Jurnal Aisyah: Jurnal Ilmu Kesehatan

Volume 8, Issue 2, June 2023, p. 649–656
ISSN 2502-4825 (print), ISSN 2502-9495 (online)

Massage in prevention of decubitus ulcers in bedrest patiens: A literature review

Wahyudi Rahmadani[1], Nur Chayati[2*)]

[1] Master Of Nursing Universitas Muhammadiyah Yogyakarta
[2*)] Universitas Muhammadiyah Yogyakarta

ARTICLE INFO

Article history:

Received 21 January 2023
Accepted 1 April 2023
Published 10 June 2023

Keyword:

Prevention
Massage
Decubitus Ulcers
Bedrest

A B S T R A C T

Background: Decubitus ulcers occur due to prolonged pressure and friction on the skin, especially in the bone protrusion area which causes decreased blood circulation then the local tissue is ischemic, hypoxic, and develops into necrosis causing decubitus ulcers. The most effective nursing interventions to prevent decubitus ulcers is massage. Objective: This literature review aims to find out the type of massage in the prevention of decubitus ulcers in bedrest patients. Method: The research method uses PRISMA with a systematic approach and selection process. Library sources are searched from Scopus, ProQuest, Pubmed, Scient Direct, Ebsco, and Google Scholar databases. Result: Based on the analysis through literature review, determined that the most widely used research is quasi-experimental design, the most widely used type of massage is effluerage, the risk of decubitus ulcers most ≥ 40 years of age with 115 respondents (95%), the percentage of patients was 71 female (54.7%) and 59 men (45.3%). Conclusion: The conclusion of the most widely used type of massage is effleurage, duration of giving massage varies between 3-5 minutes, given twice a day using virgin coconut oil at 5 ml. Demographic factors associated with the risk of decubitus ulcers are age, body mass index (BMI), and bedrest patients

Kata kunci:

Prevention
Massage
Decubitus Ulcers
Bedrest

**) corresponding author*

Dr. Nur Chayati, S. Kep., Ns., M.Kep

Universitas Muhammadiyah Yogyakarta
Jalan Brawijaya, Geblagan, Tamantirto, Kecamatan Kasihan, Kabupaten Bantul, Daerah Istimewa Yogyakarta, Indonesia (55183)

Email: nchayati1983@gmail.com

DOI: 10.30604/jika.v8i2.1989

A B S T R A K

Latar Belakang: Luka dekubitus terjadi karena penekanan dan gesekan secara terus menerus pada kulit yang berkepanjangan, terkhusus pada daerah penonjolan tulang yang menyebabkan menurunnya sirkulasi darah pada area yang tertekan, kemudian jaringan setempat mengalami iskemik, hipoksia, dan berkembang menjadi nekrosis sehingga mengakibatkan luka dekubitus. Salah satu intevensi keperawatan yang efektif dalam pencegahan luka dekubitus adalah dengan massage. Tujuan: *Literature review* ini bertujuan untuk mengetahui jenis *massage* dalam pencegahan luka dekubitus pada pasien bedrest. Metode: Metode penelitian menggunakan PRISMA dengan pendekatan dan proses seleksi yang sistematis. Sumber pustaka ditelusur dari database Scopus, ProQuest, Pubmed, Scient Direct, Ebsco, dan Google Scholar. Hasil: Berdasarkan analisis melalui *literature review* didapatkan hasil bahwa desain penelitian paling banyak digunakan yaitu *quasi experimental*, jenis *massage* paling banyak digunakan yaitu *effluerage*, risiko terjadinya luka dekubitus paling banyak pada usia ≥ 40 tahun sebanyak 115 orang (95%), persentase jumlah pasien perempuan sebanyak 71 orang (54,7%) dan laki-laki sebanyak 59 orang (45,3%). Kesimpulan: Kesimpulan tipe *massage* paling banyak digunakan yaitu *effleurage*, durasi pemberian selama 3-5 menit sebanyak dua kali sehari dikombinasikan dengan *virgin coconut oil* sebanyak 5 ml. Faktor demografi yang berhubungan dengan risiko terjadinya luka dekubitus adalah usia, indeks massa tubuh (IMT) dan pasien yang bedrest.

INTRODUCTION

Decubitus ulcers occur as a result of continuous pressing or friction on the skin (National Pressure Injury Advisory Panel, 2019). Decubitus ulcers are also known by other names such as pressure injury or pressure ulcers which is a condition of damage to the anatomical structure and skin function in the bone protrusion area. Decubitus ulcers are characterized by localized cellular necrosis that occurs as a result of prolonged pressure on soft tissues and bone protrusions. Decubitus ulcers that are left for too long will cause the wound to deepen and can cause infection (Amirsyah et al., 2020; Faridah et al., 2019).

