Effectifitness of Upper Back Massage to Reduce Fatigue Among Nurses at Kemuning Building of Dr. Hasan Sadikin Hospital Bandung

Anita Yuna Suryati[1], Heni Purnama[2], Dian Anggraini[2], Masdum Ibrahim[2]

[1]Bachelor Student of STIKep PPNI Jawa Barat, Bandung

[2]Department of Nursing of STIKep PPNI Jawa Barat, Bandung

OPEN ACCESS

Proceeding STIKep PPNI Jawa Barat

Website :
https://proceedings.stikep-ppnijabar.ac.id/index.php/psj

Volume 1 (1), 214-218

Article info

Received : December 28, 2024
Revised : April 22, 2025
Accepted : May 02, 2025
Published : May 19, 2025

Corresponding author
Anita Yuna Suryati
Sekolah Tinggi Ilmu Keperawatan PPNI Jawa Barat, Bandung, Indonesia
Jl. Muhammad No 34 Bandung, Indonesia

Citation
Suryati, A. Y., Purnama, H., Anggraini, D., & Ibrahim, M. (2025). Effectiveness Of Upper Back Massage To Reduce Fatigue Among Nurses At Kemuning Building Of Dr. Hasan Sadikin Hospital Bandung. *Proceeding STIKep PPNI Jawa Barat*, 1(1), 214-218.

Abstract

Objective: This study explores the impact of upper back massage as an intervention to alleviate fatigue experienced by nurses working in the Kemuning Building at Dr. Hasan Sadikin Hospital, Bandung.

Method: A quasi-experimental design with one group and a pre-test–post-test format was applied. The research involved 85 nurses selected through total sampling. The Fatigue Assessment Scale (FAS) was used to measure fatigue levels before and after the intervention. Statistical analysis was conducted using paired t-tests to evaluate differences in fatigue scores.

Results: Demographic analysis showed that the average participant age was 37 years. The majority of nurses were diploma graduates (57.6%), married (77.6%), and worked more than 40 hours per week. Post-intervention analysis using paired t-tests revealed a statistically significant decrease in fatigue levels, with a p-value of less than 0.0005, indicating that the massage therapy had a substantial effect.

Conclusion: The findings suggest that upper back massage is a beneficial method for reducing physical fatigue among nurses. Incorporating this non-pharmacological approach into workplace wellness programs may help improve overall well-being and performance among healthcare professionals.

Keywords: Nurse fatigue, upper back massage, non-pharmacological intervention, quasi-experimental, occupational health, fatigue reduction.

INTRODUCTION

Based on data from the Data and Information Center of the Ministry of Health (2017), it shows that the largest portion of work in hospitals is nurses which reaches 49%. Nurses are often the spearhead of the quality of health services provided by a hospital. Nurses as part of health professionals have the role of caregivers, educators, client advocates, counselors, change agents, leaders, managers, case managers, and researchers and developers of nursing practices

In Europe Kleiber and Ensman (2018) reported that nurses are the most likely group to experience work burnout, which is as much as 43% compared to doctors and pharmacists (Wahyudi, 2020). In Europe, Kleiber and Ensman (2018) reported that nurses were the most likely group to experience job
burnout at 43% compared to doctors and pharmacists. A study conducted by the Persatuan Perawat Nasional Indonesi (PPNI, 2018) stated that 50.9% of nurses in four

provinces in Indonesia experienced work strain, among others, due to high workload. High workloads have a negative impact on the performance of nurses, which in turn makes nurses not optimal in carrying out their duties.
From the three nurses interviewed, there was a physical disorder, back pain, and mental or emotional exhaustion when faced with pressure from patients and their families. Fatigue is a condition in which there is a physical decline to do work, activities and motivation. Relevance as it relates to the provision of nursing care plan and medication errors that can be life-threatening to the patient. Occupational injuries, such as needle sticks injury and cuts from sharp objects, are also associated with long working hours and high workloads. In addition, nurses who experience negligence will also be confused in the absence of sleepiness, thus making them feel sick for the duration of the journey (Somantri dkk., 2020).
One of the non-pharmacological measures to relieve fatigue is massage. Upper back massage is one of the techniques of massage on the back by gently rubbing the back. Which can provide overall relaxation and reduce fatigue because this therapy can improve blood circulation and reduce body tension and the release of body waste is more perfect with the release of toxins in the body (Amalia, 2021)

METHODS

Study Design

This study was a quasi-experimental, one-group pre-test and post-test design.

