INSIGHTS-JOURNAL OF
HEALTH AND REHABILITATION

INSIGHTS-JHR
INSIGHTS-JOURNAL OF HEALTH AND REHABILITATION

SELF-PERCIEVED IMPROVEMENT AMONG BURN SURVIVORS RECEIVING PHYSICAL THERAPY TREATEMENT IN HOSPITALS OF LAHORE

Original Research

Baseerat Iqbal[1]*, Lalazar Chaudhry[2]
[1]Sharif medical and dental college, Pakistan.
[2]Supervisor, Pakistan.
Corresponding Author: Baseerat Iqbal, Sharif medical and dental college, Pakistan, ibaseerat@yahoo.com
Acknowledgement: The authors gratefully acknowledge the cooperation of all participating hospitals and patients.

Conflict of Interest: None
Grant Support & Financial Support: None

ABSTRACT

Background: Burn injuries are a major cause of long-term disability, disfigurement, and psychological distress worldwide, particularly affecting individuals in low-resource settings. These injuries often result in functional limitations and reduced quality of life, necessitating timely and effective rehabilitation. Physical therapy plays a central role in the recovery process, focusing on restoring mobility, minimizing complications such as contractures, and promoting psychological well-being.

Objective: To evaluate the self-perceived improvement among burn survivors undergoing physical therapy treatment in hospitals across Lahore, Pakistan.

Methods: A descriptive cross-sectional study was carried out among 130 burn survivors receiving physiotherapy at seven tertiary hospitals in Lahore. A self-structured questionnaire containing 17 validated items (content validity index: 0.93) was used to assess participants' perceptions of improvement in areas including pain, mobility, scar healing, daily activities, and psychological well-being. Participants aged 7 to 75 years were included using a convenience sampling technique. Data were collected via self-administered or interviewer-assisted questionnaires and analyzed using SPSS version 21. Ethical approval was obtained from the Institutional Review Board of Azra Naheed Medical College.

Results: Out of 130 participants, 69 (53.1%) were male and 61 (46.9%) were female, with a mean age of 29.08 ± 15.53 years. A total of 95.4% reported satisfaction with physical therapy, and 91.6% noted a decrease in pain. Improved scar healing was observed in 81.5% of cases, while 96.1% reported enhanced mobility. However, only 41.5% could independently perform daily activities, and 42.3% were able to bathe without assistance, highlighting ongoing challenges in functional independence.

Conclusion: The majority of burn survivors reported positive perceptions of physiotherapy outcomes, especially in pain relief, mobility, and scar healing. Nonetheless, a notable portion continued to experience limitations in daily functional tasks, indicating a need for more individualized, task-specific rehabilitation approaches.

Keywords: Activities of Daily Living, Burns, Pain Management, Patient Satisfaction, Physical Therapy Modalities, Rehabilitation, Survivors.

© 2025 et al. Open access under CC BY License (Creative Commons). Freely distributable with appropriate citation.

INTRODUCTION

Burn injuries remain a pervasive public health concern worldwide, with disproportionately high incidence rates in low- and middle-income countries where limited healthcare infrastructure exacerbates morbidity and mortality outcomes (1). These injuries, caused by thermal, chemical, electrical, or radiation exposure, often result in extensive tissue damage, leading to prolonged hospitalization, disfigurement, pain, and functional impairment. Beyond the physical toll, burn injuries frequently give rise to psychological complications such as anxiety, depression, and post-traumatic stress, which further hinder recovery and reintegration into daily life (2). This dual burden of physical and psychosocial sequelae underscores the urgency of adopting comprehensive rehabilitation strategies tailored to the complex needs of burn survivors. Physiotherapy has emerged as an essential component of burn rehabilitation, playing a pivotal role in preventing secondary complications like joint contractures, muscle atrophy, and reduced mobility, while also facilitating the gradual restoration of functional independence (3). Effective physiotherapeutic intervention extends beyond physical recovery; it incorporates psychological support and promotes self-efficacy, contributing to overall well-being and improved quality of life (4). The involvement of a multidisciplinary team, including physicians, physiotherapists, occupational therapists, and mental health professionals, has been consistently shown to yield better outcomes in terms of patient satisfaction and functional improvement (5). However, despite advances in treatment protocols, there remains a critical gap in understanding the subjective recovery experience from the patient's perspective.

