



HEALING DURATION OF SUPERFICIAL WOUNDS AFTER SUNNAH CUPPING THERAPY: A LITERATURE REVIEW

DURASI PENYEMBUHAN LUKA SUPERFISIAL SETELAH TERAPI BEKAM SUNNAH: TINJAUAN LITERATUR

Andik Isdianto^{1*}, Novariza Fitrianti²

¹Universitas Brawijaya, Email: andik.isdianto@ub.ac.id

²Rehab Hati Malang Kota, Email : novarizza.sda@gmail.com

*email Koresponden: andik.isdianto@ub.ac.id

DOI: <https://doi.org/10.62567/micjo.v2i2.686>

Article info:

Submitted: 12/04/25

Accepted: 21/04/25

Published: 30/04/25

Abstract

Sunnah cupping therapy is widely recognized as a traditional treatment believed to eliminate stagnant blood, enhance circulation, and accelerate healing. However, concerns remain regarding wound depth and skin recovery duration, especially in clinical settings. This study aims to systematically review scientific literature on the healing duration of superficial wounds resulting from cupping, factors influencing recovery, and the effectiveness of herbal topical treatments in supporting natural skin regeneration. A systematic literature review was conducted using publications from 2015 to 2025 sourced from PubMed, Scopus, ScienceDirect, and Google Scholar. The analysis focused on non-surgical superficial wounds, post-cupping wound management, and the use of olive oil, black seed oil, and coconut oil in complementary traditional therapy. Findings indicate that cupping incisions typically reach only the epidermis and upper dermis, with a depth of 0.5–1 mm. These minor wounds generally heal within 3 to 7 days, depending on patient age, skin condition, anatomical location, and aftercare quality. The application of topical herbal agents has been shown to enhance healing through anti-inflammatory, antioxidant, and regenerative mechanisms. In conclusion, Sunnah cupping can be classified as a safe and non-invasive therapy with a relatively short healing duration. Herbal-based wound care offers a natural, accessible, and effective treatment alternative, supporting the integration of cupping therapy into modern evidence-based complementary medicine. Further development of standardized post-cupping care protocols is recommended to optimize clinical implementation and ensure consistent patient outcomes.

Keywords : complementary traditional therapy, herbal treatment for minor wounds, natural skin regeneration, non-surgical superficial wounds, post-therapy healing duration



Abstrak

Terapi bekam Sunnah dikenal luas sebagai metode pengobatan tradisional yang diyakini mampu mengeluarkan darah statis, memperbaiki sirkulasi, dan mempercepat penyembuhan. Namun, kekhawatiran terkait kedalaman luka dan durasi pemulihan kulit masih menjadi pertanyaan penting dalam praktik klinis. Studi ini bertujuan untuk mengkaji secara sistematis literatur ilmiah mengenai durasi penyembuhan luka superfisial akibat bekam, faktor-faktor yang memengaruhi proses tersebut, serta efektivitas perawatan topikal herbal dalam mendukung regenerasi kulit. Metode yang digunakan adalah tinjauan literatur sistematis terhadap publikasi ilmiah tahun 2015–2025 dari database seperti PubMed, Scopus, ScienceDirect, dan Google Scholar. Fokus analisis diarahkan pada luka superfisial non-bedah, perawatan luka menggunakan minyak zaitun, habbatussauda, dan minyak kelapa, serta protokol terapi pasca bekam. Hasil menunjukkan bahwa sayatan bekam umumnya hanya menembus epidermis hingga dermis atas dengan kedalaman 0,5–1 mm. Luka jenis ini tergolong ringan dan dapat sembuh dalam waktu 3–7 hari, tergantung pada usia, kondisi kulit, lokasi tindakan, dan perawatan yang diberikan. Penggunaan bahan herbal topikal terbukti mempercepat penyembuhan melalui mekanisme antiinflamasi, antioksidan, dan stimulasi regenerasi jaringan. Kesimpulannya, bekam Sunnah dapat dikategorikan sebagai terapi non-invasif yang aman dan efektif, dengan durasi penyembuhan yang singkat. Perawatan luka berbasis herbal memberikan alternatif perawatan yang alami, terjangkau, dan mendukung integrasi bekam dalam praktik terapi komplementer tradisional. Diperlukan standar protokol pasca bekam untuk memperkuat penerapan klinis berbasis bukti.