The prevalence of decubitus in the world based on World Health Organization (WHO) data is 8.50 million cases with a percentage (21%). The incidence of decubitus ulcers in acute care as much as 5-11%, long-term care as much as 15-25%, and home health care as much as 7-12% (WHO, 2018). Based on data from the Ministry of Health of the Republic of Indonesia, the incidence of decubitus ulcers in Indonesia is 8.2% from 1000 people and has increased by 0.7% in the last 5 years. The incidence rate is highest in South Sulawesi (12.8%) and the lowest in Jambi (4.5%) (Kemenkes, 2017).

Decubitus ulcers are a symptom of complications from strokes that are not handled properly. Complications from stroke lead to the occurrence of disability and immobility. Disability conditions that cause patients to experience impaired physical mobility will be at risk of decubitus ulcers. The condition of prolonged pressure on the protruding surface area of the bone, causes the circulatory circulation of the depressed area to become blocked. As a result, the local tissue is ischemic, hypoxic, and develops into necrosis, resulting in pressure sores that have the potential to cause complications such as abscesses, osteomyelitis, bacteremia, and fistulas (Amirsyah et al., 2020; Elmawati, 2019; Resa Nirmala Jona et al., 2022). Based on this, it is important to prevent pressure sores in stroke patients.

According to the research of Kottner et al (2019) preventive intervention in nursing as an effort to prevent decubitus is to assess the risk of decubitus, improve the general condition of sufferers, treat skin conditions, body repositioning and massage (Kottner et al., 2019). This is in line with the research of Sulidah & Susilowati (2017) mentioning that giving massage with the effleurage technique is a massage using the entire surface of the palm on the body by rubbing. Then, the surface of the palms and fingers adjusts to the part of the body being massaged (Sulidah & Susilowati, 2017).

Massage can be combined with lotion as a lubricant and moisturizer for the skin. One type of lotion commonly used is virgin coconut oil (VCO), olive oil, walnut oil, and nigela sativa oil (Nurhabibah, 2017). This is supported by research conducted by Laily et al (2019) mentioning that giving VCO can prevent the occurrence of decubitus ulcers in at-risk patients (Laily et al., 2019). Another study conducted by Santiko & Noor Faidah (2020) stated that massage therapy with massage effleurage techniques using VCO is effective in preventing pressure ulcers (Santiko & Faidah, 2020).

Based on the results of previous studies, there is no mention of the location, duration, frequency of massage, and the amount of VCO use as an effort to prevent decubitus ulcers in bedrest patients. Therefore, researchers are interested in conducting literature review research on types of massage in the prevention of decubitus in bedrest patients.

METHODS

The research method uses PRISMA. This literature review uses a systematic approach and selection process. Library sources searched for national and international databases include Scopus, ProQuest, Pubmed, Scient Direct, Ebsco, and Google Scholar. The keywords that will be used in the search are prevention, massage, decubitus ulcers, and bedrest.

This literature review aims to find out the types of massage in the prevention of decubitus ulcers in bedrest patients. The inclusion criteria in determining that an article is worthy of inclusion in the review, namely: bedrest or immobilized patients who are hospitalized or at home, journal publications in 2017-2022, and types of research articles, namely quasi experiments, randomized controll trials (RCTs), observational studies (cross sectional, cohort, case control), descriptive studies, and guidlines). Meanwhile, the exclusion criteria are not bedrest or immobilized patients, types of qualitative research articles (systemic review, meta-analysis, literature review), and time span ≤2017.

RESULTS

Based on the results of article searches through databases namely Scopus, ProQuest, Pubmed, Scient Direct, Ebsco, and Google Scholar, it shows high relevance to topics reviewed between 2017-2022 and full text totaling 1115 articles. After the duplication of articles was issued, then a screening of titles and abstracts was carried out on 809 articles entered into the next stage, namely review and eligibility based on the inclusion and exclusion criteria that have been determined by the researcher. Results obtained 7 qualified research articles. After that, a quality assessment was carried out and synthesized in the final report of the literature review. Figure 1 shows the process of searching and reviewing literature. After specifying the data for each article found by the researcher the researcher's name research title research field research design research sample type of intervention and summary of search results are prepared in Table 1.

DISCUSSIONS

Massage

Massage is technique on the body by rubbing circularly repeatedly gently and slowly using the hands with the aim of improving circulation and blood circulation (Narsih, 2015; Safitri, 2017). According to another study conducted by Aini (2017), the massage effleurage technique is a massage technique with soft, slow, and uninterrupted swabs. Massage given for 3-5 minutes twice a day can reduce pressure on the body, provide a relaxing effect, and improve blood flow so as to improve circulation in areas of the skin that are at risk of decubitus (Aini, 2016).

