

# EFFECTIVENESS OF MINDFULNESS IN REDUCING ACADEMIC STRESS IN NURSING STUDENTS: A SYSTEMATIC REVIEW

Badrul Munif<sup>1\*</sup>, Susi Oktaviana<sup>2</sup>, Wahyu Adri Wirawati<sup>2</sup>

<sup>1</sup>Nursing Science Study Program, STIKES Banyuwangi, East Java, Indonesia

<sup>2</sup>Midwifery Vocation Study Program, STIKES Banyuwangi, East Java, Indonesia

\*Corresponding Author's Email: munifbadrul2@gmail.com

## ABSTRACT

**Introduction:** Academic stress among nursing students increases every year. It is influenced by the dense of academic burden and clinical practice. Because of these conditions, students cannot carry out the study process properly and it leads to poor quality of graduates. Managing the academic stress as soon as possible in nursing students is a necessity. An effective intervention is needed to reduce academic stress in nursing students. Mindfulness is an exercise to build self-awareness in accepting the conditions experienced at present, thus someone is able to build focus in solving the problems encountered. Through a systematic review, this research analyzed the effect of mindfulness as an effort to reduce stress in nursing students. **Methods:** Articles search was conducted by using PICOT framework in EBSCO, Science Direct, and Pub Med. The search was limited to full text articles published from 2009 to 2017. It was obtained six International Journal Articles and subsequently a systematic review was conducted. **Results:** Based on the search results, there were obtained two articles that used high quality RCT designs and four articles not used RCT designs. All articles used an average length of intervention of 8 weeks. The entire journal articles proved that mindfulness-based intervention can reduce stress. **Conclusion:** This systematic review highly recommends mindfulness-based intervention to reduce academic stress on nursing students.

**Keywords:** *Mindfulness, Reducing, Academic Stress, Students, Nursing*

## INTRODUCTION

Academic stress among nursing students increases every year. It is affected by the dense academic burden and students' inadequate preparation when conducting clinical practice, which reduces their academic quality (Song & Lindquist, 2015). Stress is a psychosocial factor that can affect the educational process both academic process or during clinical practice (Zakiah, 2016). A literature study found that nursing students show tendency to experience stress during classroom activity and field practice. It was caused by many academic assignments, and lack of cognitive and psychomotor aspects in clinical practice (Chan *et al.*, 2011).

Zakiah (2016) found that 50% of nursing students experienced moderate to severe academic stress. If this

condition is not treated immediately, it will lead to anxiety and depression (Mahmoud *et al.*, 2012). Academic stress is a major cause of psychosocial problems in students which causes academic failure (APA, 2012). In order to be ready to deal with stressors during clinical practice, the nursing students have to learn how to manage stress well, thus they are able to improve their adaptive coping abilities (Kang, Choi & Ryu, 2009).

Mindfulness is an exercise in building self-awareness to accept the conditions experienced at present, meaning that someone is able to set goals and to focus in solving problems that he encountered (Kabat-Zinn, 2012). The purpose of mindfulness is to build self-awareness, to accept any conditions faced at present with full acceptance and to build focus in solving

problems (Munif, Poeranto & Utami, 2019a). Having the ability to manage stressors as early as possible can increase students' adaptive coping toward the stress response experienced by the body.

Through this systematic review, the researchers intended to discover the effectiveness of mindfulness meditation in reducing academic stress in nursing students.

## METHODOLOGY

Systematic Review was used as this research method. The articles were sought by applying several inclusion criteria, exclusions criteria and keywords, then a review on the articles was conducted.

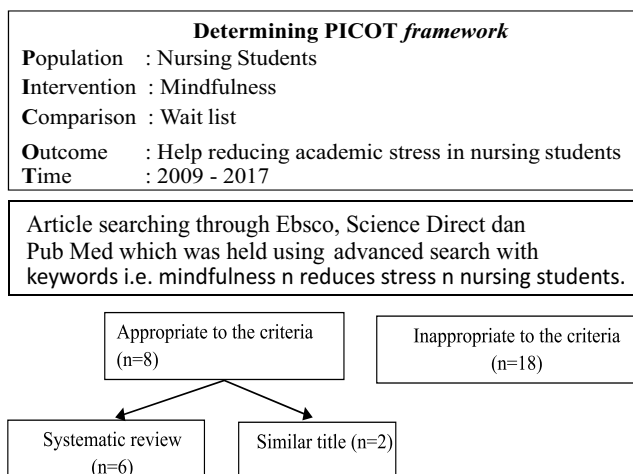
### Inclusion and Exclusion Criteria

a. The inclusion criteria were: Mindfulness intervention for nursing students who experienced academic stress.

b. The exclusion criteria were: articles that do not have full text pdf, intervention that is not mindfulness therapy, respondents that were not included in the inclusion criteria.