Population and Sample

The population was female nurses who are on duty at Kemuning building of Dr. Hasan Sadikin Hospital Bandung which has 5 floors. The sample in this study was taken using the total sampling technique. A total of 85 nurses were recruited using total sampling. The inclusion criteria included female nurses experiencing moderate to severe fatigue, with exclusions for those on leave or in administrative positions.

Instrument

Fatigue Assessment Scale (FAS): A validated tool with 10 items rated on a 5-point Likert scale, ranging from 1 (never) to 5 (always). Scores classify fatigue as mild (<22), moderate (22-34), or severe (>35) (Michielsen et al., 2003). The FAS has strong validity test, with correlations up to 0.85. The reliability test showed intraclass correlation coefficients (ICC) as high as 0.90 over.

Intervention Protocol

The intervention involved a 10-minute upper back massage performed once for each participant. Techniques included effleurage (stroking), petrissage (kneading), and gentle friction to relax muscles and stimulate blood flow (Trybahari et al., 2019). The upper back massage therapy begins with kneading (petrissage) the muscles at the back of the neck, alternating between the right and left hands for about one minute. The therapist then moves downward approximately 2 cm from the initial reference point and another 2 cm to the left or right, positioning the thumbs to perform circular friction massage from the shoulder to the upper arm for one minute.
Next, the therapist continues kneading the shoulder muscles to the upper arms for another minute. Vertical pressure (kneading) with the thumbs is applied along both sides of the spine to the level of the shoulder blades, lasting one minute. Following this, a skin-rolling technique is employed along both sides of the spine, starting from the top of the shoulders and extending to the shoulder blades for about one minute. The massage proceeds with rhythmic light tapping (tapotement) over the entire back area, also for one minute. Finally, the therapist uses stroking movements with both palms along the sides of the spine from the shoulders to the shoulder blades for another minute. The session concludes with the therapist informing the respondent that the upper back massage therapy is complete.

Data Analysis

Paired T-test was employed to analyse the data.

RESULTS

Table 1 Demographic data of respondents (N=85%)

Variable	Mean (± SD) Min-Max	F (%)
Age	37.47 (± 7,571) 26-56	
Education Level		
Diploma		49 (57.6%)
Bachelor in Science		6 (7.1%)
Ners Profession		30 (35.3%)
Career Level		
PK 1 (≥ 3-6 years)		33 (38.8%)
PK 2 (≥ 6-9 years)		30 (35.3%)
PK 3 (≥ 9-12 years)		22 (25.9%)
Marital Status		
Unmarried		15 (17.6%)
Marry		66 (77.6%)
Ever Married		4 (4.7%)

Table 1 showed that the average age of the respondents was 37 years old. More than half of the respondents with diploma education 57.6%. A total of 38.8% of respondents in this study are nurses with a career level of PK I with a service period of 3-6 years

Table 2 Pre-Post test of Fatigue Level before and after intervention (N=85%)

Nurse Fatigue	***Pre-test***	***Post-test***
Mild fatigue	30 (35.3%)	52 (61.2%)
Moderate fatigue	45 (52.9%)	32 (37.6%)
Severe fatigue	10 (11.8%)	1 (1.2%)

Based on table 2 showed that more than half of the total respondents before intervention experienced fatigue in the category of moderate fatigue (52.9%), and the category of severe fatigue (11.8%). Meanwhile, in the post-test most of the respondents experienced fatigue at mild category (61.2%).

Table 3 Paired Sample T-Test *Difference in Fatigue Score Before and After Upper Back Massage (N=85)*

Variable	***Pre-test***	***Post-test***	***T***	***Mean Difference***	***P-value***
Fatigue	24.91 (± 6.198)	19.79 (± 4.343)	5.118	84	0.000

Table 3 showed that the total pre-test mean score is 24.91 (± 6.198) and the total post-test mean score is 19.79 (± 4.343) and the p-value is 0.000 < 0.005.

