

## Patient Knowledge About Post-Laser Care at the Clinic: A Literature Review

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### Abstract

Laser therapy is one of the most widely used methods in dermatology and aesthetic medicine due to its ability to improve various skin conditions, such as hyperpigmentation, scarring, premature aging, and chronic wounds. The mechanism of laser action, based on the principle of selective photo thermolysis, allows light energy to be selectively absorbed by target tissues without damaging the surrounding areas, making this therapy effective and relatively safe. In addition to providing therapeutic effects such as accelerating wound healing, reducing inflammation, and stimulating collagen production, laser therapy also induces biological responses in the skin that require special attention during the post-treatment phase. Therefore, Post-Laser Care becomes an essential and inseparable part of the overall success of the therapy. This study aims to examine patients' knowledge regarding Post-Laser Care through a literature review method using a narrative approach. Data were obtained from various relevant scientific articles that met the inclusion criteria, such as a minimum publication year of 2016, topic relevance, and full-text accessibility. The analysis process was conducted through identification, screening, and synthesis of research findings. The results indicate that post-laser care plays a crucial role in accelerating the healing process, maintaining skin hydration, preventing complications such as infection and hyperpigmentation, and sustaining long-term therapeutic outcomes. Furthermore, patients' level of knowledge has been shown to have a significant relationship with attitudes and care practices (knowledge, attitude, practice), where better understanding promotes adherence to medical instructions. Therefore, comprehensive, structured, and continuous education from healthcare professionals is highly necessary to improve patients' knowledge and behavior, thereby optimizing laser therapy outcomes and minimizing the risk of complications.

**Keywords:** *Laser Therapy, Post-Laser Care, Patient Knowledge, Skin Care, Compliance, Skin Regeneration.*

### A. INTRODUCTION

The level of knowledge in beauty and skin health is an important factor that determines how individuals care for their skin. Research by Dilliana et al. (2025) shows that good knowledge about the safety and use of beauty products leads to better and more appropriate skincare habits. Adequate understanding helps individuals make correct decisions about skin treatments, including post-aesthetic procedures like laser therapy. This knowledge is crucial to minimize the risk of side effects and improve treatment results. In addition, well-informed patients are more likely to follow professional advice, such as applying sunscreen, avoiding excessive sun exposure, and choosing products that match their post-procedure skin condition. This compliance ultimately supports the healing process and prevents further complications. Figure 1 shows an illustration of laser therapy in skincare, where light energy is targeted at specific tissues to produce therapeutic effects.

Laser therapy has become a major method in dermatology and aesthetics to treat various skin conditions like aging, pigmentation, scars, and chronic wounds. Laser works through the interaction of light with skin tissue. This process uses the principle of selective photothermolysis, where light energy is absorbed by target chromophores such as melanin, hemoglobin, or water without damaging the surrounding tissue (Fadhila & Jusuf, 2024; Khalid, 2016). This mechanism stimulates cell regeneration, increases collagen and elastin production, and improves skin structure. Therefore, the results are both cosmetic and therapeutic, offering high precision and less invasive methods compared to conventional treatments.

Technologies such as Low-Level Laser Therapy (LLLT) are also effective in improving tissue regeneration, reducing inflammation, and speeding up wound healing. LLLT works by stimulating cellular activity in the mitochondria, which increases the production of ATP energy for tissue repair. Additionally, LLLT increases fibroblast proliferation, collagen synthesis, and blood circulation in the treated area, making the healing process more optimal. However, laser therapy also causes temporary skin damage that requires proper post-treatment care. The healing process after a laser procedure involves several phases: inflammation, proliferation, and tissue remodelling (Angra et al., 2021). During the inflammatory phase, the skin usually experiences redness, swelling, and a burning sensation. This reaction requires skin protection and soothing agents. In the proliferation phase, new tissue forms and cells regenerate, which requires optimal moisture and topical nutrients. In the remodelling phase, collagen structures are repaired and strengthened. Proper care, such as using sunscreen, is highly needed at this stage to prevent hyperpigmentation and ensure maximum results.