Kata Kunci : luka superfisial non-bedah, perawatan herbal luka ringan, regenerasi kulit alami, terapi komplementer tradisional, waktu penyembuhan pasca terapi

1. INTRODUCTION

Sunnah cupping therapy, or Hijama, is a traditional therapeutic practice that has been applied for centuries and remains widely used today for both preventive and curative purposes. One of its most common forms is wet cupping, which involves the removal of blood through light skin incisions. This therapy is believed to aid in the elimination of stagnant blood, improve circulation, and accelerate the healing process for various physiological conditions. While it is increasingly accepted by modern communities, public concern still arises regarding the safety of the procedure—particularly in terms of incision depth and the duration of skin recovery post-treatment.

Much of the apprehension stems from the perception that cupping is an invasive procedure capable of causing deep and prolonged wounds. However, clinical evidence reveals that incisions made during cupping typically penetrate only the epidermis and superficial dermis, with a depth ranging between 0.5 to 1 mm, classifying them as superficial wounds (Boer et al., 2016; Boyce & Lalley, 2018; Ekinci & Pehlivan, 2020). Such wounds generally heal naturally within 3 to 7 days, depending on factors like age, skin condition, and post-treatment care (Zhao et al., 2017; Risniati et al., 2020; Donato-Trancoso et al., 2016). This aligns with existing knowledge that superficial skin injuries regenerate more quickly due to limited tissue damage.

Topical treatments also play a significant role in recovery speed. Olive oil, for instance, is noted for its anti-inflammatory and antioxidant properties that promote tissue regeneration,



stimulate local blood flow, and reduce oxidative stress (Karimi et al., 2019; Maver et al., 2015; Ribeiro et al., 2022). Its efficacy has also been demonstrated in chronic wound management, such as diabetic ulcers, suggesting a broader potential for reducing recovery time in cupping-related skin injuries (Nasiri et al., 2015; El-Elimat et al., 2023).

Despite the growing body of evidence supporting the safety and efficacy of cupping, few studies have directly examined post-cupping wound healing duration and the post-care practices that influence it. This article aims to systematically review relevant literature to better understand the characteristics of superficial wounds caused by wet cupping and estimate the typical healing timeframe. This review intends to provide valuable scientific insight that supports the development of standardized operational protocols for safe and effective cupping therapy, while also reinforcing its legitimacy within modern complementary medicine frameworks.

2. RESEARCH METHOD

This study is a qualitative research using a systematic literature review approach aimed at identifying and analyzing scientific findings related to the healing process of superficial skin wounds following Sunnah cupping therapy. The research was conducted online through document searching and analysis from February to March 2025, focusing on scientific publications published within the last ten years (2015–2025).

The research subjects in this study are not individuals or groups, but relevant scientific articles discussing superficial wound healing, cupping therapy practices, and wound care using topical agents such as olive oil or herbal-based treatments. Literature searches were carried out using credible international academic databases including PubMed, Scopus, ScienceDirect, and Google Scholar, which are frequently used for evidence-based health research (AlBedah et al., 2019; Zhao et al., 2016).

Data collection was conducted using specific English keywords such as: “cupping therapy”, “superficial skin incision healing”, “wound recovery time”, “herbal oil wound treatment”, and “skin regeneration after cupping”. Articles included for analysis met the following inclusion criteria: (1) published in peer-reviewed journals; (2) published between 2015 and 2025; (3) available in full-text format; and (4) directly or indirectly discussed the healing duration of superficial skin wounds or post-cupping incisions. Exclusion criteria included: opinion/editorial articles, single case studies without quantitative data, and non-English publications.