Based on research conducted by Setiani (2015) it is stated that massage is a type of nursing intervention that is effective in preventing decubitus (Setiani, 2015). This is in line with the results of the literature review in 7 articles that mention massage can prevent the occurrence of decubitus wounds (Amoldeep et al., 2019; Angeline et al., 2021; Badrujamaludin et al., 2021; Darmareja et al., 2020;

Muasyaroh et al., 2020; Noventi et al., 2021; Santiko & Faidah, 2020).

This is in line with the research of Sulidah & Susilowati (2017) mentioning that massage effleurage is a movement using the entire surface of the palms and fingers on the part of the body that is massaged by rubbing. Massage is given for 4-5 minutes for twice a day (Sulidah & Susilowati, 2017). In order to give massage more optimally, it can be combined with lotion that functions as a skin moisturizer and makes it easier when giving massage. There are several lotions used, such as virgin coconut oil, olive oil, walnut oil, and nigela sativa oil (Nurhabibah, 2017).

Virgin coconut oil (VCO) is a processed coconut fruit made by physical or biochemical methods then produces pure coconut oil which contains lauric acid (monolaurin) as much as 32.73%, so it has an anti-microbial effect, both for the prevention of bacterial or fungal growth (Rahmawati & Khaerunnisya, 2018).

VCO has benefits as an anti-inflammatory, analgesic, and antipyretic because it can reduce transudate formation, granuloma formation, and alkaliphosphatase serum activity (Wallace, 2019). VCO is also easily absorbed by the skin and contains vitamin E which is useful for stabilizing cell membranes and protecting against damage due to free radicals, as well as fat deposits in organelles (Kasor, 2015; Widiayanti, 2015). This is also supported by Sumah's research (2020) which states that giving VCO is an effort to prevent decubitus from occurring. VCO is administered topically as much as 5 ml. Then effluerage massage given for 4-5 minutes in the area of the sacrum, dorsal, humerus, and patella. The results of the study were tested with the Wilcoxon test, obtained a p-value with 0.001 with (α=0.5), meaning that VCO combined with massage effluerage can prevent the occurrence of decubitus (Sumah, 2020).