One of the most important aspects of post-laser care is using sunscreen to prevent post-inflammatory hyperpigmentation (PIH) and speed up skin recovery. After a laser procedure, the skin becomes more sensitive to ultraviolet (UV) radiation, which can trigger further inflammation and increase melanin production (Lee et al., 2025). UV exposure without proper protection risks causing PIH, especially in individuals with darker skin types. Therefore, the routine use of sunscreen with a minimum SPF of 30 is highly recommended. Sunscreen also helps maintain optimal therapy results and protects the ongoing cell regeneration process.

Patient knowledge about post-laser care directly affects their compliance in following instructions and preventing complications. Patients who understand the purpose of each treatment step tend to be more disciplined in keeping the area clean, avoiding sun exposure, and using recommended products (Zhang et al., 2024). On the other hand, a lack of knowledge can lead to mistakes, such as using unsuitable products or ignoring side effects, which can cause irritation, hyperpigmentation, or infection.

Patient knowledge can be influenced by education level, access to information, past experiences, and the role of healthcare professionals in giving clear explanations. Understanding product use, sun protection, and medical advice are important indicators of patient readiness during recovery. Therefore, a literature review is needed to evaluate patient knowledge regarding post-laser care and the factors that influence it. This review is expected to provide a clear picture of patient understanding and serve as a basis for designing better educational strategies in clinics.

## **B. LITERATURE REVIEW**

Lee et al. (2025), topic Sunscreen in POSTLASER CARE The use of sunscreen in post-laser therapy care (POSTLASER CARE) emphasizes that applying sunscreen is a crucial step in protecting the skin during its recovery phase, because after laser treatment, the skin becomes more sensitive to ultraviolet exposure, which can trigger inflammation, erythema, and post-inflammatory hyperpigmentation. This study also shows that although some patients are aware of the importance of using sunscreen, there is still a gap between knowledge and actual practice in the field, such as irregular use or incorrect dosage, making the protective effect less than

optimal. Therefore, comprehensive and continuous education from healthcare providers is highly necessary to improve patient compliance in using sunscreen, including choosing the appropriate SPF, reapplication frequency, and proper usage methods, so that therapy results are optimal the laser can be more effective and the risk of complications can be minimized.

Angra et al. (2021), Post-Laser Wound Care Post-Laser Wound Care explains that post-laser treatment care has the main purpose of maintaining skin moisture, preventing infection, and accelerating the regeneration process of skin tissue that has been damaged due to laser energy exposure. This care generally involves the use of appropriate moisturizers, protection from sun exposure, as well as the application of topical agents that can help soothe the skin and support optimal healing. In addition, patient compliance in following care instructions also becomes an important factor in determining the success of the therapy outcome. Therefore, this article is very relevant because it provides an understanding of the basic principles of post-laser care, which serve as the foundation in clinical practice.

Karampinis et al. (2024) Skin Reaction After Laser The use of Low-Level Laser Therapy (LLLT) has been proven effective in enhancing skin regeneration through the stimulation of cellular activity, such as increased collagen production and accelerated tissue healing processes, without causing significant side effects in patients. The research findings indicate meaningful improvements in skin condition after therapy, in terms of texture, elasticity, and lower inflammation levels. These findings reinforce the importance of laser therapy as a safe and effective treatment method, while also emphasizing that the post-therapy recovery process (POST-LASER CARE) plays a crucial role in optimizing clinical outcomes and maintaining patients' skin health sustainably.

Le et al. (2024) Treatment of Scar Tissue Scar management not only focuses on the aesthetic outcome but also heavily relies on the quality of post-procedure care, including laser therapy, which plays an important role in preventing various complications such as infection, prolonged inflammation, and the risk of tissue deformity. Proper post-procedure care, such as maintaining the cleanliness of the area, using appropriate topical agents, and educating patients about skin protection, is an integral part of supporting an optimal healing process. Therefore, post-procedure management cannot be neglected as it directly contributes to the success of the therapy and minimizes the risk of unwanted scar formation.

Zhang et al. (2024) Knowledge, Attitude, Practice in the concept of Knowledge, Attitude, Practice (KAP), it is shown that the level of patient knowledge has a significant relationship with the formation of attitudes and practices in healthcare, where the better the knowledge possessed, the more positive the attitude formed and the more appropriate the care actions taken. This affirms that knowledge not only functions as basic information but also becomes a key factor influencing overall health behavior, including in the context of post-therapy care such as POST-LASER CARE, so increasing patient education becomes an important step to encourage compliance and a higher quality of care practices.