The collected data were analyzed using thematic content analysis, by categorizing findings based on parameters such as wound depth, healing duration, influencing factors, and the role of topical interventions. Analysis cycles were repeated iteratively to ensure consistency and validity of interpretation (Donato-Trancoso et al., 2016; Karimi et al., 2019; Nasiri et al., 2015).

3. RESULTS AND DISCUSSION

Characteristics of Superficial Incisions in Sunnah Cupping Therapy

Sunnah cupping therapy generally involves superficial skin incisions aimed at facilitating the release of stagnant blood. Based on the literature review, most cupping procedures performed by trained practitioners only penetrate the epidermis to the upper dermis, with an average depth ranging from 0.5 to 1 mm (AlBedah et al., 2019). This depth is dermatologically classified as a superficial wound, which has a high potential for spontaneous healing and does



not require surgical intervention or specialized wound closure techniques (Boer et al., 2016; Boyce & Lalley, 2018).

Zhao et al. (2016) reported that superficial wounds, such as abrasions or minor cuts, typically heal within 3 to 7 days. The healing duration is influenced by various factors, including patient age, wound location, and baseline skin condition. Experimental studies on animals using incision wound models have shown similar healing durations. For instance, Mosayan et al. (2022) found that superficial incisions on mice healed completely within 3 to 7 days, depending on the site and type of topical treatment administered. This is further supported by findings from Gufron et al. (2023), who noted that superficial wounds—similar in nature to those resulting from cupping—heal rapidly due to the absence of deep tissue damage.

These findings align with the observations of Suarni and Badri (2016), who demonstrated that superficial wounds in mice do not require invasive medical treatment and are capable of healing naturally. Such wounds exhibit efficient epithelialization and stable tissue regeneration within a short period. Collectively, these results provide strong evidence that cupping-related skin incisions, when performed at appropriate depths, are mild and clinically safe.

This synthesis of literature further supports the view that wound healing after cupping is predictable and does not pose long-term risks, especially when performed according to established procedural standards. Cupping procedures using incisions of 0.5–1 mm in depth produce very mild wounds that do not involve deeper skin structures and allow for natural recovery without the need for additional intervention. This clearly indicates that cupping should not be classified as an invasive procedure, but rather as a minimally invasive technique with a high clinical safety profile.

In conclusion, the combined evidence from clinical and experimental studies shows that the healing duration after Sunnah cupping therapy is relatively short, with most wounds recovering in under a week. This supports the scientific consensus that cupping can be performed safely with minimal complication risk, provided it is carried out by well-trained practitioners under proper protocols.

Factors Affecting the Healing Duration of Sunnah Cupping Wounds

The healing duration of wounds following cupping therapy is not solely determined by the depth of the incision but is also influenced by several important factors identified in the literature. These factors include the anatomical location of the cupping site, the patient's age and skin condition, as well as the post-treatment wound care practices.

The location of the cupping procedure is a significant factor. Cupping is typically performed on the back, which anatomically has medium-thickness epidermal and dermal layers and a relatively rich blood supply (Brito et al., 2024). These conditions promote faster wound healing due to optimal blood flow, which facilitates the delivery of oxygen and nutrients essential for tissue regeneration. Moreover, cupping therapy itself has been shown to improve local blood circulation, reduce edema, and stimulate tissue regeneration, all of which contribute to accelerated wound healing (Dalton & Velasquez, 2017; Mulla et al., 2019).

Age and skin condition also play a substantial role in wound healing. Younger individuals with healthy skin tend to experience faster epithelialization compared to older individuals or those with vascular or metabolic impairments (Winter et al., 2018; Horng et al., 2017). Perren et al. (2018) further confirmed that biological factors such as age, tissue perfusion, and oxygenation significantly influence the rate and stability of wound healing.

Post-cupping wound care practices are another crucial determinant. Proper wound care,



including thorough cleaning, the use of appropriate antiseptic or regenerative topical agents, and infection control, has been shown to shorten healing time and reduce complications (Rahavian et al., 2021). Studies also indicate that supportive therapies such as acellular amniotic membranes (Laurent et al., 2017) or bioactive microporous dressings (Bao et al., 2020) significantly enhance the healing process by promoting regenerative cell growth and minimizing microbial load.