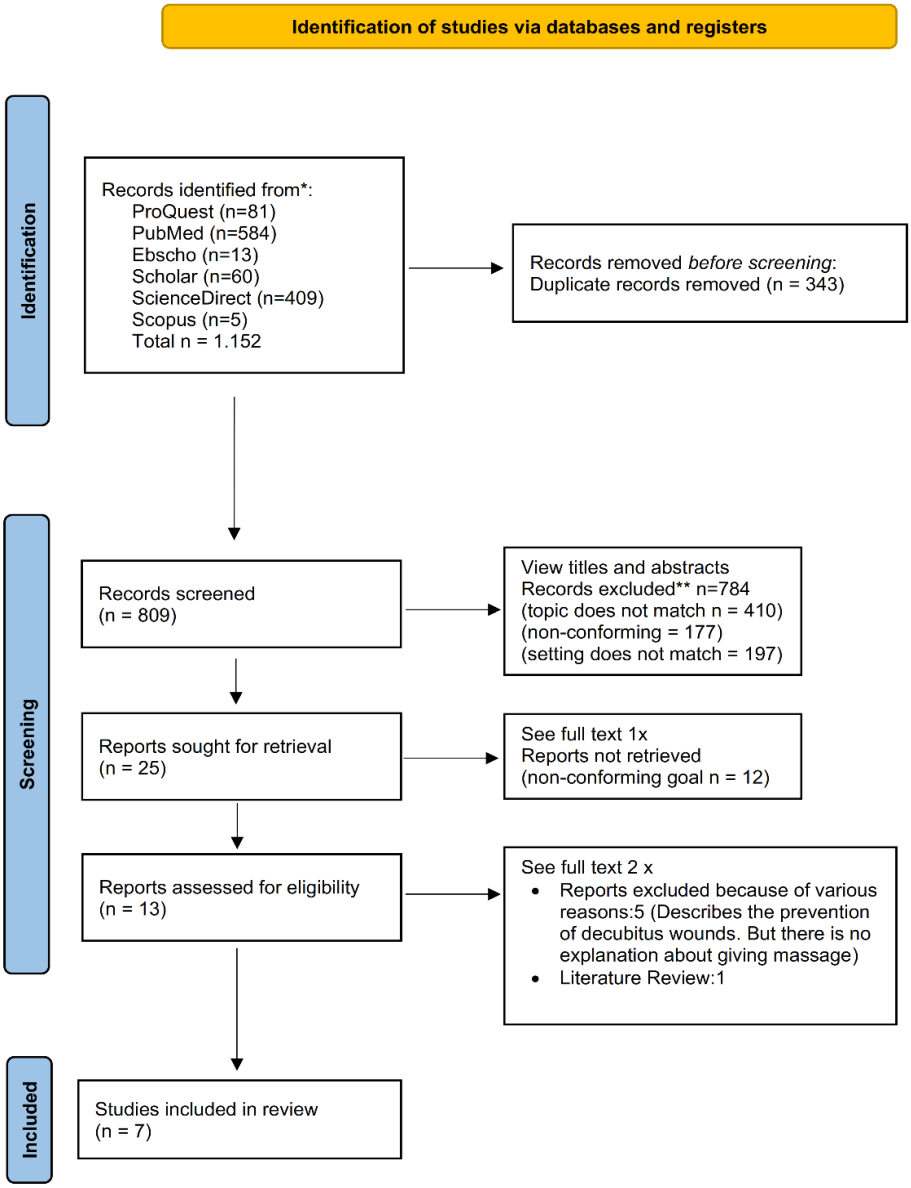

Figure 1. Prisma Diagram

TABLE 1. Literature Findings

No	Author, year	Title	Design, country	Setting	Characteristics of respondents	Outcome	Strength	Limitation
1	Darmareja, Rycco et al., 2020	The Effect of Effleurage Massage Using Virgin Coconut Oil on The Risk Level of Pressure Ulcers in Intensive Care Unit Patients	Quasi experiment one group pretest and posttest, Indonesia	Respondents were treated in the Intensive Care Unit Room	Gender Age Level Awareness/ GCS	Duration of massage and changes in the average risk of pressure sores before and after massage effleurage	Research design quasi experimental	There is no comparison group There was no mention of pressure sores risk score
2	Angeline et al., 2021	Effect of Vibration Effleurage Petrissage MASsager Device on Prevention of Pressure Ulcer among Immobilized Patients: An Experimental Study	Quantitative research with true experimental, India	Patients admitted to wards and critical care units with a decubitus injury risk score of 7-14	Risk score for decubitus injury	Duration of massage, change in the average value of pressure wound risk	Research using the true method experimental with experimental and control groups. Research instrument: Braden scale.	There is no distribution data from the inclusion criteria data (gender, age level)
3	Badrujamaludin, Asep et al., 2021	Pengaruh mobilisasi dan massage terhadap pencegahan risiko luka tekan pada pasien tirah baring	A quasi-experimental, Indonesia	Bedrest patient in ICU Room, Indonesia	Gender Decubitus risk score	Duration, location, and changes in pressure ulcers risk score	Quasi experimental with pretest posttest non-equivalent control group design	Limited data on respondent characteristic, such as age
4	Santiko, Noor Faidah, 2020	Pengaruh massage efflurage dengan virgin coconut oil (VCO) terhadap pencegahan dekubitus pada pasien bedrest diruang instalasi rawat intensive (IRIN) RS Mardi Rahayu Kudus	Quasi experimental	All bedrest patients treated in the Intensive Care Installation room, Indonesia	Gender Age	Duration, location, and changes in pressure ulcers risk score	Quasi Experimental with group control.	Not mentioned Decubitus Risk Level The control group was not given intervention as a comparison
5	Amoldeep, Baby et al., 2019	Practices Followed by Nurses for Prevention of Pressure Ulcer among Patient Admitted in Tertiary Rural Care Hospital	Quantitative approach was adopted for descriptive study, India	157 Nurse people who work in Medical Ward, Surgical Ward, Ortho Ward &; Neuro Ward, India	Gender Female Religion Marital status Work experience Where to work	Duration of massage and the how many of days given the massage	Quasi-experimental with group control.	Not mentioned Decubitus Risk Level The control group was not given the intervention
6	Muasyaroh, Nurul, 2019	Pengaruh Massage dengan VCO (Virgin Coconut Oil) Terhadap Risiko Dekubitus Pada Pasien Penurunan Kesadaran di Ruang Icu Rsud Dr. H. Soewondo Kendal	Quasy Experimental pretest posttest without control	All patients with decreased consciousness were treated in the ICU room of RSUD dr H. Soewondo Kendal, Indonesian	Age Gender Education	Duration of massage. There was a decrease in the number of patients who suffered pressure sores	Quasi Experiment design with pretest post-test without control	Not using the control group as a comparison did not mention the type, frequency, duration, and area given massage with VCO
7	Noventi et al., 2021	The Potential of Walnut Oil with Massage Effleurage to Prevent Grade 1 Decubitus Wounds of bed Rest Patients	Quasi-Experimental design (pretest-posttest control group).	Patients who are immobilized more than 2 day, Indonesian	Age Weight Risk level of decubitus	The duration of massage, the dose of walnut oil use and changes in the percentage of patients at risk of decubitus	Research design experimental with control group	Research is few and not explained the duration of massage administration and its location

ISSN 2502-4825 (print), ISSN 2502-9495 (online)