Yang et al. (2025) Knowledge, Attitude, Practice in Practice Within the framework of Knowledge, Attitude, and Practice (KAP), the level of practitioners' knowledge has a strong relationship with the quality of clinical practice, particularly in the use of laser therapy, where practitioners who have a better understanding of procedures, risks, and post-treatment care tend to implement safer, more effective, and standard-compliant practices; this emphasizes that improving the knowledge aspect not only impacts professional attitudes but also directly affects the quality of clinical actions, making the KAP concept an important foundation in efforts to enhance the quality of healthcare services, including in the context of educating patients on post-laser therapy care.

Shurrah & Alzghayar (2024) Effectiveness of LLLT Low-Level Laser Therapy (LLLT) is an effective method for enhancing skin regeneration through stimulation of cellular activity, particularly in fibroblasts which play a role in collagen production and tissue repair. This

therapy works by increasing microcirculation, reducing inflammation, and accelerating the healing process without causing damage to the surrounding tissue. In addition, LLLT is reported to not produce significant side effects, making it relatively safe for use in various types of skin conditions. Research results show a noticeable improvement in patients' skin conditions, in terms of texture, elasticity, as well as a reduction in signs of irritation or skin damage, thereby strengthening the importance of using laser therapy as part of skin care while also supporting an optimal recovery process.

Nugroho et al. (2023) Healing Laser Wound Laser therapy methods have advantages in accelerating the wound healing process compared to conventional methods, as they are able to stimulate cell regeneration, improve blood circulation, and reduce inflammation in damaged tissues. This shows that the use of lasers is not only effective as a therapeutic measure, but also provides additional benefits in speeding up patient recovery with a lower risk of complications. Therefore, these findings are relevant in the context of post-laser therapy care (POST-LASER CARE), as they emphasize the importance of patient understanding of the procedure and proper care to optimize faster and more effective healing outcomes.

Fadhila Sy & Jusuf (2024) LLLT Dermatology In studies on Low-Level Laser Therapy (LLLT) in the field of dermatology, it is explained that LLLT is a therapeutic method that utilizes low-intensity light energy to stimulate cellular biological processes, such as increased production of Adenosine Triphosphate (ATP), stimulation of cell proliferation, and acceleration of tissue regeneration without causing thermal damage to surrounding tissues. This therapy has been proven to have broad therapeutic effects, including reducing inflammation, accelerating wound healing, and improving skin quality, with relatively minimal risk of side effects compared to other conventional methods. Therefore, LLLT becomes one of the strong theoretical foundations in the use of laser therapy in dermatology, particularly in skin care that emphasizes both effectiveness and safety for patients.

Khalid (2016) Mechanism of Laser on Tissue The working mechanism of lasers on tissue involves the interaction of light energy with cells and biological tissues, which then triggers biochemical responses, such as increased ATP production, stimulation of cell proliferation, and accelerated tissue regeneration. The effectiveness of laser therapy is greatly influenced by parameters such as dose, exposure duration, wavelength, and frequency of use, because each of these parameters determines the depth of penetration and the type of tissue response produced. If the parameters used are appropriate, laser therapy can provide optimal therapeutic effects such as reducing inflammation, accelerating wound healing, and improving blood circulation; conversely, improper use can decrease the effectiveness of the therapy and even potentially cause tissue irritation. Therefore, understanding the mechanism and laser parameters is an important scientific basis for determining the success of therapy and the patient recovery process.

### **C. METHOD**

This research uses a literature review method with a narrative approach aimed at examining and synthesizing various scientific findings related to laser therapy and post-treatment care. This approach allows researchers to organize and interpret previous research results descriptively, thereby providing a comprehensive overview of a topic. This is in line with the study by Lestari & Irawati (2020), which states that a literature review is research that examines various scientific articles to gain a comprehensive understanding of a phenomenon. In addition, literature studies are also used to develop theoretical frameworks and strengthen the research foundation through relevant secondary data. The data sources in this study were obtained from scientific articles relevant to the topic of laser therapy and post-treatment care.

