotional or

physical tension (Townsend, 2014; Videbeck, 2011). This problem can be overcome by mindfulness meditation.

Mindfulness meditation therapy is therapy that gives special attention to situation that aims to create a neutral condition (Chiesa, Calati, & Serretti, 2011). This therapy uses a therapeutic approach to overcome emerging problems such as physical problems, behaviors and emotional disorder. Several studies shows mindfulness meditation therapy overcome emerging psychological problems such as anxiety, stress and depression (van der Riet, Levett-Jones, & Aquino-Russell, 2018; Winnebeck, Fissler, Gärtner, Chadwick, & Barnhofer, 2017). Mindfulness meditation therapy focuses on meditation and breathing control in overcoming psychological problems (Soto-Vásquez & Alvarado-García, 2017).

The results of preliminary study conducted at RSUD Dr. Soedarso Pontianak found that patients treated at ICCU were unstable with ventilator, syringe pump and infuse pump. The conditions of ICU and ICCU rooms were filled with patients, especially stroke and diabetes mellitus patients for ICU room and coronary heart patients for the ICCU room. The ratio of the number of nurses to patients in each room 1: 2 or 1: 3 depends on the nurse's service schedule. Interviews conducted by researchers found 10 nurses were anxious and tense in caring the patient, especially when the patient was experiencing an emergency condition. Pressure is also felt due to the demands of the work from

the supervisor and the complaints of the family regarding the patient's condition. This condition causes nurses to experience stress symptoms. The purpose of this study is to identify the effect of mindfulness meditation therapy on reducing nurse's stress in ICU and ICCU.

Materials and methods

This study used quasy experiment design by one group pretest-posttest approach. Respondents in the research were 14 nurses from RSUD dr. Soedarso Pontianak. The sampling technique used purposive sampling technique. There were 4 inclusion criteria in this study, especially nurses working in the ICU and ICCU rooms, have worked for 2 years in the hospital and experienced stress with value ≥15 and were willing to become respondents.

Mindfulness meditation therapy gave to respondents based on guidance from mindfulness therapy (Muesse, 2013). This therapy gave within 10 minutes in 2x2 meter room. Nurse stress was measured using the DASS 21 questionnaire (Antony, Bieling, Cox, Enns, & Swinson, 1998). Nurse stress measurement carried out before, after intervention and 1 week of intervention. This research conducted on November 31 to November 9, 2018. This research carried out after obtaining ethical clearance from the ethics committee of Poltekkes Kemenkes Pontianak with No. 053 / KEPK-PK.PKP / X / 2018. The bivariate analysis used Friedman Post Hoc Wilcoxon test.

Results and discussions

Table 1. Characteristics of Respondent Based on Age and Stress

| Variable | N | Mean | Median | Min-Max | SD |
|------------------------------------|----|-------|--------|---------|-------|
| Age | 14 | 36.5 | 36 | 25-50 | 6.87 |
| Stress before intervention | 14 | 18.86 | 18 | 16-24 | 3.009 |
| Stress after intervention | 14 | 15.43 | 14.00 | 12-22 | 2.875 |
| Stres after 1 week of intervention | 14 | 15.14 | 15 | 12-18 | 2.316 |

Table 1 shows the youngest respondents were 25 years old and the oldest respondents were 50 years old. The highest score of stress before intervention was 24 and the lowest was 16. The highest score of stress after intervention was 22 and the lowest was 12. The highest score of anxiety 1 week after intervention was 18 and the lowest was 12. The data presents in table 1.

Table 2. Characteristics of Respondent Based on Characteristics of Gender, Education, Competence, Length of Work and Working Room

| Variables | Category | f | (%) |
|-----------------|-------------|----|------|
| Gender | Male | 2 | 14.3 |
| | female | 12 | 85.7 |
| Level education | Diploma 3 | 14 | 100 |
| | Bachelor+RN | - | - |
| Competence | BT&CLS | 12 | 85.7 |
| | PPGD | 2 | 14.3 |
| Length of work | 2 years | 14 | 100 |
| | > 2 years | | |
| Working Room | ICU | 9 | 64.3 |
| | ICCU | 5 | 35.7 |

Table 2 explains the most dominant gender was female with 12 respondents (85.7%). The most dominant level education in nurse was diploma 3 with 14 respondents (100%). The most dominant nurse competency was BT&CLS with 12 respondents (87.54%). The most dominant working time was 2 years with 14 respondents (100%). The most dominant nurse working room was ICU with 9 respondents (64.3%).

Table 3. Friedman Post Hoc Wilcoxon test

| Measurements | Median (Min-max) | Value (p) |
|------------------------------------|------------------|-----------|
| Stress Before Intervention | 18 (16-24) | |
| Stres After Intervention | 14 (12-22) | 0.000 |
| Stres After 1 Week of Intervention | 15 (12-18) | |

Post Hoc before vs after intervention $p=0.000$, before vs after 1 week of intervention $p=0.001$, after intervention vs after 1 week of intervention $p=0.516$

Table 3 shows $p\text{-value}=0.000$ ($p<0.05$) so there were changes in stress before, after and 1 week after given mindfulness meditation. After post hoc Wilcoxon test, there was a dominant comparison of stress between before and after therapy with $p\text{-value}=0.000$. There was changes in stress before and after 1 week of intervention with $p\text{-value}=0.001$. There were no changes in stress after intervention and 1 week after intervention with $p\text{-value}=0.516$.

