INSPIRA: Indonesian Journal of Psychological Research
https://journal.iainlangsa.ac.id/index.php/inspira

RESEARCH ARTICLE

Dhikr relaxation for middle-aged hypertensive patients to reduce insomnia

https://doi.org/10.32505/inspira.v6i1.10858

Fuad Nashori[1], Nadea Zulfa Khairunnisa[2], Khairunnisa Fitri[3] Gita Anindya Puteri[4]

[1] Department of Psychology, Universitas Islam Indonesia, Special Region of Yogyakarta, Indonesia
[2] Department of Psychology, Universitas Islam Mulia Yogyakarta, Special Region of Yogyakarta, Indonesia
[3] Department of Psychology, Universitas Islam Negeri Ar-Ranity, Aceh, Indonesia
[4] Department of Psychology, Universitas Islam Indonesia, Special Region of Yogyakarta, Indonesia

Corresponding Author:
Fuad Nashori (email: fuadnashori@uii.ac.id)

ABSTRACT

Insomnia is a prevalent comorbidity among middle-aged individuals with hypertension. Dhikr relaxation, an Islamic spirituality-based intervention, has been proposed as a non-pharmacological approach to improve sleep quality. This study aimed to examine the effectiveness of dhikr relaxation therapy in reducing insomnia among middle-aged hypertensive patients. The study involved 18 participants aged 40–59 years diagnosed with stage 2 hypertension. Participants were randomly assigned to either an experimental group (n = 9) that received dhikr relaxation therapy or a control group (n = 9) that received no treatment. Insomnia was measured using the Athens Insomnia Scale (AIS) at the posttest and the two-week follow-up. Data were analyzed using paired t-tests and the Mann-Whitney U test, based on assumptions of normality and homogeneity. The results showed no statistically significant difference in insomnia scores between the experimental and control groups at both posttest and follow-up ($p > 0.05$). Additionally, there was no significant within-group change in insomnia scores over time. Dhikr relaxation therapy did not demonstrate effectiveness in reducing insomnia among middle-aged hypertensive patients. Potential confounding factors such as gender imbalance and participant background may have affected the results. Further studies with larger, more diverse samples and refined methodology are recommended.

Article History:
Received 25 January 2025
Revised 25 Apri 2025
Accepted 20 June 2025

Keywords: *dhikr relaxation therapy; insomnia; hypertension; middle-aged adults*

INTRODUCTION

Hypertension is one of the leading causes of premature death worldwide (World Health Organization [WHO], 2023). This is because hypertension is a serious medical condition that can lead to cardiovascular disorders, such as stroke, heart attack, heart failure, and kidney disease, and is a threat to the entire world population (WHO, 2018). Furthermore, the majority of people with hypertension live in low- and middle-income nations (WHO, 2023). Globally, there were 1.13 billion

How to cite (APA 7th Edition)
Nashori, F., Khairunnisa, N. Z., Fitri, K. & Puteri, G. A. (2025). Dhikr relaxation for middle-aged hypertensive patients to reduce insomnia. *INSPIRA: Indonesian Journal of Psychological Research, 6*(1), 10–20. https://doi.org/10.32505/inspira.v6i1.10858

patients with hypertension in 2015, according to data from the World Health Organization (2015), and it is predicted that the number will rise to 1.5 billion by 2025.

In Indonesia, one in three people suffers from hypertension, and the number of cases is increasing each year (Ministry of Health, 2023). According to the Indonesian Basic Health Research (Riskesdas, 2018), 34.1% of Indonesians have hypertension, a notable rise of 25.8% from 2013. In addition, Riskesdas (2018) estimates that only around one-third of hypertension cases in Indonesia are diagnosed; the remaining cases go undiagnosed. This suggests that the number of people with hypertension in Indonesia might be higher than the current available data.

Hypertension is a disease that many middle-aged adults experience. As stated by Riskesdas (2018), people aged 31 to 44 have hypertension at a rate of 31.6%, 45 to 54 have 43.3%, and 55 to 64 have 55.2%. This suggests that middle adulthood is one of the age groups most susceptible to hypertension. Middle-aged adults are defined as people aged 40 to 60 (Thahir, 2018). According to Hurlock (2010), one of the developmental tasks of middle adulthood is reaching and sustaining a high level of success at work. Since individuals in their middle years are still considered to be in the productive age group, they are susceptible to physical deterioration.

Fatigue, which is frequently found in middle adulthood, requires adequate rest. This is connected to the fact that they are productive individuals, but there is a process of physical decline (Fitriani et al., 2021). Getting sufficient sleep provides adequate rest. One of the most important indicators of high-quality sleep is enough sleep. In Surah an-Naba' [78] verse 9, Allah says, "And we make your sleep for rest." According to Nashori and Wulandari (2017), high-quality sleep is characterised by restful sleep, sufficient sleep time (6–8 hours), psychological comfort, a relaxed body, and waking up feeling refreshed. High-quality sleep restores an individual's energy, allowing the following day's activities to be carried out optimally.