The inclusion criteria used in the selection of articles include several important aspects to ensure the quality and relevance of the data sources. The selected articles are publications

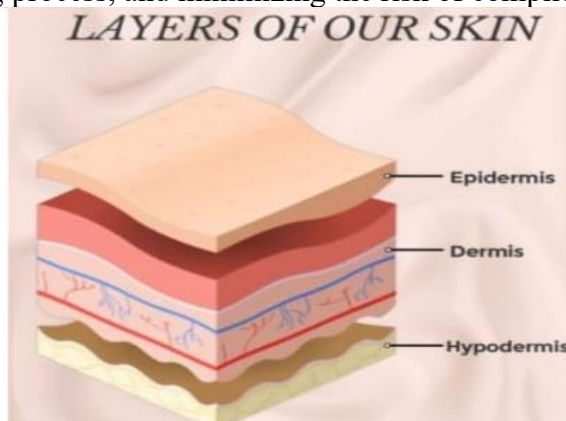
with a minimum publication year of 2016 so that the information used is up-to-date. In addition, the articles must discuss laser therapy, the effects produced, or post-procedure care (POST-LASER CARE), and be available in full-text form so that they can be analyzed in depth. This is supported by Nafi'a's research (2021), which states that in a literature review, articles must meet inclusion criteria such as publication year, open access, and topic relevance to ensure valid review results.

can be accounted for. Thus, the application of inclusion criteria becomes an important step in maintaining research quality. The article selection process is carried out through several systematic stages, namely literature identification, screening based on the relevance of the title and abstract, and in-depth content analysis. These stages aim to filter articles that truly match the research focus. According to the study by Herlambang et al. (2025) in figure two, the literature review process is carried out through database searches, then continued with the stages of identification, screening, and finally determining articles that meet the inclusion criteria. From the total articles that have.

#### D. RESULT AND DISCUSSION

The study results indicate that post-laser therapy care plays an important role in accelerating the healing process, preventing complications such as infection and hyperpigmentation, and improving the aesthetic results of the skin. In addition, most articles also emphasize that the level of patient knowledge is closely related to adherence in carrying out the care, making education from healthcare professionals a key factor in the success of the therapy.

Patient knowledge is an important factor in the success of healthcare because in the concept of health, knowledge not only affects an individual's level of understanding of the condition they are experiencing, but also shapes attitudes and actions in carrying out self-care properly and sustainably. Patients who have good knowledge tend to be more compliant with healthcare instructions, able to take more rational decisions regarding treatment, as well as being more active in maintaining their health, thereby improving therapy effectiveness, speeding up the healing process, and minimizing the risk of complications.



**Figure 1. Skin Layers**

Source: <https://pin.it/70EQppz38>

In figure three, the structure of the skin layers is shown, consisting of the epidermis, dermis, and hypodermis, each of which plays an important role in maintaining the function and health of the skin. This illustration helps to explain that laser therapy works on certain layers, especially the dermis, to stimulate collagen production and repair tissue structure. Understanding these skin layers is important because the condition of the skin after laser therapy undergoes changes that require special care so that the regeneration process can occur optimally. In the context of laser therapy, the skin condition after the procedure is in a sensitive phase and therefore requires special care because the skin layers experience microtrauma due

to laser energy exposure. The laser works by stimulating biological processes in the tissue, such as increased collagen production, repair of the dermis structure, and accelerated cell regeneration (Khalid, 2016), thus requiring appropriate care support to optimize its healing process. Post-laser care, such as using moisturizers, sunscreen, and avoiding direct sun exposure, is very important to prevent irritation, hyperpigmentation, and other complications, while also helping to maintain the therapy results for more optimal and long-lasting effects.



**Figure 2. Skin Tissue Healing Process**

Source: <https://theskincompany.com>

In figure four, the stages of skin tissue healing are shown, which include the inflammatory, proliferation, and remodelling phases. The image explains that after laser therapy, the skin will experience a natural response in the form of initial inflammation, which is then followed by the formation of new tissue and the repair of collagen structure. This illustration emphasizes that post-procedure care is very necessary at every stage of healing to prevent complications and support optimal therapy results (Berčić & Bračić, 2024). In addition, post-procedure care such as maintaining the cleanliness of the treated area, using medication, and limiting activities is very important to prevent complications and accelerate the tissue healing process. Patient adherence to medical instructions becomes a key factor in minimizing the risk of infection, inflammation, or other side effects that can affect the final therapy outcome. In other medical procedures such as LASIK, post-procedure care includes the use of Patient compliance with medical instructions is a key factor in minimizing the risk of infection, inflammation, and other side effects that can affect the final therapeutic outcome. In other medical procedures such as LASIK, post-procedure care includes the use of eye drops to prevent infection and maintain eye moisture, the use of eye protection to avoid irritation or injury, and restrictions on certain activities such as avoiding exposure to dust, water, and excessive screen time. This has been shown to affect clinical outcomes, where optimal care can increase procedural success, accelerate functional recovery, and maintain long-term result stability (Srilestari et al., 2017).