Emerging research highlights the influence of psychosocial factors, including familial support and interpersonal relationships, on the rehabilitation trajectory of burn patients. Studies have demonstrated that when patients perceive a sense of progress, particularly in pain relief and mobility, they are more likely to engage actively in the rehabilitation process (6). Conversely, psychosocial barriers such as isolation, anxiety, and lack of support can significantly impede functional recovery (7). In this context, qualitative evaluations become indispensable, offering valuable insights into patients' lived experiences and satisfaction with care. Such perspectives are often underrepresented in clinical literature, which tends to prioritize objective functional outcomes over subjective measures of well-being (8). Despite evidence suggesting high satisfaction rates among burn survivors who undergo structured physiotherapy, many continue to report ongoing challenges with daily tasks, independence, and social reintegration (9). This disparity suggests a potential misalignment between clinical outcomes assessed by therapists and the personal benchmarks valued by patients. Bridging this gap requires a deeper understanding of how patients perceive their rehabilitation journey and which aspects of care they find most meaningful. Moreover, aligning therapeutic goals with patient expectations may enhance adherence to treatment and promote sustained recovery (10). This study seeks to explore the self-perceived improvement of burn patients receiving physiotherapy in hospital settings across Lahore. By employing a rigorously developed and expert-validated questionnaire, the research aims to capture comprehensive insights into patients' rehabilitation experiences. The findings will inform evidence-based adjustments to physiotherapy practices, ensuring they are not only clinically effective but also patient-centered. The objective of this study is to rationally assess the subjective outcomes of physiotherapy among burn survivors, with the ultimate goal of enhancing the quality and responsiveness of rehabilitative care.

METHODS

The study employed a descriptive cross-sectional design to evaluate the self-perceived improvement among burn patients undergoing physiotherapy in hospital settings across Lahore. Participants were recruited from seven major public and private healthcare institutions, including Mayo Hospital, Jinnah Hospital, General Hospital, Children's Hospital, Shaikh Zayed Hospital, Chaudhry Muhammad Akram Teaching and Research Hospital, and the Social Security Hospital. The target population comprised burn survivors currently receiving physiotherapy services at these institutions. A total sample size of 162 was initially calculated using appropriate statistical estimations; however, due to limitations in patient availability during the data collection period, the final enrolled sample consisted of 130 participants. Convenience sampling was employed to facilitate participant recruitment, allowing the inclusion of readily available patients meeting the study criteria. Participants included both male and female burn patients aged between 7 and 75 years, without restriction to specific burn severity or duration, to ensure representation across various rehabilitation stages. Individuals who were not receiving physiotherapy, were medically unstable, or unwilling to provide informed consent were excluded from the study. To capture patients' perceptions comprehensively, data were collected using a self-structured questionnaire comprising 17 items. The questionnaire

© 2025 et al. Open access under CC BY License (Creative Commons). Freely distributable with appropriate citation.

INSIGHTS-JHR
INSIGHTS-JOURNAL OF HEALTH AND REHABILITATION

was designed to assess improvements in daily functional activities, satisfaction with treatment, independence, emotional well-being, and confidence in performing tasks post-physiotherapy. The instrument underwent a rigorous content validation process by eight field experts, achieving a content validity index (CVI) of 0.93, indicating a high level of construct relevance and internal consistency.

Data collection was conducted directly within the hospital settings, where participants either self-administered the questionnaire or, in cases of illiteracy or physical limitation, completed it with the assistance of trained interviewers. This approach enabled inclusive participation and minimized response bias. Participants were encouraged to respond honestly to ensure authenticity in reporting their rehabilitation experiences. The study population reflected a broad demographic and clinical diversity, allowing for generalizable insights into the physiotherapy outcomes among burn survivors. Prior to commencement, ethical approval was obtained from the Institutional Review Board of Azra Naheed Medical College, Lahore. All participants were briefed about the study's purpose, procedures, and confidentiality protocols, and written informed consent was obtained from each participant or their legal guardians in the case of minors. Participants were assured that their information would be kept confidential and used solely for research purposes, in adherence to the ethical guidelines outlined in the Declaration of Helsinki.