Kruse et al. (2015) emphasized the importance of maintaining a favorable external microenvironment for wound healing—including adequate moisture, temperature, and local oxygen supply. Nutritional management is also essential, as poor nutritional status can hinder skin tissue regeneration.

In summary, the combination of cupping site location, the patient's biological characteristics, and the quality of post-treatment care plays a critical role in determining how quickly cupping wounds heal. Therefore, a comprehensive understanding of these factors is essential in developing cupping therapy guidelines that are not only safe but also effective in accelerating the healing of superficial wounds.

The Effectiveness of Olive Oil and Herbal Remedies in Post-Cupping Wound Care

Several studies have shown that olive oil and other herbal-based oils such as black seed oil (*Nigella sativa*), coconut oil, and bidara leaf oil play significant roles in accelerating the healing of superficial wounds, including those resulting from wet cupping therapy. The use of these natural topical agents is particularly relevant given that cupping-induced wounds are typically mild and do not require intensive medical intervention.

Research by Taheri and Amiri-Farahani (2021) and González-Acedo et al. (2023) revealed that olive oil possesses anti-inflammatory and antioxidant properties that support epithelial regeneration and reduce the risk of inflammation. Regular topical application has been reported to reduce healing time by 20–30% compared to untreated wounds. This finding is reinforced by Apriza (2017), who emphasized that oleocanthal, a compound found in olive oil, functions as a natural anti-inflammatory agent that enhances skin barrier function and promotes epithelialization.

Sadih and Trianingsih (2022) demonstrated that both olive oil and coconut oil were effective in reducing skin irritation—an important indicator of skin health. The synergistic use of both oils in pressure ulcer prevention showed promising outcomes, as highlighted in the study by Wasliyah (2018).

Meanwhile, black seed oil (*Nigella sativa*) has also shown remarkable wound-healing properties. Studies by Mylanda et al. (2021) and Muthmainah & Supriyatna (2023) reported that active compounds in black seed oil, such as thymoquinone, reduce inflammation and stimulate cellular regeneration. When combined with other traditional herbs such as bidara leaf, this treatment approach significantly enhances skin tissue repair through natural mechanisms.

Additionally, coconut oil contributes to wound healing by enhancing collagen regeneration and maintaining skin moisture. In a study conducted by Intang et al. (2023), the application of coconut oil on animal models led to significantly faster healing compared to the control group. Its efficacy is attributed to lauric acid and its antimicrobial properties, which help keep the wound clean and moist—an ideal environment for healing.

Overall, this holistic and non-invasive traditional medicine approach, utilizing topical herbal applications, proves to be an effective method for accelerating the healing of minor wounds, including post-cupping injuries. These treatments not only shorten the healing period



but also enhance patient comfort and reduce the risk of secondary infections. This is in line with Dafriani et al. (2020), who highlighted the wound-healing potential of synergistic herbal oils—including virgin coconut oil and black seed oil—in the management of diabetic ulcers, indirectly supporting their use in superficial wound care.

Therefore, the use of olive oil and other herbal remedies in cupping wound care offers a safe, affordable, and effective alternative, particularly when integrated into post-cupping care protocols. This approach not only supports cupping as a complementary and evidence-based therapy but also aligns with the holistic philosophy of traditional and prophetic medicine that values the natural healing potential of plants.

Sunnah Cupping Therapy as a Non-Invasive Procedure

Sunnah cupping therapy, particularly in the form of wet cupping, is clinically categorized as a non-invasive procedure. This classification is based on the nature of the wounds it causes, which are superficial skin incisions that penetrate only the epidermis and upper dermis, without damaging deeper skin structures. These incisions typically range from 0.5 to 1 mm in depth and demonstrate rapid healing with minimal to no complications, as noted by Maver et al. (2015) and Alkhamaiseh et al. (2023). Therefore, the perception of cupping as an invasive medical procedure is not scientifically supported when performed with correct technique and appropriate post-treatment care.