Educational strategies that can be carried out include direct education by healthcare workers, the use of audio-visual media, and the provision of leaflets or written guides that are easy for patients to understand. Direct education allows for two-way interaction so that patients can ask questions and obtain clarification directly, while audio-visual media helps clarify information through more engaging visual and auditory presentations, and easy to remember. On the other hand, leaflets or written guides serve as sources of information that can be reread by patients at any time. Research shows that media-based education plays an important role in significantly improving patient understanding, as it is able to convey information more effectively, systematically, and according to the needs of the patient.

### **Patient Knowledge is Still Low**

Research by Aini (2024) shows that most patients have a low level of knowledge related to post-medical procedure care, which includes understanding the hygiene of the procedure area, the correct use of medications or care products, as well as avoiding risk factors such as sun exposure or activities that could slow down the healing process; this condition leads to an inability to perform self-care correctly, thereby potentially increasing the risk of complications such as infection, irritation, or suboptimal therapy outcomes, and prolonging recovery time that could otherwise be prevented through adequate education and guidance from healthcare personnel.

In addition, the low level of patient knowledge is often influenced by the lack of clear and easily understandable information during the consultation process, limited time for education from healthcare providers, as well as minimal educational media that can be accessed independently by patients after the procedure is performed. This indicates that improving the quality of health education is an important aspect, whether through providing written instructions, using visual media, or more interactive communication between healthcare providers and patients, so that patients can understand and properly apply post-procedure care, which ultimately can improve therapy success and speed up the healing process (Alshahrani et al., 2024).

### **Knowledge Relates to Care Compliance**

Patient knowledge affects adherence to treatment, because a good level of understanding will encourage patients to follow medical instructions accurately and consistently. In Figure Five, a concept chart of Knowledge, Attitude, Practice (KAP) is shown, illustrating the relationship between knowledge, attitude, and actions in health behavior. Patients who do not understand care procedures tend to make errors in actions, such as using products incorrectly, not following the correct treatment schedule, or ignoring health professional advice, thereby increasing the risk of complications (Wijaya et al., 2017). In addition, a lack of knowledge can also cause anxiety or misconceptions about the condition experienced, which ultimately impacts low motivation to undergo treatment optimally. Therefore, clear, structured, and easily understandable education is greatly needed so that patients are able to play an active role in the healing process and minimize the occurrence of side effects or therapy failure. Increasing patient knowledge not only depends on the delivery of information, but also on the educational methods used by healthcare professionals. Interactive educational approaches, such as the use of visual media, leaflets, or direct counselling, have been proven to be more effective in improving patient understanding compared to one-way information delivery (Ashifa et al., 2025).

In addition, patient involvement in the education process, for example through question-and-answer sessions or care demonstrations, can strengthen memory and increase patients' confidence in performing self-care. Thus, an appropriate education strategy not only increases knowledge but also shapes positive attitudes and behaviors that support successful care, so that therapy outcomes can be more optimal and sustainable.

### **Post-Procedure Care Important for Healing**

Post-procedure care, including for laser procedures, is very important because it is directly related to the wound healing process and the prevention of complications such as infection and inflammation. Therefore, patients need to receive proper education regarding the care steps that should be taken, such as maintaining the cleanliness of the treatment area, avoiding direct exposure to sunlight, and using care products recommended by medical personnel (Pramitha et al., 2021). Good education not only increases patient understanding but also helps them be more prepared to undergo the recovery process independently at home. In addition, patient adherence to post-treatment instructions also plays a significant role in

accelerating skin tissue regeneration and minimizing the risk of side effects such as hyperpigmentation or irritation. A high level of adherence will support optimal therapy results, both in terms of health and aesthetics, so that the results of laser treatment can last longer and provide satisfaction for patients. This shows that the success of therapy is not only determined by the medical procedure itself, but also by the quality of follow-up care carried out by patients (Nugroho et al., 2023).