Sleep is a mechanism to maintain physiological and psychological functions. Widhiyanti et al. (2017) argue that getting enough sleep can help preserve heart muscle and enhance body metabolism. Furthermore, quality sleep can also improve cognitive function (Wulandari et al., 2023), learning achievement (Nashori, 2004; Nilifda et al, 2016), self-control (Nashori, 2004), and reduce aggression (Lin et al, 2024).

An example of poor sleep quality is insomnia. Insomnia refers to the inability to initiate and maintain sleep, waking up too early, and having unrefreshing sleep (Nashori & Wulandari, 2017). Particular signs of insomnia include difficulties initiating and maintaining sleep, sleep duration and sleep quality; and disturbance in daytime functioning, such as decreased physical and mental function and drowsiness (Morin et al., 2006).

Li et al. (2016) found that individuals with hypertension are more likely to experience insomnia compared to those with normal blood pressure. Their research involved participants from China. In addition, studies conducted in the US revealed that the most frequent cause of insomnia in people between the ages of 32 and 59 is hypertension (Shittu, 2014). Insomnia was also strongly associated with an increased risk of hypertension, according to cohort studies carried out in North America and Europe (Liu et al., 2022).

Furthermore, research in Indonesia supports previous studies, such as Alfi and Yuliwar's (2018) findings, which show a positive correlation between hypertension and insomnia. Patients with insomnia were also found to have hypertension. 94% of patients with hypertension treated at the community health center (puskesmas) reported experiencing insomnia (Sakinah et al., 2018). There is a reciprocal relationship between hypertension and insomnia. This is also supported by Liu et al.

(2022), who highlight that the relationship between hypertension and insomnia is reciprocal. Hypertension is one of the vulnerabilities of people who have insomnia. On the other hand, insomnia can be a risk factor for causing someone to have hypertension.

Responding to the many phenomena of insomnia, there are various approaches offered by experts to deal with it. Morin et al. (2006) showed that various non-pharmacological therapies are used, including relaxation therapy, stimulus control therapy, sleep restriction therapy, sleep hygiene Education, cognitive therapy, and cognitive behaviour therapy. Given the importance of religion in Indonesian society, the above therapies will be more effective when including religious teachings as part of the therapy. For this reason, Nashori, Diana, and Hidayat (2019) offer an integrative Islamic psychological intervention. In the integrative Islamic psychological intervention approach, Western scientific approaches are integrated into therapies developed in Islamic teachings or traditions. Nashori et al. (2020) identified that a psychological approach intervention in the form of Islamic Cognitive Behaviour Therapy, which combines Islamic teachings and cognitive behavioural therapy, was effective in reducing insomnia.

Dhikr relaxation therapy intervention is one form of an integrative effort to reduce the level of insomnia. It is one part of religious relaxation (Nashori & Wulandari, 2017). The remembrance relaxation intervention integrates the practice of Islamic teachings in the form of remembrance and Western traditions in the form of relaxation therapy. Dhikr relaxation is a non-pharmacological therapy that integrates Dhikr and relaxation techniques. Ibrahim (2018) revealed that worry and fear cause individuals to experience insomnia, and it can be cured through Dhikr. Cahyaningtias et al. (2021) findings combining relaxation and Dhikr showed that relaxation therapy and Dhikr effectively reduce elderly insomnia. Other research results also show that relaxation is effective in reducing elderly insomnia (Utami et al., 2023). Dhikr therapy alone has also proven effective in improving the sleep quality of mothers who are about to give birth (Purwanto et al., 2023) and the elderly (Shidiq & Soleman, 2023) who experience insomnia.

The difference between this study and previous studies is the measuring instrument used. Cahyaningtyas et al. (2021) employed the Insomnia Rating Scale designed by KSPBJ (Jakarta Biological Psychiatry Study Group), while this study used the Athens Insomnia Scale (AIS) designed by Morin et al. (2006). In addition, the relaxation in the previous study used progressive muscle relaxation, while in this study, respiratory relaxation was used. The previous study used the Dhikr of tasbih *(subhanallah),* tahmid *(alhamdulillah),* takbir *(allahu akbar),* and istigfar *(astaghfirullahal'adzim)*, each of which was recited 33 times. In this study, tahlil (La ilaha illallah) and tawakal (*hasbunallah wanikmal wakil)* Dhikr were used, along with Education about Dhikr recitation. This research aims to evaluate the effectiveness of Dhikr relaxation therapy in mitigating the severity of insomnia among middle-aged adults with diagnosed hypertension.

METHOD

The study population was Puskesmas X patients in Surakarta City. The inclusion criteria were stage 2 hypertension patients, specifically those whose systolic pressure reached 140 mmHg or more or whose diastolic pressure reached 90 mmHg or more (Ilyas, 2016), male and female aged 40-59 years, not currently following other therapies besides Dhikr relaxation therapy—the number of samples involved as research participants was 18 patients.