### Literature Search Strategy

Articles were searched by using PICOT framework (Population: nursing students, Intervention: Mindfulness, Comparison: Outcome: Help reducing academic stress in Nursing students, Time: 2009-2017). The articles were searched in EBSCO, Science Direct and Pub Med using advanced search with mindfulness, reduce stress and nursing students as the keywords. After the searching process, it was obtained six article titles in EBSCO, eight titles in Science Direct and twelve titles in Pub Med. After the articles were collected, the researcher did screen to get full text PDF articles that were published from 2009-2017. At this stage, it was found two articles from EBSCO, two articles from Science Direct and four articles from PubMed. Next, the article titles that were considered in accordance with the research objectives were listed and the researchers conducted the second screening to determine whether the titles have similarity with one each other. From the second screening, it was obtained two same article titles. At the final step, the researchers then conducting further screening by doing deeper reading. It was obtained six best journal articles which met the inclusion criteria.



**Figure 1: PICOT Framework**

### Study Quality Assessment Methods

Tools which were developed by the Critical Appraisal Skills Program (CASP) were used by researchers to assess the quality of studies. It was accessed from [www.casp-uk.net](http://www.casp-uk.net). Critical Appraisal is conducted by one researcher. The assessment of quality systematic review was conducted to analyzed the extent of the quality of the articles used.

### Data Extraction

Data extraction is done by one researcher. The data were extracted by seeing the contents of the article based on five themes, namely: Author, JBI Level, Purpose, Intervention Model, Method, Major Finding, Weakness and Strength.

### Data Synthesis

The data will be displayed narratively. Data presentation included article characteristics, the effectiveness of mindfulness-based therapy, and the results after mindfulness-based therapy administration

## RESULTS

### Study Characteristics

Based on the search results, it was obtained two articles using high quality RCT (Randomized Control Trial) design, one article using non-equivalent study, one article using exploratory study, and two articles using quasi-experimental. Those articles were published between 2009- 2017. MBSR (Mindfulness Based Stress Reduction) therapy was carried out for eight weeks in nursing students and nursing students who had just been graduated. It proved that mindfulness therapy can reduce stress.