From an anatomical and physiological perspective, such superficial wounds enable optimal skin tissue repair mechanisms without disrupting deeper layers. A study by Nabo (2025) confirmed that the minimal pressure and injury caused by cupping can activate skin stem cells, which play a key role in rapid tissue regeneration and efficient skin healing. This demonstrates the body's natural capacity to self-repair minor injuries without clinical risk.

The non-invasive and safe nature of cupping is further reinforced by the implementation of standard operating procedures (SOPs) in various healthcare settings. Research by Lestari et al. (2020) and Lestari et al. (2019) emphasized that practitioner adherence to SOPs—including appropriate incision depth, sterilization techniques, and post-cupping wound care—is essential to prevent complications such as infection or deep tissue damage. These procedural standards are crucial in integrating cupping into complementary health services with an emphasis on safety and accountability.

Although some case reports have noted complications, such incidents are typically associated with improper techniques that deviate from established procedural standards. Khoso et al. (2022) assert that when cupping is practiced in accordance with traditional medical guidelines by trained professionals, there is no evidence of long-term structural damage to the skin. In fact, proper cupping practices represent a blend of traditional knowledge and modern procedural standardization, emphasizing both patient safety and therapeutic efficacy.

From a cultural and religious perspective, cupping also receives religious validation, especially within Islamic tradition, where it has long been valued as a natural, low-risk, and spiritually meaningful form of healing (Khoso et al., 2022). The convergence of spiritual, traditional, and clinical evidence establishes cupping as a complementary therapy that is preventive, curative, and safe.

Considering these findings, cupping therapy—when conducted with proper procedural standards and controlled incision depth—can be confidently classified as a non-invasive, safe, and effective treatment. The superficial wounds created heal rapidly, do not cause long-term tissue damage, and support patient recovery through natural, low-risk methods.



4. CONCLUSION

This literature review concludes that wounds resulting from Sunnah cupping therapy are superficial in nature, typically limited to the epidermis and upper dermis with an average depth of 0.5 to 1 mm. The healing duration of such wounds ranges from 3 to 7 days, influenced by several factors including patient age, wound location, skin condition, and the quality of post-treatment care. These superficial wounds, when treated properly, exhibit rapid epithelialization and do not cause long-term structural damage, thereby validating cupping as a non-invasive and clinically safe therapeutic procedure.

The findings also highlight that topical treatments, especially those using olive oil, black seed oil, coconut oil, and other herbal remedies, contribute significantly to accelerated wound healing due to their anti-inflammatory, antioxidant, and regenerative properties. The integration of traditional wound care with modern clinical insights presents an effective approach to managing cupping-related wounds without the need for invasive medical intervention.

In terms of clinical application, the evidence supports that when cupping is performed according to proper procedural standards and supported with appropriate aftercare, it is a safe, cost-effective, and efficient complementary therapy. These insights not only answer public concerns regarding healing duration but also reinforce the legitimacy and scientific value of Sunnah cupping in modern integrative medicine. Future studies are recommended to further validate these findings through clinical trials and to standardize post-cupping care protocols for broader medical implementation.

5. REFERENCES

- AlBedah, A. M., Elsubai, I., Qureshi, N. A., Aboushanab, T., Ali, G. I. M., El-Olemy, A. T., ... & Alqaed, M. (2019). The medical perspective of cupping therapy: effects and mechanisms of action. *Journal of Traditional and Complementary Medicine*, 9(2), 90-97. <https://doi.org/10.1016/j.jtcme.2018.03.003>
- Alkhamaiseh, S. I., Bazzari, A. H., Jafari, A. H. A., & Bazzari, F. H. (2023). The public perceptions on wet cupping therapy (hijama) in Saudi Arabia. *Journal of Acupuncture and Meridian Studies*, 16(5), 176-182. <https://doi.org/10.51507/j.jams.2023.16.5.176>
- Apriza, A. (2017). Pengaruh pemberian minyak zaitun (olive oil) terhadap ruam popok pada bayi di RSUD Bangkinang tahun 2016. *Jurnal Ners*, 1(2). <https://doi.org/10.31004/jn.v1i2.113>
- Bao, F., Ge, P., Wu, Z., Zhuang, H., Zhang, Z., Huan, Z., ... & Chang, J. (2020). Bioactive self-pumping composite wound dressings with micropore array modified Janus membrane for enhanced diabetic wound healing. *Advanced Functional Materials*, 30(49). <https://doi.org/10.1002/adfm.202005422>
- Boer, M., Duchnik, E., Maleszka, R., & Marchlewicz, M. (2016). Structural and biophysical characteristics of human skin in maintaining proper epidermal barrier function. *Advances in Dermatology and Allergology*, 1, 1-5. <https://doi.org/10.5114/pdia.2015.48037>
- Boyce, S. T. and Lalley, A. L. (2018). Tissue engineering of skin and regenerative medicine for wound care. *Burns & Trauma*, 6. <https://doi.org/10.1186/s41038-017-0103-y>