Table 1. *Respondent Characteristics*

Variables	Experimental Group		Control Group	
	f	(%)	*f*	(%)
Sex				
Male	1	5.56	3	16.67
Female	8	44.44	6	33.34
Occupation				
Teacher	0		1	5.55
Housewife	7	38.89	2	11.11
Porter/Coolie	0	0	1	5.55
Civil Defence Officer	0	0	1	5.55
Pensioner/Retiree	0	0	1	5.55
Private Employee	0	0	2	11.11
Self-employed/Entrepreneur	2	11.11	0	0
Unknown/Unreported	0	0	1	5.55
***Continuous Variable* (*M* and SD)**				
Post-test Scores	1.333	.87	2.000	2.179
Follow-up Scores	1.111	.93	1.888	2.472

The Athens Insomnia Scale (AIS) is a tool of measurement used to assess insomnia. The measuring instrument compiled by Morin et al. (2006) intends to reveal aspects of insomnia in research subjects, namely (1) difficulty starting and maintaining, waking time, duration and quality of sleep, (2) disturbances that occur during the day, namely performance during the day, physical and mental functioning conditions, and feelings of sleepiness. The first aspect is measured by items 1-2. The second aspect is measured by items 3-5. The range of scores is 0 to 3. According to analyses by Soldatos, Dikeos, and Paparrigopoulos (2000), this scale's alpha coefficient was 0.90.

This present study utilised Dhikr relaxation therapy as its treatment. The relaxation therapy module was designed by Ruidahasi, Kartikasari, and Nashori (2021). Dhikr relaxation therapy was given to the experimental group, while the control group did not receive treatment. The process of istigfar Dhikr therapy includes psychoeducation about the recitation of *Astaghfirullah wa atubu ilaih*. Following this are the exercises of istigfar Dhikr, homework for self-directed relaxation, reflection on one's understanding and experience of istigfar Dhikr, assessment, and dissolution. The module has been validated by involving five raters and eight adults. Aiken's analysis of professional judgement showed the validity coefficient moved between 0.67 to 0.93. Meanwhile, Aiken's analysis of the adult readability assessment showed a validity coefficient of 0.83 to 0.88.

Several stages were carried out in this study. First is the determination of research measurement tools. The insomnia scale used was the Athens Insomnia Scale (AIS). The consideration is that this scale can portray insomnia not only related to sleep, but the direct impact of insomnia experienced by individuals in their daily lives.'Second is the determination of the remembrance relaxation therapy module. The choice of zikr relaxation is based on the idea that one way to produce Islamic psychological treatment is to integrate Islamic teachings and psychological science (Nashori, Diana, Hidayat, 2019). Dhikr represents Islamic teachings, while relaxation techniques represent psychological science. Based on several previous studies, it is known that the remembrance of istigfar has proven effective in increasing or decreasing individual affection, cognition, conation, and behaviour. The measuring instruments and treatments used in this research have been approved by the Research Ethics Committee, Faculty of Psychology and Socio-Cultural Sciences, Universitas Islam Indonesia, No. 2239/DEK/70/DURT/XI/2023.

Third is the determination of the therapist. The therapist chosen is a professional therapist in the field of Islamic psychology. The therapist understands the concept of Dhikr relaxation, has experience providing psychological therapy, and practices Dhikr relaxation. Fourth is the random sampling of subjects. Fifth is the posttest and follow-up. Here, a scale was given to the research participants to complete the Athens Insomnia Scale. The pre-test and follow-up lasted at least two weeks. Sixth is the treatment. The treatment took place after the pre-test and before the posttest. The treatment took place in 3 meetings. The seventh is a data analysis and research report.

Furthermore, data analysis was conducted. The researcher first conducted descriptive statistical analysis by looking at the mean, standard deviation, and percentage values of the demographic data of the research subjects. After that, testing the assumptions of normality and homogeneity is a prerequisite test for comparative analysis. If the assumptions are met, then in testing data comparisons using a parametric approach, namely paired sample t-test and independent sample t-test, and if they do not meet the assumptions, using a non-parametric approach, namely Wilcoxon and Mann-Whitney U.

RESULT

This study involved 18 participants, consisting of 9 people in the experimental group (M age = 50.333, SD = 6.500) and nine people in the control group (M age = 52.777, SD = 4.657). Table 1 presents the distribution of participants by experimental and control groups for each gender and occupational category. In the experimental group, there was one male participant (5.555%) and eight female participants (44.444%). In the control group, there were three male participants (16.666%) and six female participants (33.333%). Specifically, the occupation with the highest number of participants was housewife, with 7 participants (38.888%) in the experimental group and 2 participants (11.111%) in the control group.