This is also supported by the research of Negari et al (2022) in the HCU using wilcoxon test results obtained p-value 0.001<α:0.05. The conclusion that massage effluerage using oil affects the decubitus score in bedrest patients (Negari et al., 2022). In addition to the interventions above, nursing measures in the prevention of decubitus ulcers are by mobilization every 2 hours, right and left oblique repositioning, giving lotion, massaging, keeping the bedding dry and clean, maintaining skin hygiene, and providing pads at the pressure point of bone protrusions (PPNI, 2018). In another study conducted by Marsaid et al (2016) stated that there was an increase in the average score after being reposition of 30 degrees with an increase of 2.625 with the results of the paired sample t-test obtained p value = 0.000<0.05) (Marsaid et al., 2019).

This is supported by research by Prabawo & Rahmanti (2019), mentioning that 30 degree inklin lateran position therapy can prevent decubitus. 30 degree inklin lateran position therapy aims to reduce friction and pressure on the skin area. The action of keeping the head 30 degrees high and applying cushioning to certain areas such as behind the back, under the head, between the right knee and left knee, and between the ankles can prevent decubitus. Therapy is done every 2 hours for 6 days (Prabowo & Rahmanti, 2019).

Another study conducted by Badrujamaludin et al (2021), the provision of progressive mobilization interventions in bedrest patients by increasing the position of the bed to 30 degrees. After that it is given instead of the right tilt and left tilt positions once every 2 hours for 2 days. At the time of the pretest, some participants were in the high risk category of 8 patients (53,3%), moderate risk of 4 patients (26.7%), and very high risk of 3 patients (20%). Meanwhile, during the posttest, the moderate risk category was obtained as many as 8 patients (53,3%) and as many as 7 patients (46,7%) in the high risk category (Badrujamaludin et al., 2021).

In another study conducted by Andani et al (2016) on 60 respondents of bedrest patients. In the treatment group, bedding was given with a 15 minute back massage every morning and evening for 3 days. While in the control group only given the repositioning once every 2 hours. The results of the study obtained a mean value in the control group after being given a bed transfer of 13,50 and in the intervention group given a bed transfer (right and left oblique) combined with a back massage mean value of 14,33. Mann Whitney's statistical test results with a p-value of 0,031. The conclusion is that bed transfer combined with back massage is effective in lowering the risk of decubitus (Andani et al., 2016).

Along with the development of technology, giving massage is not only done with both hands, but can use the help of tools. In the research of Angeline et al (2021), mentioned that the use of the Vibration Effleurage Petrissage MASsager (VEPMAS) tool lasts 5-10 minutes, twice a day which is done for 5 days. The results of the study found a decrease in the average risk score of decubitus ulcers by 3,16. The conclusion is that giving massage using the VEPMAS tool can reduce the risk score of decubitus ulcers (Angeline et al., 2021).

Demographic Factors Influencing the Occurrence of Decubitus in Bedrest Patients

Age

The results showed that the risk of decubitus ulcers was the most at the age of ≥ 40 years with the number of respondents as many as 115 people with a percentage of 95% (Darmareja et al., 2020; Muasyaroh et al., 2020; Noventi et al., 2021; Santiko & Faidah, 2020). This is also in line with the statement of Andani et al (2018) mentioning that the aging process results in reduced subcutaneous fatty tissue, collagen tissue, and elastin. As a result, the reduced efficiency of capillary collateral on the skin, causes the skin to become thinner and brittle, thus risking decubitus ulcers (Andani et al., 2016).

In another study conducted by Agus Salim Thamrin et al (2019) stated that the age of 35-60 years is prone to decubitus with a percentage of 62,5%. This is due to the process of decreasing physical and psychological abilities (Agus Salim Thamrin et al., 2019).

Gender

Based on the results of the article review, it was found that most of the respondents in the study were women as many as 71 people (54,7%), while men were 59 people (45,3%) (Badrujamaludin et al., 2021; Darmareja et al., 2020; Muasyaroh et al., 2020; Santiko & Faidah, 2020). According to Safitri et al (2017) that gender is not a risk factor for decubitus to occur (Safitri, 2017). This is in line with the results of research by Riani et al (2022) mentions that gender and the incidence of decubitus ulcers have no relationship (Riani et al., 2022).

Risk Factor Pressure Ulcers

Based on the results of the review, most respondents experienced the risk of decubitus ulcers, most of which occurred in the moderate risk category (Angeline et al., 2021; Badrujamaludin et al., 2021; Noventi et al., 2021). Patients who bedrest for a long time are at risk of developing decubitus ulcers. If no treatment or prevention is carried out, then the incidence of decubitus ulcers in patients can increase the length of treatment, add other problems, affect recovery, and risk infection (Iswinarno, 2019). In addition, the level of mobility ability in patients is a factor that can influence the occurrence of decubitus ulcers (Ignatavicius & Linda W, 2012).