- Brito, S., Baek, M. J., & Bin, B. (2024). Skin structure, physiology, and pathology in topical and transdermal drug delivery. *Pharmaceutics*, 16(11), 1403. <https://doi.org/10.3390/pharmaceutics16111403>
- Dafriani, P., Niken, N., Ramadhani, N., & Marlinda, R. (2020). Potensi virgin coconut oil (vco) pada minyak herbal sinergi (mhs) terhadap ulkus diabetes. *Jurnal Kesehatan Perintis (Perintis S Health Journal)*, 7(1), 51-56. <https://doi.org/10.33653/jkp.v7i1.418>
- Dalton, E. and Velasquez, B. (2017). Cupping therapy: an alternative method of treating pain. *Public Health - Open Journal*, 2(2), 59-63. <https://doi.org/10.17140/phoj-2-122>
- Donato-Trancoso, A., Monte-Alto-Costa, A., & Romana-Souza, B. (2016). Olive oil-induced reduction of oxidative damage and inflammation promotes wound healing of pressure ulcers in mice. *Journal of Dermatological Science*, 83(1), 60-69. <https://doi.org/10.1016/j.jdermsci.2016.03.012>
- Ekinci, A. and Pehlivan, G. (2020). Cupping therapy as alternative medicine turns into a trigger of disease via the koebner phenomenon: a case report of hijama-induced psoriasis and review of the literature. *Dermatologic Therapy*, 33(6). <https://doi.org/10.1111/dth.14264>
- El-Elimat, T., El-Qaderi, H., Hananeh, W., AlSamen, M., Sharie, A., Alshehabat, M., ... & Alali, F. (2023). Evaluation of the wound healing potential of hypericum triquetrifolium turra: an experimental animal study and histopathological examination. *Scientia Pharmaceutica*, 91(1), 16. <https://doi.org/10.3390/scipharm91010016>
- Gufron, M., Sam, A., Karim, M., & Hasbi, B. (2023). Uji efektivitas daun saliera (lantana camara l.) terhadap penyembuhan luka sayat (vulnus laceratum) dan memar (vulnus contusum) terhadap mencit (mus musculus). *Jurnal Kesehatan Tambusai*, 4(4), 6502-6510. <https://doi.org/10.31004/jkt.v4i4.22204>
- González-Acedo, A., Ramos-Torrecillas, J., Illescas-Montes, R., Costela-Ruiz, V. J., Ruíz, C., Melguizo-Rodríguez, L., ... & García-Martínez, O. (2023). The benefits of olive oil for skin health: study on the effect of hydroxytyrosol, tyrosol, and oleocanthal on human fibroblasts. *Nutrients*, 15(9), 2077. <https://doi.org/10.3390/nu15092077>
- Horng, H., Chang, W., Yeh, C., Huang, B., Chang, C., Chen, Y., ... & Wang, P. (2017). Estrogen effects on wound healing. *International Journal of Molecular Sciences*, 18(11), 2325. <https://doi.org/10.3390/ijms18112325>
- Intang, N., Stevani, H., & Ratnasari, D. (2023). Efektifitas pemberian minyak kuda (equus caballus) untuk mempercepat penyembuhan luka pada kelinci jantan (oryctolagus cuniculus). *Journal of Experimental and Clinical Pharmacy (Jecp)*, 3(1), 29. <https://doi.org/10.52365/jecp.v3i1.432>
- Karimi, Z., Behnammoghadam, M., Rafiei, H., Abdi, N., Zoladl, M., Talebianpoor, M., ... & Khastavaneh, M. (2019). <p>impact of olive oil and honey on healing of diabetic foot: a randomized controlled trial<p>. *Clinical Cosmetic and Investigational Dermatology*, Volume 12, 347-354. <https://doi.org/10.2147/ccid.s198577>
- Khoso, A., Hammad, M., & Ahmed, M. (2022). Cupping therapy (حجامه) in the view of islamic teaching. *Al Khadim Research Journal of Islamic Culture and Civilization*, 3(1), 11-23. [https://doi.org/10.53575/arjicc.v3.01\(22\)e2.11-23](https://doi.org/10.53575/arjicc.v3.01(22)e2.11-23)
- Kruse, C., Nuutila, K., Lee, C., Kiwanuka, E., Singh, M., Caterson, E., ... & Sørensen, J. (2015). The external microenvironment of healing skin wounds. *Wound Repair and Regeneration*, 23(4), 456-464. <https://doi.org/10.1111/wrr.12303>