Meanwhile, the occupation with the lowest number of participants was Teacher, with 0 participants in the experimental group and 1 participant (5.555%) in the control group. Furthermore, the mean value of participants' insomnia scores for each group shows that the posttest score has a mean of 1.333 and a standard deviation of 0.866 for the experimental group, and a mean of 2.000 and a standard deviation of 2.179 in the control group. Meanwhile, the follow-up score had a mean of 1.111 and a standard deviation of 0.927 for the experimental group, and a mean of 1.888 and a standard deviation of 2.472 in the control group.

The results of the data normality assumption test on posttest and follow-up insomnia scores in the experimental group were normally distributed (W = 0.903, p = 0.272), with a paired sample t-test showing no difference in posttest and follow-up insomnia scores (t = -0.852, p = 0.406), presented in Figure 1A. The same was also found for posttest and follow-up insomnia scores in the control group, which were normally distributed (W = 0.866, p = 0.112), with a paired sample t-test showing no difference in insomnia scores between posttest and follow-up participants (t = 0.244, p = 0.813), presented in Figure 1B.

Table 1. Mean and standard deviation for experimental and control group insomnia scores

	Experiment		**Control**	
	M	***SD***	***M***	***SD***
Post-tests	1,333	0,866	2,000	2,179
Follow up	1,111	0,927	1,888	2,472

The results of the normality assumption test of the posttest insomnia score in the experimental group (W = 0.748, p = 0.005) indicate that the data are not normally distributed. In contrast, the control group showed that the assumption of normality was fulfilled (W = 0.839, p = 0.055). In addition, the results of the homogeneity test also showed that the data had a homogeneous variance (F = 2.56, p = 0.129). However, this difference test still uses a nonparametric approach. This is because the data in the experimental group is not normally distributed. Then, the Mann-Whitney U test results showed that the mean value of the control group (M = 2.000, SD = 2.179) was greater than the experimental group (M = 1.333, SD = 0.866). However, this difference is not significant, so it can be said that there is no difference in the insomnia scores of posttest participants in the control and experimental groups (U = 37.500, p = 0.814), as shown in Figure 1C.

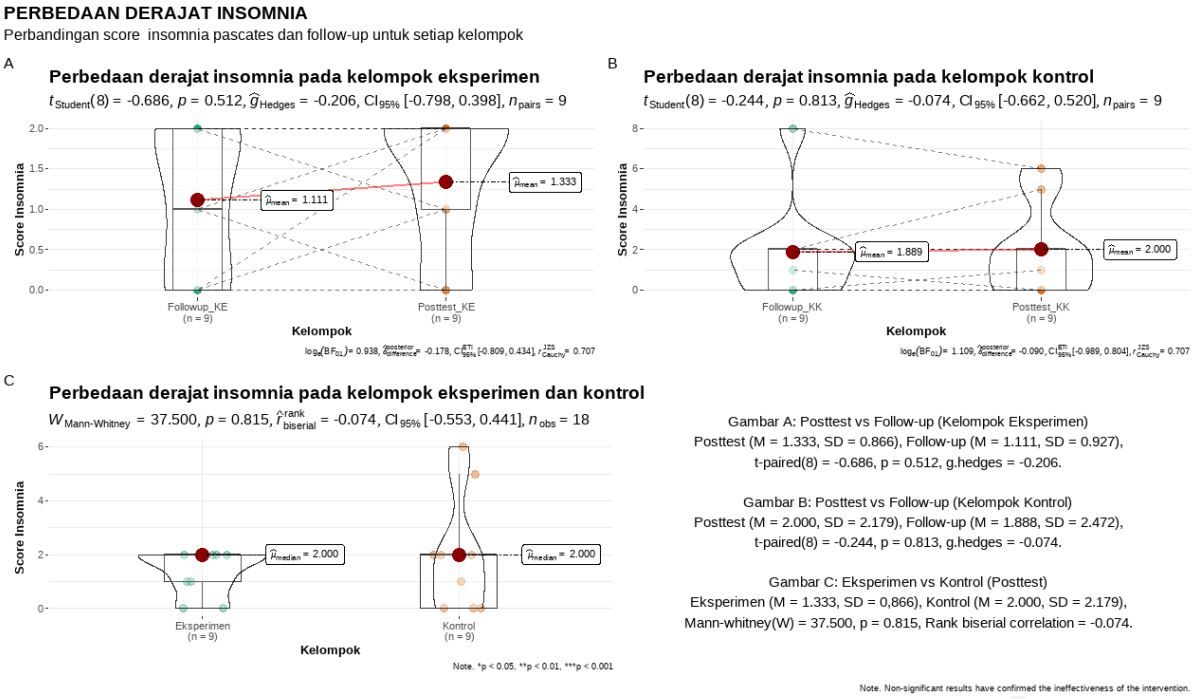

Image 1. Comparison Test Results

DISCUSSION

The results of this study do not support several expert opinions and previous research results. The results of this study indicate that Dhikr relaxation does not reduce insomnia in hypertensive patients. The results of this study do not support Ibrahim's (2018) statement that Dhikr functions to change a person's fears and worries, leading to freedom from insomnia. The results of this research also do not support the results of previous research that therapy that combines relaxation and Dhikr is effective in reducing elderly insomnia (Cahyaningtias et al., 2021). The results of this research also do not support the findings of previous research that Dhikr therapy has proven effective in improving the sleep quality of individuals experiencing insomnia (Purwanto et al., 2023) and the elderly (Shidiq & Soleman, 2023). Previous research results, which are also not supported by the results of this study, show that relaxation therapy is effective in reducing elderly insomnia (Utami et al., 2023).