Prevention of decubitus is a priority in treatment and is not limited only to immobilized patients (Potter & Perry, 2010). In addition to immobilized patients, nutritional status also affects the incidence of decubitus ulcers. In patients who have a body mass index (BMI) value below normal (underweight), three times the risk of decubitus injury. This is due to the condition of the patient who has a slight layer of fat, thus causing an increase in emphasis on the bone area. Meanwhile, in patients with a BMI value of more than normal (overweight), the risk is eleven times greater the occurrence of decubitus wounds. This is caused by excessive sweat production and builds up on the skin folds (Hyun et al., 2014; Ness et al., 2018)

Efforts to prevent decubitus in elderly patients, immobilization, loss of consciousness, and having a risky BMI value can be done by minimizing friction on the skin with the surface of objects or clothing. In addition, it prevents damage to skin integrity by observing the condition of the skin, maintaining linen hygiene, switching positions every two hours and massage (Butcher et al., 2018; Bambang, 2011).

CONCLUSIONS

Based on the analysis through the literature review that has been carried out, it can be concluded that the type or type of massage is most widely used for the prevention of decubitus ulcers, namely effleurage. The time of giving massage varies between 3-5 minutes, given twice a day using lotions such as virgin coconut oil as much as 5 ml. Meanwhile, demographic factors that are at risk of decubitus include age, body mass index (BMI), and bedrest.

The recommendation is to recommend the massage effleurage with VCO as an effort to prevent decubitus while still paying attention to factors related to the occurrence of decubitus ulcers. So that prevention efforts can be carried out optimally and the impact is felt more broadly.

LIMITATION

This article uses only search sources from six databases and some of the literary sources obtained in this search in Indonesian and English.

Funding Statement

This research is not sponsored or endorsed by any institution or organization.

Conflict of Interest Statement

There is no conflict of interest.

REFERENCES

Agus Salim Thamrin, A. M., Halim, W., & Fandy, M. (2019). Studi Kasus Dekubitus Pada Penderita Tirah Baring Yang Dirawat Di Rsu Anutapura Palu Tahun 2018. *Medika Alkhairaat : Jurnal Penelitian Kedokteran Dan Kesehatan*, *1*(3), 89–94. https://doi.org/10.31970/ma.v1i3.37

Aini, L. N. (2016). Perbedaan Masase Effleurage Dan Kompres Hangat Terhadap Penurunan Nyeri Punggung Pada Ibu Hamil Trimester III. *Jurnal Keperawatan Dan Kebidanan*, 148–164. https://adoc.pub/perbedaan-masase effleurage-dan-kompres-hangat-terhadap-penu.html

Amirsyah, M., Amirsyah, M., & Putra, M. I. A. P. (2020). Ulkus Dekubitus pada Penderita Stroke. *Kesehatan Cehadum*, *2*(03), 1–8.

Amoldeep, Baby, Khurana, D., Pooja, Reshu, Saloni, & Sarin, J. (2019). Practices Followed by Nurses for Prevention of Pressure Ulcer. In *International Journal of Nursing Education Scholarship* (Vol. 1, Issue 1).

Andani, M. F., Kristiyawati, sri puguh, & Purnomo, S, E. C. (2016). Efektifitas Alih Baring dengan Masase Punggung Terhadap Resiko Dekubitus pada Pasien Tirah Baring di RSUD Ambarawa. *Jurnal Ilmu Keperawatan Dan Kebidanan (JIKK)*, *5*, 1–11.

Angeline, K., Kandasamy, R., & Chinnappan, P. R. (2021). Effect of Vibration Effleurage Petrissage MASsager Device on Prevention of Pressure Ulcer among Immobilized Patients: An Experimental Study. *Pondicherry Journal of Nursing*, *14*(4), 83–85. https://doi.org/10.5005/jp-journals-10084-13123

Badrujamaludin, A., Melanie, R., & Nurdiantini, N. (2021). Pengaruh mobilisasi dan massage terhadap pencegahan risiko luka tekan pada pasien tirah baring. *Holistik Jurnal Kesehatan*, *15*(4), 610–623.

Butcher, H., Bulechek, G. M., Dochterman, J., & Wagner, C. (2018). *Nursing Interventions Classification 7e (NIC)*.

Darmareja, R., Kosasih, C. E., & Priambodo, A. P. (2020). The Effect Of Effleurage Massage Using Virgin Coconut Oil On The Risk Level Of Pressure Ulcers In Intensive Care Unit Patients. *Jurnal Keperawatan Soedirman*, *15*(3).