### **Laser Therapy is Effective but Requires Ongoing Care**

Lasers have benefits in accelerating wound healing and reducing inflammation through stimulation of cellular activity, increased collagen production, and improvement of blood circulation in the exposed tissues, so that the skin regeneration process occurs more quickly and effectively (Shurrab & Alzghayar, 2024). Moreover, laser therapy also plays a role in stimulating the formation of new tissue and improving skin texture, so it not only speeds up healing but also enhances overall skin quality, including reducing scars, hyperpigmentation, and early signs of aging.

Nevertheless, even though laser therapy provides significant results, ongoing care (POST-LASER CARE) is still necessary, such as maintaining skin moisture, avoiding direct sunlight exposure, and using appropriate skincare products to prevent irritation or complications. Proper post-laser care also includes regular use of sunscreen, avoiding the use of irritating active ingredients, and keeping the treated skin area clean, so that the results achieved can be more optimal, stable, and long-lasting.

In addition, the results of the literature review show that there is a correspondence between theory and empirical findings regarding the importance of patient knowledge in post-laser therapy care. The concept of Knowledge, Attitude, Practice (KAP) proposed by Zhang et al. (2024) emphasizes that knowledge is the foundation for the formation of health attitudes and behaviors. This aligns with the findings in various analyzed articles, where patients with better levels of knowledge tend to have higher compliance with care instructions. Thus, it can be understood that increasing knowledge not only impacts the cognitive aspect but also directly affects the quality of care practices carried out by patients in daily life. Although, some patients already have basic knowledge about post-laser therapy care, gaps between knowledge and practice in the field are still found. This is evident from the still low compliance in the regular use of sunscreen as well as in avoiding direct sun exposure. This condition indicates that knowledge alone is not enough to form optimal behavior, but needs to be supported by other factors such as motivation, self-awareness, and support from healthcare professionals (Mafri, 2022). Therefore, educational interventions carried out should not only focus on providing information, but must also be able to encourage sustainable behavior change.

From a physiological aspect, the process of skin healing after laser therapy is a complex process and requires optimal skin environmental conditions. Skin that experiences microtrauma due to laser exposure needs adequate moisture, protection from external factors, and support from topical agents to accelerate cell regeneration. If care is not carried out properly, the inflammatory process can last longer and potentially cause complications such as post-inflammatory hyperpigmentation (PIH) (Hidayatullah, 2018). Therefore, post-procedural care cannot be separated from the success of the laser therapy itself, but rather become an integral part of the entire care process. The implications of this research indicate that healthcare professionals have a very important role in increasing patients' knowledge and compliance. The education provided should be conducted in a structured, continuous manner and adapted to the patient's level of understanding. In addition, the use of various educational media such as videos, leaflets, and direct consultations can increase the effectiveness of information delivery. With optimal education, it is expected that patients not only understand but are also able to independently and consistently apply post-laser therapy care.

## E. CONCLUSION

Based on the literature review that has been conducted, it can be concluded that laser therapy is an effective method in the fields of dermatology and aesthetics because it can accelerate wound healing, stimulate cell regeneration, increase collagen production, and improve the structure and overall quality of the skin. This effectiveness is supported by the laser's selective mechanism of action on target tissues, thereby providing optimal results with minimal risk of tissue damage. However, the success of laser therapy is not only determined by the procedure performed but is also greatly influenced by post-procedure care (POST-LASER CARE), which includes maintaining skin moisture, using sunscreen, avoiding sun exposure, and using appropriate skincare products. Proper care has been proven to accelerate skin regeneration, reduce the risk of prolonged inflammation, and prevent complications such as hyperpigmentation.

and infection. In addition, patients' level of knowledge is closely related to adherence in carrying out care. Patients with good knowledge tend to have more positive attitudes and behaviors and are more consistent in following healthcare providers' instructions, thereby achieving more optimal therapy outcomes. Therefore, increasing patient education becomes very important. Healthcare providers are advised to provide comprehensive, structured, and easily understandable education through various media such as direct counselling, educational videos, or leaflets, as well as using an interactive approach so that patients are more active and confident in carrying out self-care. For future development, further research is needed on the factors that influence patients' knowledge and adherence, as well as the effectiveness of various educational methods that can be applied in clinics. Thus, it is expected that the quality of post-laser therapy care can continue to improve and provide more optimal results for patients.