The discrepancy between these results and the results of previous studies may be due to several factors. First, there is a threat to internal validity. This refers to the reasons that prevent the causal relationship not occurring. One of the threats to internal validity in this study is related to selection. According to Shadis et al. (2002), selection is the existence of systematic differences in respondent characteristics between experimental and control groups that can make observable effects. Hastjarjo

(2011) argues that in experiments, it is important to pay attention to internal validity, namely, regarding the observed covariation between the treatment and the treatment effect as a manifestation of the causal relationship as the variable is manipulated or measured.

In this study, it appears that there are systematic differences in respondent characteristics between the experimental and control groups. It is known that in this study, the number of participants in the experimental group was predominantly female. There were 9 participants in the experimental group, with eight women and one man. Some literature states that women have a higher prevalence rate of insomnia than men (Palagini et al., 2024; Zeng et al., 2020; Johnson et al., 2006). This is because women are known to experience certain vulnerabilities compared to men. The fluctuation of the hormones estrogen and progesterone experienced by women is one of the causes of insomnia. Towards menopause, there is a decrease in estrogen and progesterone hormones that affect sleep patterns (Kim et al., 2017). Also, in terms of health, women experience more osteoporosis, bone and joint fractures. In addition, women are also exposed to more stress, which makes them more vulnerable to insomnia. Women are known to have a higher risk of mental health problems, such as depression and anxiety, than men (Patel et al., 2018). These disorders have a bidirectional relationship with insomnia, i.e., depression and anxiety can cause insomnia, and insomnia can exacerbate symptoms of depression and anxiety.

In addition, participants in this study were dominated by housewives. It is known that housewives are prone to mental health problems. Although there have been many studies on workplace stress, some studies have shown the opposite. A comparative study showed that housewives experience more stress exposure than working mothers. Working mothers were found to be better able to cope with stress through the implementation of healthy practices and more social support (Sultanpur, 2019).

Furthermore, Durak et al. (2022), involving participants in Turkey (N = 500), found that housewives were more likely to experience mental health problems. It is known that research participants in the study were known to experience chronic stress levels, fatigue, psychological pressure in managing family conflicts, loneliness, excessive workload, and lack of social support. Housewives are more prone to chronic stress due to the demands of carrying out daily tasks such as cooking, shopping, tidying the house, and taking care of all the needs of family members (Kaplan, 2022).

Secondly, interventions for insomnia need to consider the individual context. Certain types of interventions that are suitable for one individual may not necessarily suit another (Crowther et al., 2023; Sharma & Andrade, 2012). This is because the causes and manifestations of insomnia may vary across individuals. In addition, differences in response to interventions also affect the success or failure of insomnia treatment. Interventions for insomnia also need to identify the causative factors. According to DSM IV, the causes of insomnia can vary, such as medical, psychiatric, substance, and sleep disorder factors.

CONCLUSION

This study concludes that remembrance relaxation therapy is not proven effective in reducing insomnia in early adults who experience hypertension. The results of the analysis showed that the cause was an error in taking research subjects. Suggestions that can be given to this study are (1) this research is extended to other groups experiencing physical and psychological problems, such as early adults, adolescents, and children. (2) Research needs to be conducted that compares the effectiveness of religion-based therapies, those based on contemporary science, and the integration of the two. The

integration combines Dhikr and relaxation, as well as Dhikr and reading the Qur'an, and recitation of the Qur'an.

DECLARATION

Acknowledgment

We want to thank all research participants and others who facilitated this research. We would also like to thank all colleagues who supported the research by ensuring administrative and ethical support.

Author contribution statement

Fuad Nashori led the intellectual and conceptual development of this study, assuming primary responsibility for the research design, methodology, and validation. He drafted the initial manuscript and provided critical revisions for substantial intellectual content. As the project leader, he oversaw all aspects of the work, including investigation, resource acquisition, and ensuring the integrity of the entire research process. Nadea Zulfa Khairunnisa made a significant contribution to the formal analysis of the data and played a key role in the writing process, contributing to the original draft and providing critical editing input to enhance the manuscript's clarity and coherence. Khairunnisa Fitri and Gita Anindya Puteri shared responsibility for the project administration, with a primary focus on the meticulous curation and collection of data. They coordinated all treatment-related activities, ensuring the smooth execution of the study's operational protocols..