Elmawati, C. (2019). Hubungan Peran Keluarga Dengan Pencegahan Decubitus Pada Pasien Stroke Di Ruang Rawat Inap RSUD Muntilan Kabupaten Magelang. *Jurnal Universitas Aisyiyah Yogyakarta*, *53*(4), 130.

Faridah, U., Sukarmin, & Murtini, S. (2019). Pengaruh Posisi Miring Terhadap Dekubitus Pada Pasien. *Jurnal Ilmu Keperawatan Dan Kebidanan*, *10*(1), 155-162.

Huvi Iswinarno Doso; Murtiastutik Indira; Saputro, D. (2019). Profil Klinik Pasien dengan Ulkus Dekubitus di RSUD Dr. Soetomo Surabaya. *Jurnal Profesi Medika : Jurnal Kedokteran Dan Kesehatan*, *Vol 13*, *No 2 (2019): Jurnal Profesi Medika:Jurnal Kedokteran dan Kesehatan*.https://ejournal.upnvj.ac.id/index.php/JPM/article/view/927

Hyun, S., Vermillion, B., Newton, C., Fall, M., Li, X., Kaewprag, P., Lenz, E. R. (2014). Predictive Validity of the Braden Scale for Patients in Intensive Care Units. *American Journal of Critical Care*, *22*(6), 514–520.

Ignatavicius, D. D., & Linda W, M. L. (2012). *Medical Surgical Nursing*.

Kasor, F. (2015). Pengaruh Penggunaan virgin Coconut Oil (VCO) Sebagai Emolient Terhadap Sifat Fisik Dan Stabilitas Vitamin C Dalam Sabun Transparan. *Journal UNY*, *2*(1), 32–48.

Kementerian Kesehatan RI. (2017). *Profil Kesehatan Indonesia 2014* (Vol. 1227, Issue July). https://doi.org/10.1002/qj

Kottner, J., Cuddigan, J., Carville, K., Balzer, K., Berlowitz, D., Law, S., Litchford, M., Mitchell, P., Moore, Z., Pittman, J., Sigaudo-Roussel, D., Yee, C. Y., & Haesler, E. (2019). Prevention and treatment of pressure ulcers/injuries: The protocol for the second update of the international Clinical Practice Guideline 2019. *Journal of Tissue Viability*, *28*(2), 51-58. https://doi.org/10.1016/j.jtv.2019.01.001

Laily, E. I., Saragih, N. P., & Sirait, L. L. (2019). Pengaruh Penggunaan Extra Virgin Olive Oil Pencegahan Luka Tekan pada Pasien Berisiko dengan Skala Braden. *Coping: Community of Publishing in Nursing*,*7*(3),153–158. https://ojs.unud.ac.id/index.php/coping/article/view/55798

Marsaid, Ain, H., Isma Wazida, F., Studi Sarjana Terapan Keperawatan Lawang, P., & Kemenkes Malang, P. (2019). Posisi Tidur Miring 30 Derajat Terhadap Terjadinya Luka Tekan Pada Pasien Stroke DiRSUD Sidoarjo. *Jurnal Keperawatan Terapan (e-Journal)*, *05*(02), 2442–6873. https://ojs.poltekkes-malang.ac.id/index.php/JKT/article/view/916

Muasyaroh, N., Rohana, N., & Aini, D. N. (2020). Pengaruh Masase Dengan Vco (Virgin Coconut Oil) Terhadap Risiko Dekubitus Pada Pasien Penurunan Kesadaran Di Ruang Icu Rsud Dr. H. Soewondo Kendal. *Jurnal Ners Widya Husada*, *7*(3), 38–47.

Narsih, W. (2015). Pemberian Massage Dengan Virgin Coconut Oil (VCO) Terhadap Pencegahan Luka Tekan Pada Asuhan Keperawatan Ny. Sp Dengan Stroke Hemoragik Di Ruang ICU Bed 1 RSUD Karanganyar. *Karya Tulis Ilmiah STIKES Kusuma Husada Surakarta*, 26–27.

National Pressure Injury Advisory Panel. (2019). Prevention and Treatment of Pressure Ulcers : Quick Reference Guide. In *Clinical Practice Guideline*.

Negari, P. M., Rakhmawati, N., & Agustin, W. R. (2022). *The Effect Of Massage Effleurage With Olive Oil (Olive Oil) On Decubitus Prevention In Bedrest Patients In HCU, HCU Anggrek Room RSUD Dr Moewardl*. *23*.