RESULTS

The study included 130 burn survivors with a mean age of 29.08 ± 15.53 years, ranging from 5 to 79 years. Males constituted 53.1% of the sample, while females accounted for 46.9%. The average time since sustaining the burn injury was 5.82 ± 6.89 months, and participants had been receiving physiotherapy for a mean duration of 3.39 ± 3.97 days. An overwhelming 95.4% of participants expressed overall satisfaction with their physiotherapy treatment. Of these, 68.5% reported being strongly satisfied, and 26.9% reported being satisfied. In terms of pain relief, 91.6% of the participants noted a reduction in pain, with 38.5% strongly agreeing and 53.1% agreeing that their pain levels had significantly decreased. Improvement in scar healing was reported by 81.5% of participants, of whom 50% strongly agreed and 31.5% agreed with the statement. Regarding functional improvements, 96.1% reported an increase in their range of motion, with 51.5% strongly agreeing and 44.6% agreeing to notable improvements. Transfer abilities (e.g., lying to sitting to standing) improved in 88.5% of participants, as 20.8% strongly agreed and 67.7% agreed to enhanced ease in positional changes. However, independence in daily living activities presented considerable challenges. Only 13.8% strongly agreed and 27.7% agreed that they could perform ADLs with ease, while 56.9% disagreed or strongly disagreed. Similar trends were observed in other domains: just 42.3% reported being able to bathe independently, and 40.8% felt capable of dressing without assistance. While 72.3% noted improvements in self-grooming, only 34.6% strongly agreed with this. Ability to engage in work or education-related activities remained limited, with only 30.7% expressing agreement and 69.2% disagreeing or neutral.

Social functioning and emotional well-being showed more favorable outcomes. Improved social interaction was reported by 75.4% of participants, and 72.3% noted reduced levels of frustration post-treatment. Similarly, 72.3% of participants regained self-confidence. However, only 30.8% reported increased participation in routine exercise, suggesting an area where continued intervention might be needed. In exploring the relationship between therapy duration and self-perceived outcomes, weak correlations were found. Specifically, the Spearman correlation coefficient between therapy duration and perceived improvement in mobility was 0.019, in activities of daily living (ADLs) was -0.026, and in self-confidence was 0.121. These findings indicate minimal direct association between the duration of physiotherapy sessions and subjective recovery outcomes, suggesting that perceived improvements may depend on factors beyond the length of therapy alone. Stratified analysis by gender revealed that females reported slightly higher average scores in mobility, ADL performance, and self-confidence compared to males. Age-wise stratification showed that participants aged 21–40 years demonstrated the highest average improvements across all measured outcomes, while the oldest age group (61–80 years) reported the lowest scores. This pattern highlights the potential influence of age on rehabilitation responsiveness, with younger patients possibly benefiting more significantly from physiotherapy interventions.

Table 1: Gender of the participants

	Frequency	Percent
Male	69	53.1
Female	61	46.9
Total	**130**	**100.0**

© 2025 et al. Open access under CC BY License (Creative Commons). Freely distributable with appropriate citation.