Funding statement

This research did not receive any specific grant from funding agencies in the public, commercial, or nonprofit sectors.

Data access statement

The data described in this article are from the corresponding author upon reasonable request.

Declaration of interest statement

The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.

REFERENCES

Alfi, W.N. & Yuliwar, R. (2018). The relationship between sleep quality and blood pressure in patients with hypertension in Mojolangu PHC, Malang. *Jurnal Berkala Epidemiologi, 6*(1), 25-36. https://doi.org/10.20473/jbe.V6I12018.18-26

Brewster, G. S., B. Riegel, & Gehrman, P. R. (2018). Insomnia in the older adult. *Sleep Medicine Clinics, 13*(1), 13–19. https://doi.org/10.1016/j.jsmc.2017.09.002

Cahyaningtias, Y., Amal, A.I., & Suyanto, S. (2021). Terapi kombinasi dzikir dan relaksasi otot progresif terhadap tingkat insomnia pada lansia. *Journal of Holistic Nursing Science, 8*(1), 1–8. https://doi.org/10.31603/nursing.v8i1.3813

Crowther, M. E., Saunders, W. J., Sletten, T. L., Drummond, S. P. A., & Bei, B. (2023). Tailoring cognitive behavioural therapy for insomnia across contexts, conditions, and individuals: What do we know, where do we go? *Journal of Sleep Research, 32*(6), e14023. https://doi.org/10.1111/jsr.14023

Del Brutto, O.H., Mera, R.M., Rumbea, D.A., Sedler, M.J., & Castillo, P.R. (2023). Poor sleep quality increases mortality risk: A population-based longitudinal prospective study in community-dwelling middle-aged and older adults. Sleep Health, online 25 November 2023. https://doi.org/10.1016/j.sleh.2023.10.009.

Durak, M., Senol-Durak, E. & Karakose, S. (2022). Psychological distress and anxiety among housewives: The mediational role of perceived stress, loneliness, and housewife burnout. *Current Psychology, 42*, 14517–14528. http://doi.org/10.1007/s12144-021-02636-0

Fitriani, A., Arief, F., & Shahib, N. (2021). Scoping Review: Pengaruh Terapi Dzikir Terhadap Tingkat Insomnia pada Lansia. *Prosiding Pendidikan Dokter Spesia, 7*(1), 367-374. http://dx.doi.org/10.29313/kedokteran.v7i1.26635367

Fox, J., Weisberg, S., Price, B., Adler, D., Bates, D., Baud-Bovy, G., Bolker, B., Ellison, S., Firth, D., Friendly, M., Gorjanc, G., Graves, S., Heiberger, R., Krivitsky, P., Laboissiere, R., Maechler, M., Monette, G., Murdoch, D., Nilsson, H., Ogle, D., Ripley, B., Short, T., Venables, W., Walker, S., Winsemius, D., Zeileis, A., & R-Core. (2023). CAR: Companion to applied regression. https://CRAN.R-project.org/package=car

Hastjarjo, T.D. (2011). Validitas eksperimen. *Buletin Psikologi, 19*(2), 70-80.

Hurlock E. (2010). *Psikologi perkembangan: Suatu pendekatan sepanjang rentang hidup.* Erlangga

Ibrahim, A. A. (2018). *Kitab Rahasia Tidur.* (Trans. M. Abidun & Masturi Irham). Khazanah Pustaka Islam.

Ilyas, S. (2016). Tekanan darah tinggi (hipertensi). Retrieved from Kemkes.go.id: https://p2ptm.kemkes.go.id/uploads/2016/10/Tekanan-Darah-Tinggi-Hipertensi.pdf

Insomnia: Assessment and management in primary care. (1999). National Heart, Lung, and Blood Institute Working Group on Insomnia. *Am Fam Physician, 59*, 11, 3029–38.

Johnson, E., Roth. & Schultz L. (2006). Breslau N. Epidemiology of DSM-IV insomnia in adolescence: lifetime prevalence, chronicity, and an emergent gender difference. *Pediatrics, 117*(2), e247-56. https://doi.org/doi:10.1542/peds.2004-2629

Kaplan V. (2023). Mental Health States of Housewives: an Evaluation in Terms of Self-perception and Codependency. *International journal of mental health and addiction, 21*(1), 666–683. https://doi.org/10.1007/s11469-022-00910-1

Kassambara, A. (2023). ggpubr: 'ggplot2' Based publication-ready plots.