Ness, S. J., Hickling, D. F., Bell, J. J., & Collins, P. F. (2018). The pressures of obesity: The relationship between obesity, malnutrition and pressure injuries in hospital inpatients. *Clinical Nutrition*, *37*(5),1569-1574.https://doi.org/10.1016/j.clnu.2017.08.014

Noventi, I., Soleha, U., & Nurhasina, S. (2021). *Prevent Grade 1 Decubitus Wounds of bed Rest Patients*. 309–314. https://doi.org/10.26699/jnk.v8i3.ART.p309

Nurhabibah. (2017). Asuhan Keperawatan dengan Penerapan Masase menggunakan Minyak Zaitun terhadap Resiko Kerusakan integritas Kulit untuk Mencegah Dekubitus pada Pasien Stroke. *Jurnal Kesehatan Muhammadiyah Gombong*, *5*(1),

Persatuan Perawat Nasional Indonesia (PPNI). (2018). *Standar Intervensi Keperawatan Indonesia: Definisi Dan Tindakan Keperawatan*. Jakarta: DPP PPNI.

Prabowo, A., & Rahmanti, A. (2019).Pengaruh Posisi Lateral Inklin 30 Derajat Terhadap Pencegahan Dekubitus Pada Pasien Stroke Di Ruang Cempaka Rs Pantiwilasa Citarum.*Jurnal*,*4*(1),1–6. https://jurnal.stikeskesdam4dip.ac.id/index.php/SISTHANA/article/view/45%0Ahttps://jurnal.stikeskesdam4dip.ac.id/index.php/SISTHANA/article/download/45/39

Potter, Perry. 2005. Buku Ajar Fundamental Keperawatan. Penerbit buku Kedokteran: EGC: Jakarta.

Rahmawati, E., & Khaerunnisya, N. (2018). Pembuatan VCO (Virgin Coconut Oil) dengan Proses Fermentasi dan Enzimatis. *Journal of Food and Culinary*, *1*(1), 1–6.

Resa Nirmala Jona, Siti Juwariyah, & Ni Wayan Dewi Maharani. (2022). Hubungan Tingkat Pengetahuan Keluarga Terhadap Kejadian Resiko Dekubitus Pada Pasien Stroke. *Jurnal Rumpun Ilmu Kesehatan*, *2*(3), 131–142. https://doi.org/10.55606/jrik.v2i3.699

Riani, Sufrianti, D., & Hastuty, M. (2022). *Studi Kasus Dekubitus dengan Tirah Baring Lama di Wilayah Kerja Puskesmas Bangkinang Kota Tahun 2021*. *6*(23), 1–6.

Safitri, Y. (2017). *Perbandingan Efektifitas Massage Dan Kompres Hangat Terhadap Nyeri Persalinan Kala 1 Fase Aktif Yenny Safitri Dosen Prodi Sarjana Keperawatan FIK Universitas Pahlawan Tuanku Tambusai*.https://journal.universitaspahlawan.ac.id/index.php/ners/article/view/117/86

Santiko, S., & Faidah, N. (2020). Pengaruh Massage Efflurage Dengan Virgin Coconut Oil (Vco) Terhadap Pencegahan Dekubitus Pada Pasien Bedrest Di Ruang Instalasi Rawat Intensive (Irin) Rs Mardi Rahayu Kudus. *Jurnal Keperawatan Dan Kesehatan Masyarakat Cendekia Utama*, *9*(2), 191–202.

Setiani, D. (2015). Efektivitas Massage Dengan Virgin Coconut Oil Terhadap Pencegahan Luka Tekan Di Intensive Care Unit. *Jurnal Husada Mahakam*, *Volume III*(8), 389–442.

Sulidah, & Susilowati. (2017). Pengaruh Tindakan Pencegahan Terhadap Kejadian Dekubitus Pada Lansia Imobilisasi. *Jurnal Ilmiah Ilmu-Ilmu Kesehatan*, *15*(3), 166–170.

Sumah, D. F. (2020). Keberhasilan Penggunaan Virgin Coconut Oil secara Topikal untuk Pencegahan Luka Tekan (Dekubitus) Pasien Stroke di Rumah Sakit Sumber Hidup Ambon. *Jurnal Kedokteran Dan Kesehatan*, *16*(2), 93–102.

Wallace, T. C. (2019). Health Effects of Coconut Oil-A Narrative Review of Current Evidence. *Journal of the American College of Nutrition*, *38*(2), 97–107.https://doi.org/10.1080/07315724.2018.1497562

Widiayanti, A. R. (2015). Pemanfaatan Kelapa Menjadi VCO (Virgin Coconut Oil) Sebagai Antibiotik Kesehatan dalam Upaya Mendukung Visi Indonesia Sehat 2015. *Prosiding Seminar Nasional Pendidikan Biologi 2015*, 577–584.

Wiyoto, Bambang Trisno. (2011). *Remedial Massage: Panduan Pijat Penyembuhan Bagi Fisioterapis, Praktisi dan Instruktur* (Cet. 1). Yogyakarta: Nuha Medika.

World Health Organization. 2018. Stroke Cerebrovascular Accident.

 ISSN 2502-4825 (print), ISSN 2502-9495 (online)