Based on the result, mindfulness meditation reduces stress symptoms with $p\text{-value}=0.000$, 0.001. Mindfulness therapy was the latest therapeutic approach that used in clinical conditions to treat physical, behavioral and emotional disorders (Grecucci, Pappaianni, Siugzdaite, Theuninck, & Job, 2015).

Mindfulness meditation therapy consists of three components such us increasing attention control, increasing emotional regulation and changing self-awareness (increasing body awareness (Tang, Tang, & Posner, 2016).

Attention divided into three different components especially alert (readiness in the

face of future stimulus, which consists of the resulting tonic effect and phasic effects caused by brain changes due to warning signals or targets), oriented and focused on the problem. Many meditation traditions emphasized to improve attention at the beginning of therapy. Control of attention during the meditation process made it easier for individuals to achieve a good therapeutic process (Tang, Holzel, & Posner, 2015).

Emotional regulation of control recommended to get the desired effects of mindfulness meditation therapy. Emotional regulation referred to conditions that affected emotions when emotions appeared, how long emotion occurred and how these emotions experienced and expressed. The positive effects of mindfulness meditation on regulation of emotions decreased in emotional disorders, physiological reactivity and emotions after response to stressor (Tang et al., 2015).

Self awareness related by self concept. According to Buddhist philosophy, identification regarding self-concept caused psychological distress. Through increased awareness, mindfulness meditation was able to facilitate individuals in identifying themselves with the phenomena that occurred. Good identification increased awareness of the phenomena that occurred. Finally, the psychological pressures that arise in themselves could be handled properly (Tang et al., 2015).

The effects of mindfulness therapy were explained by changes in the two stress processing pathways in the brain in the form of an increase in the prefrontal regulator part which inhibited activity in the stress processing area and has a direct effect on the modulation of reactivity in the stress processing part of the brain. The effect of mindfulness explained an increased process in stress-regulated areas of the prefrontal cortex (for example, the ventral and dorsal regions of the lateral prefrontal cortex), especially in contexts where therapists

asked to make emotional arrangements. In addition, increased emotional regulation in the therapeutic process activated prefrontal cortical which occurred improvement in psychological condition (Tang et al., 2015). However, the results of this study explain that there were no significant changes after 1 week of intervention, in which the researcher did not provided further therapy in that period. This research was similar with Banks, Welhaf & Srour stated that respondents did not showed a significant effect of change when respondents did not continued the therapy process again (Banks, Welhaf, & Srour, 2015). The effects of changes in significant psychological disorders can be felt if routinely carried out continuously for 7-8 weeks (Jha, Stanley, Kiyonaga, Wong, & Gelfand, 2010; Morrison, Goolsarran, Rogers, & Jha, 2014). For 1 week without being given intervention, it was recreated stress symptoms, especially health workers, such as nurses who have a high workload. This high workload of nurses created stressors that cause psychological disorders in the form of anxiety or stress (van Mol, Kompanje, Benoit, Bakker, & Nijkamp, 2015). Therefore, continuous therapy needed in preventing stress symptoms.

Conclusions

Based on the results of this study, mindfulness meditation therapy reduced stress after giving intervention. There were differences in stress changes in mindfulness meditation therapy before and after therapy. In the hospital, mindfulness meditation can use by nurses or patient to reduce stress or other psychological disorders.