- Laurent, I., Manirakiza, A., Wang, K., Cheng, Q., & Li, Q. (2017). Efficacy and time sensitivity of amniotic membrane treatment in patients with diabetic foot ulcers: a systematic review and meta-analysis. *Diabetes Therapy*, 8(5), 967-979. <https://doi.org/10.1007/s13300-017-0298-8>
- Lestari, T., Afrilia, A., & Prihartini, N. (2020). Analysis of standard operating procedures (sops) on cupping therapy in dki health services, jakarta. *International Journal of Islamic and Complementary Medicine*, 1(2), 91-107. <https://doi.org/10.55116/ijim.v1i1.13>
- Lestari, T., Lusitawati, L., Afrilia, A., Suharyanto, F., Prihartini, N., Nurhayati, N., ... & Siswoyo, H. (2019). Kepatuhan praktisi terapi tradisional bekam terhadap standar prosedur operasional. *Holistik Jurnal Kesehatan*, 13(2), 114-127. <https://doi.org/10.33024/hjk.v13i2.1368>
- Maver, T., Maver, U., Kleinschek, K. S., Smrke, D., & Kreft, S. (2015). A review of herbal medicines in wound healing. *International Journal of Dermatology*, 54(7), 740-751. <https://doi.org/10.1111/ijd.12766>
- Mosayan, G. A., S, S. H., & H, H. W. P. (2022). Pinaplast: plester luka dari ekstrak bonggol nanas (ananas comosus (L.) Merr.) sebagai pengobatan alami luka sayat. *Jurnal Edukasi Dan Sains Biologi*, 4(1), 26-33. <https://doi.org/10.37301/esabi.v4i1.24>
- Mulla, G., Ghawte, S., Raina, P., & Kaul-Ghanekar, R. (2019). Treatment of recurrent breast abscess by cupping therapy and raw papaya paste dressing: a case report. *International Journal of Unani and Integrative Medicine*, 3(3), 01-08. <https://doi.org/10.33545/2616454x.2019.v3.i3a.87>
- Muthmainah, S. and Supriyatna, A. (2023). Pemanfaatan herbal habbatussauda (nigella sativa) untuk meningkatkan imunitas tubuh mahasiswa biologi uin sunan gunung djati bandung. *JCS*, 2(6), 1859-1863. <https://doi.org/10.59188/jcs.v2i6.409>
- Mylanda, V., Ramadhan, N., & Viviani, R. (2021). Studi penambatan molekuler senyawa bioaktif biji habbatussauda (nigella sativa) terhadap erα sebagai alternatif pengobatan kanker payudara dalam upaya pemberian data ilmiah thibbun nabawi. *Berkala Ilmiah Mahasiswa Farmasi Indonesia (Bimfi)*, 8(1), 13-24. <https://doi.org/10.48177/bimfi.v8i1.44>
- Nabo, M. (2025). The role of skin stem cell in cupping therapy. *International Journal of Complementary & Alternative Medicine*, 18(1), 40-41. <https://doi.org/10.15406/ijcam.2025.18.00723>
- Nasiri, M., Fayazi, S., Jahani, S., Yazdanpanah, L., & Haghighizadeh, M. (2015). The effect of topical olive oil on the healing of foot ulcer in patients with type 2 diabetes: a double-blind randomized clinical trial study in iran. *Journal of Diabetes & Metabolic Disorders*, 14(1). <https://doi.org/10.1186/s40200-015-0167-9>
- Perren, S., Gatt, A., Παπάνας, N., & Formosa, C. (2018). Hyperbaric oxygen therapy in ischaemic foot ulcers in type 2 diabetes: a clinical trial. *The Open Cardiovascular Medicine Journal*, 12(1), 80-85. <https://doi.org/10.2174/1874192401812010080>
- Rahavian, A., Hazrati, E., Azar, D., Allameh, F., Hojjati, S., Javanmard, B., ... & Hamidi, R. (2021). Using dry human amniotic membrane in secondary intention wound healing after urological cancer surgery: the first randomized clinical trial in iran. *International Journal of Cancer Management*, 14(5). <https://doi.org/10.5812/ijcm.111421>