**Table 1: Analysis of Systematic Review Journals**

Author & Year	Level JBI	Purpose	Intervene	Method (Design, Sample, Data Analysis, Instrument)	Major Finding	Weakness	Strength
1. Song & Lindquist, 2015	Level 1	Assessing the effectiveness of MBSR on depression, anxiety, and stress in nursing students in Korea.	MBSR, 8 Weeks	Randomized Controlled Trial (RCT), the sample were nursing students n = 44 and grouped randomly into Intervention group (MBSR) n = 21 and control group (WL) n = 23. The data were collected using DASS-21 questionnaire and Mindfulness Attention Awareness Scale (MAAS). The data were analyzed by using Chi-square test and t- tests, Analysis of covariance(ANCOVA).	There was a significant difference between the intervention group (MBSR) and the control group (WL). The intervention group (MBSR) showed significant reduction on depression, anxiety and stress.	The results of this study cannot be generalized to other samples, because the samples are small and non-representative. Most of the participants are women so it cannot be generalized to male nursing students.	This research used RCT method, thus the quality of the research results is highly tested.
2. Chen, Yang, Wang, Zhang, 2013	Level 1	Evaluating the effects of brief mindfulness meditation on the symptoms of stress, anxiety, depression and systolic blood pressure in Chinese nursing students	MM for 7 consecutive days	Randomized Controlled Trial (RCT). The sample were Chinese nursing students n = 60 that were grouped randomly into intervention group (MM) n = 30 and control group (WL) n = 30. Further analysis to get socio - demography characteristics in the groups used Independent t- tests and Analysis of Variance (ANOVA).	The difference between the scores of Stress Scale, Self-Rating Anxiety scale of pre- and post- treatment was significantly greater in the intervention group, but there was no similar effect on the score of Self-Rating Depression Scale.	The control group did not have support system and coping system as in the intervention group; thus, it was difficult to distinguish the decrease that occurred whether it was a result of the effects of pure MM therapy or from the placebo effect. The study was limited by the sample that were dominated by women therefore that it cannot be generalized to male nursing students. There was no measurement of awareness level, thus it cannot determine whether the awareness variable increased due to intervention or not. The intervention duration was short and the respondents did not practice the intervention at home.	This research used RCT method thus the quality of the research results is highly tested. The interview process was performed by a licensed psychotherapist who screened all participants to find out the factors that can affect anxiety, stress and depression therefore it can affect the homogeneity of the selection of respondents.
3. Kang, Choi, Ryu, 2009	Level 3	Tested the effectiveness of stress coping programs based on mindfulness meditation on stress	MM, 8 weeks	Pretest - posttest non-equivalent study. The sample were Korean nursing students n = 41 that were divided randomly into 2 groups; intervention (MM) n= 20; and control (WL) n =21. Descriptive analysis was used for the age, blood pressure, and lifestyle.	Results from both groups showed there were significant differences in mean value of stress and anxiety; and no significant difference in value of depression	Respondents of this research was not homogeneous. The number of subjects were not large, and some subjects were excluded, might suggest problems with verification.	The results of this study supported the previous studies. Similarities in the effects of the intervention and the results.
4. Spadaro & Hunker, 2016	Level 4	Exploring the effects of online mindfulness meditation intervention in long distance nursing students on stress, anxiety and depression	MM online, 8 weeks	Descriptive exploratory study, n = 26, demographic data were analyzed using means and standard deviations. The number of frequencies and percentages described categorical variables. Comparisons between groups were tested using Fisher exact test (2 sides). Statistics analysis performed by using paired t- test and Wilcoxon Sign Rank, and nonparametric test. Further analysis on stress and mood was performed using ANOVA .	The results showed that stress, anxiety and depression were significantly reduced.	There were some respondents who were technologically backward, thus it affected the process of intervention or treatment. There was no evidence that the researchers overcame the problem.	It is potential for educators to reduce stress via online.

5. Barbosa, Raymond, Zlotnick, Wilk, Toomey & Mitchell, 2013	Level 2	Test the effect of MBSR training on stress, and build empathy for students from five graduate health education programs at Samuel Merritt University.	MBSR 8 weeks	Quasi-experimental trial. The sample were graduate nursing students n = 28 and were divided into two groups randomly; intervention group (MBSR) n = 13 and control group (WL) n = 21. The data were analyzed using SAS version 9.0, Chi-square, Independence t-test (or Fisher's Exact test for tables with small expected cell sizes).	The results showed that there was a significant difference on stress reduction between the intervention group and the control group.	Small sample size and quasi experimental. There were three students who were unable to complete the intervention due to personal constraints, reducing the number of respondents in the experimental group.	It supports the hypothesis that MBSR therapy can reduce stress and increase empathy for nursing students.
6. Wang, Wang, Shih, Chan, Fan, Hu, 2017	Level 2	Discovering the effect of MBSR intervention on stress levels in new graduate nurses.	MBSR 8 weeks	Quasi-experimental, the sample were nursing students who had just graduated n = 64 and were divided into two groups randomly; intervention group (MBSR) n = 31 and control group (WL) n = 35. Descriptive statistical analysis was performed for the dependent variables of stress and the result was evaluated as an ordinal variable (T0 to T4). For each visit, stress scores were analyzed by using Kruskal- Wallis test to evaluate whether the scores were significantly different between the intervention and control groups. Repeated measurable variables (stress scores and awareness values) were analyzed using Generalized Estimation Equation (GEE) to evaluate the overall effects of interventions and interactions between interventions and time of attendance.	The results showed that there was a significant difference on stress reduction between the intervention group and the control group.	The study was not randomly conducted because it is not a Randomized Clinical Trial (RCT). There was imbalance between control and intervention groups.	It supports the hypothesis that MBSR therapy can reduce stress and increase empathy for nursing students.