## REFERENCES

- Aini, K. (2024). *Pengaruh Video Edukasi Terhadap Pengetahuan Tentang Perawatan Pasca Operasi Katarak di Poli Mata Rumah Sakit Sari Asih Karawaci Tangerang* (Doctoral Dissertation, Universitas Islam Sultan Agung Semarang).
- Alshahrani, N. A., AlSufyani, N. H., Aldawish, R. A., Alrashdi, A. K., Moafa, R. H., Alqahtani, M. A. N., Aljabri, A. M., Alawad, F. H., & Alarfaj, A. A. (2024). A Systematic Review and Meta-analysis Comparing the Effect of Unilateral versus Bilateral Cochlear Implant in Hearing Impairment. *Journal of Advanced Trends in Medical Research*, 1(2), 363–368. [https://doi.org/10.4103/atmr.atmr\\_156\\_24](https://doi.org/10.4103/atmr.atmr_156_24)
- Angra, K., Lipp, M. B., Sekhon, S., Wu, D. C., & Goldman, M. P. (2021). Review of Post-laser-resurfacing Topical Agents for Improved Healing and Cosmesis. *Journal of Clinical and Aesthetic Dermatology*, 14(8), 24–32.
- Ashifa, N., Srinivasan, S., Viswanathan, K., & Pavithran, V. K. (2025). Knowledge and Practice of Dentists toward Dental Lasers and Their Use during and Post-COVID-19 Pandemic Scenario in South India: A Cross-Sectional Analytical Study. *Journal of Health and Allied Sciences NU*, 15(01), 080–085. <https://doi.org/10.1055/s-0044-1787847>
- Berčić, T., & Bračić, M. (2024). The Effectiveness of High-Intensity Laser Therapy on Pain Management in Tendinopathy-A Systematic Review. *Journal of Health and Rehabilitation Sciences*, 3(2), 1–11. <https://doi.org/10.33700/jhrs.3.2.119>
- Dilliana, A. P., Agustin, E. W., & Nurani, I. A. (2025). Tingkat Pengetahuan Siswa SMA Negeri 2 Blora Mengenai Keamanan Kosmetik untuk Pemutih Wajah. *Beauty and Beauty Health Education*, 14(1), 32–41. <https://doi.org/10.15294/bbhe.v14i1.13829>
- Fadhila Sy, M., & Jusuf, N. K. (2024). Penggunaan Low Level Laser dalam Dermatologi Kosmetik. *Analisis*, 51(6), 352–356.