Kim, W. J., Joo, W. T., Baek, J., Sohn, S. Y., Namkoong, K., Youm, Y., Kim, H. C., Park, Y. R., Chu, S. H., & Lee, E. (2017). Factors Associated with Insomnia among the Elderly in a Korean Rural Community. *Psychiatry investigation, 14*(4), 400–406. https://doi.org/10.4306/pi.2017.14.4.400

Li, W., Gu, H., Teo, K. K., Bo, J., Wang, Y., Yang, J., Wang, X., Zhang, H., Sun, Y., Jia, X., He, X., Zhao, X., Cheng, X., Li, J., Rangarajan, S., Chen, C., Yusuf, S., Liu, L., & PURE China Investigators (2016). Hypertension prevalence, awareness, treatment, and control in 115 rural and urban communities involving 47 000 people from China. *Journal of hypertension, 34*(1), 39–46. https://doi.org/10.1097/HJH.0000000000000745

Lin, S., Longobardi, C., Gastaldi, F. G. M., & Fabris, M. A. (2024). Social Media Addiction and Aggressive Behaviors in Early Adolescents: The Mediating Role of Nighttime Social Media Use and Sleep Quality. The Journal of Early Adolescence, 44(1), 41–58. https://doi.org/10.1177/02724316231160142

Liu D, Yu C, Huang K, Thomas S, Yang W, Liu S, & Kuang J. (2022). The Association between hypertension and insomnia: a bidirectional meta-analysis of prospective cohort studies. *International Journal of Hypertension, 29*(4), 1-11. https://doi.org/doi:10.1155/2022/4476905

Morin, C. M., Bootzin, R. R., Buysse, D. J., Edinger, J. D., Espie, C. A., & Lichstein, K. L. (2006). Psychological and behavioral treatment of insomnia: update of the recent evidence (1998-2004). *Sleep, 29*(11), 1398–1414. https://doi.org/10.1093/sleep/29.11.1398

Nashori, F. (2004). Hubungan antara kualtas tidur dengan kendali diri mahasiswa. *Fenomena, 2*(2), 127–137.

Nashori, F. (2004). Peranan kualitas tidur terhadap prestasi belajar mahasiswa. *INSAN Jurnal Psikologi dan Kesehatan Mental 6*(3), 159-172.

Nashori, F. & Wulandari, E.D. (2017). *Psikologi tidur*. Universitas Islam Indonesia.

Nashori, F., Diana, R.R., & Hidayat, B. (2019). The trends in Islamic psychology in Indonesia. In Ralph W. Hood Jr. & Sariya Cheruvallil-Contractor (Eds.), *Research in the Social Scientific Study of Religion* (pp. 162–180). Brill. https://doi.org/10.1163/9789004416987_010

Nashori, F., Nugraha, S.P., & Wulandari, E.D. (2019). Insomnia-cognitive behavior therapy to improve the subjective well-being of university students. *Psychology and Education an Interdisciplinary Journal, 56*(2), 10-18. https://www.psychologyandeducation.net/pae/insomnia-cognitive-behavior-therapy-improve-subjective-well-university-students-fuad-nashori-sumedi-p- nugraha-etik-dwi-wulandari/

Nashori, Hidayat, B., Lukman, L., Putra, A.A., Kusprayogi, Y., & Diana, R. R. (2020). Decreasing Insomnia among College Students with Dyspepsia Gastritis: The Role of Islamic-Cognitive Behavioral Therapy. *Talent Development & Excellence, 12*(1), 4436-4451.

National Heart, Lung, and Blood Institute Working Group on Insomnia. (1999). Insomnia: Assessment and management in primary care. *Am Fam Physician, 59*(11), 3029-38.

Nilifda, H., Nadjmir, N., & Hardisman, H. (2016). Hubungan kualitas tidur dengan prestasi akademik mahasiswa Program Studi Pendidikan Dokter angkatan 2010 FK Universitas Andalas. *Jurnal Kesehatan Andalas, 5*(1), 243-249. DOI: https://doi.org/10.25077/jka.v5i1.477

Palagini, L., Manni, R., Liguori, C. et al. (2024). Evaluation and management of insomnia in the clinical practice in Italy: a 2023 update from the insomnia expert consensus group. *Journal of Neurology, 271*(4), 1668–1679. https://doi.org/10.1007/s00415-023-12112-3

Patel, D., Steinberg, J. & Patel, P. (2018). Insomnia in the elderly: A review. *Insomnia Diagnosis Treat, 14*(6), 224–234. http://doi.org/10.5664/jcsm.7172

Patil, I., & Powell, C. (2024). Ggstatsplot: 'ggplot2' based plots with statistical details. https://cran.r-project.org/web/packages/ggstatsplot/index.html

Pedersen, T. L. (2024). Patchwork: The composer of plots. https://CRAN.R-project.org/package=patchwork

Purwanto, S., Ahmad, M., Said, Z., Anganthi, N. R. N., & Zulaekah, S. (2023). Effect of mindfulness Dhikr breathing therapy for insomniacs on quality of life: A randomized controlled trial. *Islamic Guidance and Counseling Journal, 6*(2). https://doi.org/10.25217/0020236368800