**The Effectiveness of Mindfulness toward Stress Level Reduction**

Song & Lindquist (2015) conducted a study to examine the effect of MBSR on depression, anxiety, and stress in Korean nursing students with a Randomized Controlled Trial (RCT) design. The population were 50 nursing students who experienced depression, anxiety, and stress. An analysis was conducted to specify samples using Depression, Anxiety and Stress Scale-21 (DASS-21) questionnaire and Korean version of Mindfulness Attention Awareness Scale (MAAS). It was only obtained 44 samples because six students did not fill the questionnaire. The 44 samples then were randomly divided into 21 intervention groups (MBSR) and 23 control groups (WL). The duration of intervention was 2 hours/week for 8 weeks of intervention. The result was then analyzed using Chi-square statistical tests and t-tests, Analysis of Covariance (ANCOVA). The results obtained showed that MBSR participants had significant depression, anxiety and stress reduction.

The same results were obtained by Chen Yu, Xueling Yang, Liyuan Wang, and Xiaoyuan Zhang in a study conducted to evaluate the effects of brief mindfulness meditation on symptoms of stress, anxiety, depression and systolic blood pressure in Chinese nursing students. The study used Randomized Controlled Trial (RCT) design, with population of 60 nursing students that experienced symptoms of stress, anxiety, depression, and systolic blood pressure. An analysis was conducted on 30 control groups and 30 intervention groups, with the duration of intervention of 7 days consecutively for 30 minutes/day. The results showed that the value of stress level, Self-Rating anxiety pre-and post- treatment were significantly greater in the intervention group than in the control group. The systolic blood pressure also decreased more on the intervention group (Chen *et al.*, 2013).

The study mentioned above was also supported by a research conducted by Yune Sik Kang, So Young Choi and Eunjung Ryu. They tested the effectiveness of stress coping programs based on mindfulness meditation on stress, anxiety, and depression. The number of nursing students were 41 who were divided into 21 treatment

groups and 20 control groups. The treatment was carried out for 8 weeks, 1 to 2 hours each meeting. The results showed a significant reduction in stress (Kang, Choi & Ryu, 2009).

Another research, which aims to explore the effects of online mindfulness meditation interventions on stress, anxiety and depression in long distance nursing students. The results showed that stress, anxiety and depression were significantly reduced (Spadaro & Hunker, 2016). A research conducted by Barbosa *et al.*, (2013) was a quasi-experimental study that intended to examine the effect of MBSR interventions on stress and build students' empathy from nursing graduate programs at Samuel Merritt University. The results showed stress reduction in the intervention group. The intervention also can increase empathy in students. Likewise, with the previous research, Wang *et al.*, (2017) found that the MBSR had a significant effect on reducing the stress of newly graduated nursing students.

## DISCUSSION

Zakiyah (2016) said that academic stress is an initial response from emotional and mental disorders in the students. If these conditions are not treated immediately, it will cause anxiety disorders and depression which results in failure in study (Mahmoud *et al.*, 2012). Literature study found that nursing students tend to experience stress during the academic process and clinical practice. This is caused by many academic assignments, and lack of knowledge and skills when entering the clinical practice (Chan *et al.*, 2011).

Another affecting factor is age. A student is an adult individual. In this stage of age, the student tends to use maladaptive coping when dealing with stressors, thus he easily experiences stress (Munif, Poeranto & Utami, 2019 b). Maladaptive coping includes ignoring stressors, avoiding others, blaming others, consuming alcohol, stopping studies and the most severe is suicide (McCarthy *et al.*, 2018).

Building acceptance of academic burdens and focusing on completing academic assignments is an adaptive coping that makes students free from academic stress (Krisdianto & Mulyanti, 2015). Dealing with stress on students, there are several solutions suggested. One of them is mindfulness. This therapy aims to build self-awareness, to accept whatever conditions faced at present with full acceptance and to build focus in solving problems (Munif, Poeranto & Utami, 2019a).

The statement based on the journal articles that had been already reviewed by the researchers. In those six articles, the results showed that mindfulness-based therapy can reduce academic stress in nursing students.

## CONCLUSION

Based on the six studies that had been reviewed, it can be concluded that Mindfulness Based Stress Reduction (MBSR) was used as the intervention in dealing with stress in nursing students. The interventions had been conducted for 6-8 weeks, 5-35 minutes for each treatment. The studies showed significant result, mindfulness can reduce stress. Further researches are needed to determine the effectiveness of mindfulness-based therapy models compared with other stress-reducing psychotherapy.