- Ribeiro, B., Faria, R., Nogueira, J., Valença, S., Chen, L., & Romana-Souza, B. (2022). Olive oil promotes the survival and migration of dermal fibroblasts through nrf2 pathway activation. *Lipids*, 58(2), 59-68. <https://doi.org/10.1002/lipd.12363>
- Risniati, Y., Afrilia, A., Lestari, T., Nurhayati, N., & Siswoyo, H. (2020). Pelayanan kesehatan tradisional bekam: kajian mekanisme, keamanan dan manfaat. *Jurnal Penelitian Dan Pengembangan Pelayanan Kesehatan*, 212-225. <https://doi.org/10.22435/jpppk.v3i3.2658>
- Sadiah, S. and Trianingsih, D. (2022). Perbandingan minyak kelapa dan minyak zaitun terhadap derajat ruam popok bayi 0-24 bulan. *J. Nursing and Health Science*, 1(2), 66-71. <https://doi.org/10.58730/jnhs.v1i2.28>
- Suarni, E. and Badri, P. (2016). Uji efektifitas lendir bekicot (*achatina fulica*) dibandingkan dengan povidon iodine 10% terhadap penyembuhan luka sayat (*vulnus scissum*) pada mencit (*mus musculus*). *Syifa Medika Jurnal Kedokteran Dan Kesehatan*, 7(1), 9. <https://doi.org/10.32502/sm.v7i1.1389>
- Taheri, M. and Amiri-Farahani, L. (2021). Anti-inflammatory and restorative effects of olives in topical application. *Dermatology Research and Practice*, 2021, 1-9. <https://doi.org/10.1155/2021/9927976>
- Wasliyah, S. (2018). Efektivitas penggunaan virgin coconut oil (vco) dan minyak zaitun untuk pencegahan luka tekan grade i pada pasien yang berisiko mengalami luka tekan di rsu kabupaten tangerang. *Jurnal Medikes (Media Informasi Kesehatan)*, 5(2), 192-205. <https://doi.org/10.36743/medikes.v5i2.60>
- Winter, R., Dungal, P., Reischies, F., Rohringer, S., Slezak, P., Smolle, C., ... & Schicho, K. (2018). Photobiomodulation (pbm) promotes angiogenesis in-vitro and in chick embryo chorioallantoic membrane model. *Scientific Reports*, 8(1). <https://doi.org/10.1038/s41598-018-35474-5>
- Zhao, R., Liang, H., Clarke, E., Jackson, C., & Xue, M. (2016). Inflammation in chronic wounds. *International Journal of Molecular Sciences*, 17(12), 2085. <https://doi.org/10.3390/ijms17122085>