DISCUSSION

The study revealed that during the pre-test, more than half of the respondents experienced moderate fatigue (52.9%), while 11.8% reported severe fatigue. This outcome is influenced by the fact that 57.6% of respondents were nurses with a Diploma III in Nursing, categorized as vocational nurses. These nurses primarily engage in hands-on patient care, with limited theoretical grounding. They tend to execute tasks based on instructions rather than their initiative (Nurdiansyah, 2009). Vocational

nurses are generally excluded from decision-making processes, which may lead to emotional fatigue as they sometimes implement decisions that conflict with their personal values.

Another contributing factor to nurse fatigue is the shift work system. Nurses are required to work three shifts: morning, afternoon, and night, with each shift averaging 7–9 hours. Occasionally, the scheduling necessitates transitioning from an evening shift directly to a morning shift, which significantly contributes to physical fatigue.

The average respondent age was 37 years, classified as within the productive age group. This stage of life is often associated with completing formal education, career development, family building, and active community involvement (McKenzie et al., 2006). All respondents were women, with 77.6% being married. Besides their hospital duties, these nurses also manage household responsibilities, which include taking care of their families, further exacerbating their fatigue. Furthermore, 38.8% of the respondents were in Career Level PK I, with a work tenure of 3–6 years. Nurses at this level are required to possess a clinical work assignment letter issued by their employing institution (Irwansyah, 2021). PK I nurses often handle direct patient care under the guidance of PK II and PK III supervisors.

These findings align with the study by Rizani et al. (2018), which examined the differences in physical and psychological fatigue levels among nurses in the ICU at RSD Idaman Banjarbaru and RSUD Ratu Zalecha Martapura. Their results showed moderate fatigue rates of 50% at RS Ratu Zalecha and 33% at RS Idaman. For severe fatigue, the rates were 25% and 7%, respectively, with a p-value of 0.015.

This study demonstrated a significant reduction in fatigue levels following the application of upper back massage. The pre-test mean fatigue score was 24.91 (±6.198), which decreased to a post-test mean score of 19.79 (±4.343), with a p-value of 0.000 (<0.005). Post-intervention, the majority of respondents (61.2%) reported mild fatigue, and only 1.2% experienced severe fatigue.

The effectiveness of upper back massage can be attributed to its ability to alleviate muscle tension in the upper back, promoting vasodilation. This improved blood flow enhances oxygen transport and tissue metabolism, leading to relaxation and a reduction in fatigue (Ayubbana et al., 2018).

The therapy, delivered during breaks or before the end of shifts for 10–15 minutes, allowed respondents to experience immediate relief, reducing fatigue before engaging in other activities at home. The data showed a notable decline in moderate fatigue levels from 52.9% to 37.6% and severe fatigue levels to 1.2%. Respondents also reported improvements in cognitive clarity, with 48.2% indicating no difficulty thinking clearly, and reductions in physical and mental exhaustion to 2.4% and 4.7%, respectively.

These findings align with the research by Ayubbana et al. (2018), which demonstrated a significant decrease in fatigue among breast cancer patients undergoing chemotherapy after back massage therapy, with a p-value of 0.000. This supports the conclusion that upper back massage is an effective non-pharmacological intervention for reducing nurse fatigue.

Acknowledgement

The authors wish to thank the nursing staff at the Kemuning Building and the hospital management for their cooperation and participation in this study.

Conflict of Interest

The authors declare that this research was conducted without any commercial or financial

CONCLUSION

Upper back massage is an effective, non-invasive intervention to reduce fatigue among nurses. It offers a practical approach for healthcare institutions to enhance nurse well-being and maintain patient care quality. Reccomendation for Hospital Policy, to Implement regular massage sessions for nurses in high-stress units. For further research could investigate the long-term benefits of massage and its impact on job satisfaction and retention rates.

REFERENCES

Allo A. A. (2020). *Determinants of work fatigue in nurses at Hasanudin University Hospital, Makassar*.