Mindfulness is a therapy that is based on someone's ability in realizing something that happens, not refusing it, and being able to solve it. Nursing students who have many academic burdens and have practical clinic to do primarily apply this therapy to reduce their stress level.

## Conflict of Interests

The authors declare that they have no conflict of interest.

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## REFERENCES

- American Psychological Association (APA). (2012). Guidelines for Lesbian, Psychological Practice with Gay, and Bisexual Clients. *American Psychologist*, 67(1), pp 10-42.
- Barbosa, P., Raymond, G., Zlotnick, C., Wilk, J., Toomey, R. & Mitchell, J. (2013). Mindfulness-based stress reduction training is associated with greater empathy and reduced anxiety for graduate healthcare students. *Education for Health: Change in Learning and Practice*, 26(1), pp 9-14.
- Chan, M.F., Creedy, D.K., Chua, T.L. & Lim, C.C. (2011). Exploring the psychological health related profile of nursing students in Singapore: A cluster analysis. *Journal of Clinical Nursing*, 20(23-24), pp 3553-3560.

- Chen, Y., Yang, X., Wang, L. & Zhang, X. (2013). Nurse Education Today: A randomized controlled trial of the effects of brief mindfulness meditation on anxiety symptoms and systolic blood pressure in Chinese nursing students. *Nurse Education Today*, 33(10), pp 1166-1172.
- Kabat-Zinn, J. (2012). Mindfulness and Democracy. *Mindfulness*, 3(3), pp 249-250.
- Kang, Y.S., Choi, S.Y. & Ryu, E. (2009). The effectiveness of a stress coping program based on mindfulness meditation on the stress, anxiety, and depression experienced by nursing students in Korea. *Nurse Education Today*, 29(5), pp 538-543.
- Krisdianto, A. & Mulyanti, M. (2015). Mekanisme Koping dengan Tingkat Depresi pada Mahasiswa Tingkat Akhir. *Journal Ners Dan Kebidanan Indonesia*, 3(2), pp 71.
- Mahmoud, J.S.R., Staten, R.T., Hall, L.A. & Lennie, T.A. (2012). The relationship among young adult college students' depression, anxiety, stress, demographics, life satisfaction, and coping styles. *Issues in Mental Health Nursing*, 33(3), pp 149-156.
- McCarthy, B., Trace, A., O'Donovan, M., Brady-Nevin, C., Murphy, M., O'Shea, M. & O'Regan, P. (2018). Nursing and midwifery students' stress and coping during their undergraduate education programmes: An integrative review. *Nurse Education Today*, 61(November 2017), pp 197-209.
- Munif, B., Poeranto, S. & Utami, Y.W. (2019a). Effects of Islamic Spiritual Mindfulness on Stress among Nursing Students. *Nurse Media Journal of Nursing*, 9(1), pp 69-77.
- Munif, B., Poeranto, S. & Utami, Y.W. (2019b). The Effect of Mindfulness Caring Against the Stress in Nursing Students in Taking on Thesis. *International Journal of Psychiatric Nursing*, 5(2), pp 55-59.
- Song, Y. & Lindquist, R. (2015). Effects of mindfulness-based stress reduction on depression, anxiety, stress and mindfulness in Korean nursing students. *Nurse Education Today*, 35(1), pp 86-90.
- Spadaro, K.C. & Hunker, D.F. (2016). Exploring the Effects of an online asynchronous mindfulness meditation intervention with nursing students on Stress, Mood, and Cognition: A Descriptive Study. *Nurse Education Today*, 39, pp 163-169.
- Wang, S.C., Wang, L.Y., Shih, S.M., Chang, S.C., Fan, S.Y. & Hu, W.Y. (2017). The effects of mindfulness-based stress reduction on hospital nursing staff. *Applied Nursing Research*, 38, pp 124-128.
- Zakiyah, Z. (2016). Gambaran Karakteristik, Tingkat Stres, Ansietas, Dan Depresi Pada Mahasiswa Keperawatan Yang Sedang Mengerjakan Skripsi. *Jurnal Impuls*, 2(2), pp 140-145.