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References

- Antony, M., Bieling, P., Cox, B., Enns, M., & Swinson, R. (1998). Psychometric Properties of the 42-Item and 21-Item Versions of the Depression Anxiety Stress Scales in Clinical Groups and a Community Sample. *Psychological Assessment, 10*(2), 176-181.
- Banks, J. B., Welhaf, M. S., & Srour, A. (2015). The protective effects of brief mindfulness meditation training. *Consciousness and Cognition, 33*, 277-285. doi:https://doi.org/10.1016/j.concog.2015.01.016
- Burke, J. F., Stulc, J. L., Skolarus, L. E., Sears, E. D., Zahuranec, D. B., & Morgenstern, L. B. (2013). Traumatic brain injury may be an independent risk factor for stroke. *Neurology, 81*(1), 33-39. doi:10.1212/WNL.0b013e318297eefc
- Chiesa, A., Calati, R., & Serretti, A. (2011). Does mindfulness training improve cognitive abilities? A systematic review of neuropsychological findings. *Clin Psychol Rev, 31*(3), 449-464. doi:10.1016/j.cpr.2010.11.003
- Chuang, C. H., Tseng, P. C., Lin, C. Y., Lin, K. H., & Chen, Y. Y. (2016). Burnout in the intensive care unit professionals: A systematic review. *Medicine (Baltimore), 95*(50), e5629. doi:10.1097/MD.0000000000005629
- Craven, R., & Jensen, S. (2013). *Fudamental of nursing human health and function*. China: Wolter Kluwer Health.
- Deklava, L., Circenis, K., & Millere, I. (2014). Stress Coping Mechanisms and Professional Burnout among Latvian Nurses. *Procedia - Social and Behavioral Sciences, 159*, 261-267. doi:https://doi.org/10.1016/j.sbspro.2014.12.369
- Grecucci, A., Pappaianni, E., Siugzdaite, R., Theuninck, A., & Job, R. (2015). Mindful Emotion Regulation: Exploring the Neurocognitive Mechanisms behind Mindfulness. *Biomed Res Int, 2015*, 670724. doi:10.1155/2015/670724
- Jang, S. K., Park, W. H., Kim, H.-I., & Chang, S. O. (2018). Exploring nurses' end-of-life care for dying patients in the ICU using focus group interviews. *Intensive and Critical Care Nursing, 2018*.09.007. doi:https://doi.org/10.1016/j.iccn.2018.09.007
- Jha, A. P., Stanley, E. A., Kiyonaga, A., Wong, L., & Gelfand, L. (2010). Examining the protective effects of mindfulness training on working memory capacity and affective experience. *Emotion, 10*(1), 54-64. doi:10.1037/a0018438
- Kelly, L. A., & Lefton, C. (2017). Effect of Meaningful Recognition on Critical Care Nurses' Compassion Fatigue. *Am J Crit Care, 26*(6), 438-444. doi:10.4037/ajcc2017471
- Morrison, A. B., Goolsarran, M., Rogers, S. L., & Jha, A. P. (2014). Taming a wandering attention: short-form mindfulness training in student cohorts. *Front Hum Neurosci, 7*, 897. doi:10.3389/fnhum.2013.00897
- Motamedzadeh, M., Mahmoudi, H., Ebadi, A., & Nehrir, B. (2018). Nursing Care Quality in the Cardiac Care Unit: A Cross-Sectional Study. *Crit Care Nurs J, 11*(2), e67570. doi:10.5812/ccn.67570

- Muesse, M. (2013). *Practicing mindfulness: An introduction to meditation*. Virginia: The Great Courses.
- Sacco, T. L., Ciurzynski, S. M., Harvey, M. E., & Ingersoll, G. L. (2015). Compassion Satisfaction and Compassion Fatigue Among Critical Care Nurses. *Crit Care Nurse*, 35(4), 32-43; quiz 31p following 43. doi:10.4037/ccn2015392
- Soto-Vásquez, M. R., & Alvarado-García, P. A. A. (2017). Aromatherapy with two essential oils from Satureja genre and mindfulness meditation to reduce anxiety in humans. *Journal of Traditional and Complementary Medicine*, 7(1), 121-125. doi:https://doi.org/10.1016/j.jtcme.2016.06.003
- Tang, Y.-Y., Tang, R., & Posner, M. I. (2016). Mindfulness meditation improves emotion regulation and reduces drug abuse. *Drug and Alcohol Dependence*, 163, S13-S18. doi:https://doi.org/10.1016/j.drugalcdep.2015.11.041
- Tang, Y. Y., Holzel, B. K., & Posner, M. I. (2015). The neuroscience of mindfulness meditation. *Nat Rev Neurosci*, 16(4), 213-225. doi:10.1038/nrn3916
- Townsend, M. (2014). *Psychiatric mental health nursing (8th ed.)*. Philadelphia: F.A Davis Company.
- van der Riet, P., Levett-Jones, T., & Aquino-Russell, C. (2018). The effectiveness of mindfulness meditation for nurses and nursing students: An integrated literature review. *Nurse Education Today*, 65, 201-211. doi:https://doi.org/10.1016/j.nedt.2018.03.018
- van Mol, M. M., Kompanje, E. J., Benoit, D. D., Bakker, J., & Nijkamp, M. D. (2015). The Prevalence of Compassion Fatigue and Burnout among Healthcare Professionals in Intensive Care Units: A Systematic Review. *PLoS One*, 10(8), e0136955. doi:10.1371/journal.pone.0136955
- Videbeck, S. (2011). *Psychiatric-mental health nursing. 5th edition*. Philadelphia: Lippincott Williams & Wilkins.
- WHO. (2018). *The top 10 causes of death*. Retrieved from Swiss:
- Wihastuti, T. A., Widodo, M. A., Heriansyah, T., & Sari, N. A. K. (2015). Study of the inhibition effect of ethanolic extract of mangosteen pericarp on atherogenesis in hypercholesterolemic rat. *Asian Pacific Journal of Tropical Disease*, 5(10), 830-834. doi:https://doi.org/10.1016/S2222-1808(15)60940-9
- Winnebeck, E., Fissler, M., Gärtner, M., Chadwick, P., & Barnhofer, T. (2017). Brief training in mindfulness meditation reduces symptoms in patients with a chronic or recurrent lifetime history of depression: A randomized controlled study. *Behaviour Research and Therapy*, 99, 124-130. doi:https://doi.org/10.1016/j.brat.2017.10.005