Amalia A N, P. D. R. (2021). *Application of Back Massage to Fatigue of Breast Cancer Patients Undergoing Chemotherapy*. *5*, 7–13.

Ayubbana, S., Dharma, A. K., & Metro, W. (2018). *The Effectiveness Of Back Massage On Fatigue In Patiens With Breast Cancer Undergoing Chemotherapy*. *3*(1).

Friska, W. (2018). *The Effectiveness of Back Massage Therapy on Reducing the Intensity of Joint Pain in the Elderly,*.

Irwansyah. (2021). *Criteria and Duties of Clinical Nurse Authority: I II III IV V.* http://www.literasiperawat.com/2022/12/kriteria-dan-tugas-kewenangan-perawat.html

Krisdiana, H., Ayuningtyas, D., Iljas, J., Juliati, E., Administration, D., Policy, D., Faculty, K., & Society, K. (2022). *The Relationship between Health Workers' Workload and Work Fatigue at the Sukmajaya District Health Center, Depok City During the Pandemic*.

Nisak, K. (2023). *The relationship between nurse workload and nurse performance in hospital inpatient rooms*.

Nugraha, G. (2017). *Basic Hematology Laboratory Examination Guide. Trans Info Medika*.

Nurdiansyah T W, Nuraeni A, & Reni. (2023). *Basics of Professional Nursing* (Vol. 1). We write.

Nurdiansyah. (2009). *Vocational Nursing Education Level* . https://nurdiansyah89.wordpress.com/2009/12/02/level-pendidikan-keperawatan-vokasional/

Pongantung, M., Kapantouw, N. H., Kawatu, P. A. T., Health, F., University, M., & Ratulangi, S. (2018). *The Relationship Between Workload and Work Stress with Work Fatigue in Nurses at GMIM Kalooran Amurang Hospital.* In *KESMAS Journal* (Vol. 7, Number 5).

Punjastuti, B., Fatimah, M., & III Nursing Health Polytechnic Karya Husada Yogyakarta Jl, P. D. (2023). *The Effect of Slow Stroke Back Massage on Blood Pressure in the Elderly with Hypertense* : Literature Review. *Journal of Madani Medika Health*, *11*(02), 167–175.

Rizani, K., Agisti Department of Nursing, R., Banjarmasin, P., Mistar Cokrokusumo No, J. H., & Sungai Besar Village, Banjarbaru, South Kalimantan, A. (2018). *Nurse fatigue rate in the ICU room*. In *the World of Nursing* (Vol. 6, Number 1).

Sabaruddin, E. E., & Abdillah, Z. (2019). *The relationship between energy intake, physical workload, and other factors with nurse fatigue*.

Somantri, I., Yuliati, M., Winwood, P., & Adiningsih, D. (2020). *Work-Related Fatigue Among Inpatient Unit Nurses* (Vol. 3).

Tenggor, D., Pondaag, L., Program, R. S. H., Nursing, S. I., & Medicine, F. (2019). *Factors related to work fatigue in nurses in the inpatient room of GMIM Pancaran Kasih Manado General Hospital* (Vol. 7, Number 1).

Trybahari, R., Busjra, B., & Azzam, R. (2019). *Comparison of Slow Deep Breathing with a Combination of Back Massage and Slow Deep Breathing on Blood Pressure of Hypertensive Patients*. *Journal of Telenursing (JOTING)*, *1*(1), 106–118. https://doi.org/10.31539/joting.v1i1.539

Wahyudi, I. (2020). *Nurse Experience Undergoing the Role and Function of Nurses at the Garut Regency Health Center*. In *the Journal of Nursing Friends* (Vol. 2, Number 1). https://jurnal.unimor.ac.id/JSK

Wahyuni I, D. M. M. (2020). *The Relationship between Excess Working Time and Work Fatigue and Performance in Nurses in the Intensive Care Room of Abdul Wahab* Sjahranie Hospital, Samarinda. *BSR*, *1*.

Zuraida, R., Ho, ;, & Chie, H. (2014). *Testing of the Fatigue Measurement Scale (SPK) on Respondents in Indonesia* (Vol. 5, Number 2).