Riset Kesehatan Dasar (Riskesdas) (2018). Badan Penelitian dan Pengembangan Kesehatan Kementerian RI tahun 2018. http://www.depkes.go.id/resources/download/infoterkini/materi_rakorpop_2018/Hasil%20Riskesdas%202018.pdf

Ruidahasi, T. D., Kartikasari, M., & Nashori, H. F. (2022). Validasi modul terapi zikir istigfar untuk meningkatkan resiliensi dan menurunkan gejala gangguan stres pascatrauma pada orang dewasa. *Jurnal EMPATI, 10*(5), 368-379. https://doi.org/10.14710/empati.2021.32940

Ryu, C. (2024). Dlookr: Tools for data diagnosis, exploration, and transformation. https://CRAN.R-project.org/package=dlookr

Sakinah, P.R., Kosasih, C.E., & Sari, E.A. (2018). Gambaran kualitas tidur pada penderita hipertensi. *Media Kesehatan Politeknik Kesehatan Makassar, 13*(2), 46-52. DOI: https://doi.org/10.32382/medkes.v13i2.663

Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference.* Houghton Mifflin

Sharma, M. P. & Andrade, C. (2012). Behavioral interventions for insomnia: Theory and practice. *Indian Journal of Psychiatry, 54*(4), 359–366. https://doi.org/10.4103/0019-5545.104825

Shidiq, Y.M. & Soleman, S.R. (2023). Penerapan Terapi Dzikir untuk Meningkatkan Kualitas Tidur Pada Lansia di Panti Usia Lanjut 'Aisyiyah Sumber Surakarta. *Jurnal Mahasiswa Ilmu Kesehatan, 1*(4), 135–144. https://doi.org/10.59841/jumkes.v1i4.267

Shittu, R., Issa, B. A., Olanrewaju, G. T. (2014). Association between subjective sleep quality, hypertension, depression, and body mass index in a Nigerian family practice setting. *Journal of Sleep Disorders, 3*(2). https://doi.org/10.4172/2167-0277.1000157.

Soldatos, C.R., Dikeos, D.G., & Paparrigopoulos, T.J. (2000). Athens Insomnia Scale: Validation of an instrument based on ICD-10 criteria. *Journal of Psychosomatic Research, 48*(6), 555–560. https://doi.org/10.1016/S0022-3999(00)00095–7.

Sultanpur, M. (2021). Stress levels between housewives and employed women. *International Education and Research Journal (IERJ), 5*(6), 21–24.

Thahir, A.E. (2018). *Psikologi perkembangan.* Aura Publishing.

Utami, L. T., Hartutik, S., & Widodo, P. (2023). Penerapan terapi relaksasi benson terhadap tingkat insomnia pada lansia di Ruang Akar Wangu RSUD Pandan Arang, Boyolali. *Jurnal Kesehatan Kartika, 18*(2), 67–73. https://doi.org/10.26874/jkkes.v18i2.259

WHO. (2018). World Health Statistics. 1-86. https://www.who.int/docs/default-source/gho-documents/world-health-statistic-reports/6-june-18108-world-health-statistics-2018.pdf

WHO. (2023). Hypertension. https://www.who.int/news-room/fact-sheets/detail/hypertension

Wickham, H. (2023). tidyverse: Easily install and load the 'Tidyverse'. https://CRAN.R-project.org/package=tidyverse

Wickham, H., Chang, W., Henry, L., Pedersen, T. L., Takahashi, K., Wilke, C., Woo, K., Yutani, H., & Dunnington, D. (2023). GGPlot2: Create elegant data visualisations using the grammar of graphics. https://cran.r-project.org/web/packages/ggplot2/index.html

Wickham, W., François, R., Henry, L., Müller, K., & Vaughan, D. (2023). DPLYR: A grammar of data manipulation. https://cran.r-project.org/web/packages/dplyr/index.html

Widhiyanti, K. A. T., Ariawati, N. W., & Rusdiyanti, N. W. A. (2017). Pemberian back massage durasi 60 menit dan 30 menit meningkatkan kualitas tidur pada mahasiswa VI A penjaskes FPOK PGRI Bali Semester Genap tahun 2016/2017. *Journal Pendidikan Lesehatan Rekreasi, 3*(1), 1–14.

Wulandari, E.T., Nasution, R.A., & Sari, Y. (2023). Hubungan kualitas tidur dengan fungsi kognitif lansia di Puskesmas Muara Kumpe. *Jurnal Ilmiah Ners Indonesia.* https://10.22437/jini.v4i1.25253

Zeng, LN, Zong, QQ, Yang, Y., Zhang, L., Xiang, Y.F., Ng, C.H., Chen, L.G., & Xiang, Y.T. (2020). Gender difference in the prevalence of insomnia: a meta-analysis of observational studies. *Front Psychiatry. https://doi.org/doi:10.3389/fpsyt.2020.577429*