- Herlambang, A., Indriarini, M. Y., & Maharina, F. D. (2025). Pengaruh Terapi Wicara Terhadap Peningkatan Kemampuan Bicara pada Penderita Stroke dengan Afasia Motorik: Literature Review. *Jurnal Kesehatan*, 9(2), 65–72.
- Hidayatullah, M. R. (2018). *Efektivitas Laserpuncture Care dalam Menurunkan Tekanan Darah dan Tingkat Kecemasan serta Meningkatkan Ankle Brachial Index pada Lansia dengan Hipertensi* (Doctoral dissertation, Universitas Airlangga).
- Karampinis, E., Georgopoulou, K. E., Goudouras, G., Lianou, V., Kampra, E., Roussaki Schulze, A. V., & Zafiriou, E. (2024). Laser-Induced Koebner-Related Skin Reactions: A Clinical Overview. *Medicina (Lithuania)*, 60(7), 1–16. <https://doi.org/10.3390/medicina60071177>
- Khalid, M. Z. (2016). Mechanism of laser/light beam interaction at cellular and tissue level and study of the influential factors for the application of low-level laser therapy. *arXiv preprint arXiv:1606.04800*.
- Le, M., Liu, C., Luo, O. D., Shojaei, D., & Sibley, C. D. (2024). Laser Applications in Wound and Scar Management Post-Mohs Micrographic Surgery: A Systematic Review. *Journal of Cutaneous Medicine and Surgery*, 28(2), 167–172. <https://doi.org/10.1177/12034754241227629>
- Lee, K. W. A., Chan, L. K. W., Song, J. K., Lee, C. H., Kim, J. H., & Yi, K. H. (2025). Importance of Using Sunscreen After Light or Laser Facial Treatment: A Literature Review. *Life*, 15(9), 1–13. <https://doi.org/10.3390/life15091484>
- Lestari, D. G., & Irawati, H. (2020). Literature Review: Peningkatan Hasil Belajar Kognitif Dan Motivasi Siswa Pada Materi Biologi Melalui Model Pembelajaran Guided Inquiri. *BIOMA: Jurnal Biologi dan Pembelajarannya*, 2(2), 51–59.
- Mafri, T. A. (2022). *Literature Review: Penggunaan Low Level Laser Therapy (LLLT) pada Proses Penyembuhan Soket Gigi dan Penatalaksanaan Alveolar Osteitis Pasca Pencabutan Gigi*. Departemen Bedah Mulut Dan Maksilofasial.
- Nafi'a, Z. (2021). Faktor Kepuasan Pasien Terhadap Pelayanan Makanan di Rumah Sakit: Literature review Patient Satisfaction Factors for Food Service in Hospital: Literature Review. *Jurnal Manajemen Kesehatan Yayasan RS. Dr. Soetomo*, 7, 233–247.
- Nugroho, A., Hamim, N., Kusyairi, A., Tinggi, S., Kesehatan, I., Pesantren, H., Hasan, Z., Metode, K., & Konvensional, S. (2023). Perbedaan Khitan Metode Laser Electrocautery dan Khitan Metode Standar Konvensional Terhadap Penyembuhan Luka Khitan di Lembaga Kesehatan Nahdlatul Ulama Kraksaan Kabupaten Probolinggo. *Jurnal Ilmu Kesehatan Mandiri Cendikia*, 2(9), 125–131.
- Pramitha, R. J., Zulkarnain, I., Ervianti, E., Rahmadewi, Hidayati, A. N., Budiono, Indramaya, D. M., Setyaningrum, T., Citrashanty, I., Sari, M., Umborowati, M. A., Kusumaputra, B. H., & Listiawan, M. Y. (2021). Efficacy and Side Effects of Fractional Carbon Dioxide Laser for Acne Scars, Keloids, and Striae Albae in the Dermatovenereology Clinic of Tertiary Hospital: A Retrospective Study. *Berkala Ilmu Kesehatan Kulit Dan Kelamin*, 33(1), 19–27. <https://doi.org/10.20473/bikk.V33.1.2021.19-27>
- Shurrab, K., & Alzghayar, J. N. (2024). Low-Level Laser Therapy for skin rejuvenation: A safe and effective solution backed by data and visual evidence. *Journal of Cosmetic Dermatology*, 23(10), 3234–3240. <https://doi.org/10.1111/jocd.16404>
- Srilestari, A., Nareswari, I., Simadibrata, C., & Tarigan, T. J. E. (2017). Effectiveness of combined laser-puncture and conventional wound care to accelerate diabetic foot ulcer healing. *Medical Journal of Indonesia*, 26(1), 26–34. <https://doi.org/10.13181/mji.v26i1.1401>
- Wijaya, I. N. P., Dewi, A. P. A., & Kamaryati, N. P. (2017). Hubungan Pengetahuan Pasien Tentang Perawatan Pasca Operasi Katarak Dengan Motivasi Untuk Kontrol Ke Rumah

- Sakit Mata Bali Mandara Provinsi Bali Tahun 2016. *Jurnal Riset Kesehatan Nasional*, 1(1), 47-53.
- Yang, W., Yang, L., Li, H., & Cheng, X. (2025). Knowledge, Attitude, and Practice of aesthetic medicine practitioners towards laser and/or light therapy for hypertrophic scars. *Scientific Reports*, 15(1), 1–9. <https://doi.org/10.1038/s41598-024-85037-0>
- Zhang, S., Cui, S., Liu, L., Zou, J., Wang, P., Li, Q., & Shen, P. (2024). Knowledge, attitudes, and practices toward femtosecond laser small incision lenticule extraction surgery and postoperative care among recipients. *BMC Public Health*, 24(1). <https://doi.org/10.1186/s12889-024-20035-5>