INSIGHTS-JHR
INSIGHTS-JOURNAL OF HEALTH AND REHABILITATION

Table 2: Mean age, burn accident duration and receiving physical therapy duration of the participants

	N	Minimum	Maximum	Mean	Std. Deviation
Age	130	5	79	29.08	15.531
How long has it been since you met with this burn accident?	130	5	36.0	5.823	6.8987
How long have you been receiving physical therapy sessions since the accident?	**130**	**1**	**30**	**3.39**	**3.970**

Table 3: Self- perceived improvement of burn survivors receiving physical therapy treatment

		strongly agree	agree	Neutral	disagree	strongly disagree
How much satisfy are you with your physical Therapy treatment?	N=130	89	35	1	4	1
	%	68.5	26.9	0.8	3.1	0.8
After taking physical therapy treatment has the extent of your pain decreased?	N=130	50	69	2	8	1
	%	38.5	53.1	1.5	6.2	0.8
Are your scars healing better after taking physical therapy treatment?	N=130	65	41	4	18	2
	%	50	31.5	3.1	13.8	1.5
After taking physical therapy treatment do you think the extent of your movement has improved?	N=130	67	58	1	4	0
	%	51.5	44.6	0.8	3.1	0
Are you able to perform your ADL'S with ease after physical therapy?	N=130	18	36	2	62	12
	%	13.8	27.7	1.5	47.7	9.2
Are you able to bathe independently after physical therapy treatment?	N=130	21	31	2	58	18
	%	16.2	23.8	1.5	44.6	13.8
Are you able to dress independently after physical therapy treatment?	N=130	19	34	1	55	21
	%	14.6	26.2	0.8	42.3	16.2
Do you think your self-grooming activities have improved after taking physical therapy treatment?	N=130	45	49	2	28	6
	%	34.6	37.7	1.5	21.5	4.6
Do you think your ability to transfer (from lying to sitting then standing) has improved after taking physical therapy treatment?	N=130	27	88	0	12	3
	%	20.8	67.7	0	9.2	2.3
Are you able to perform work/education related activities with ease after physical therapy treatment?	N=130	15	25		65	25
	%	11.5	19.2		50	19.2
Are you able to interact better socially after physical therapy treatment?	N=130	12	86	1	19	12
	%	9.2	66.2	0.8	14.6	9.2
Has the level of your frustration decreased after taking physical therapy treatment?	N=130	15	79	3	17	16
	%	11.5	60.8	2.3	13.1	12.3
Do you think you have regained your self- confident after physical therapy treatment?	N=130	17	77	1	17	18
	%	13.1	59.2	0.8	13.1	13.8
Do you think after taking physical therapy treatment your participation in routine exercise has improved?	N=130	10	30	1	55	34
	%	**7.7**	**23.1**	**0.8**	**42.3**	**26.2**

© 2025 et al. Open access under CC BY License (Creative Commons). Freely distributable with appropriate citation.

INSIGHTS-JHR
INSIGHTS-JOURNAL OF HEALTH AND REHABILITATION

Table 4: Outcome Stratified by Age Group

Age Group	Mobility Score	ADL Score	Confidence Score
<20	4.35	2.54	3.38
21-40	4.36	2.99	3.55
41-60	4.27	3.41	3.18
61-80	4.5	1.5	4

Table 5: Outcome Stratified by Gender

Gender	Mobility Score	ADL Score	Confidence Score
Female	4.35	3.01	3.54
Male	4.34	2.79	3.34

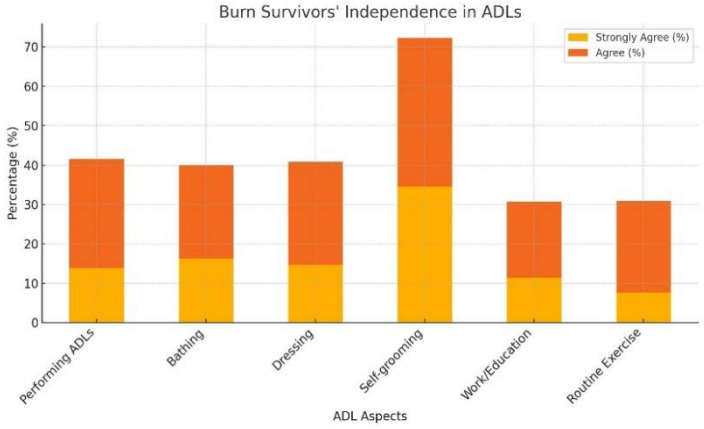

Figure 2 Burn Survivors Independence in ADLs

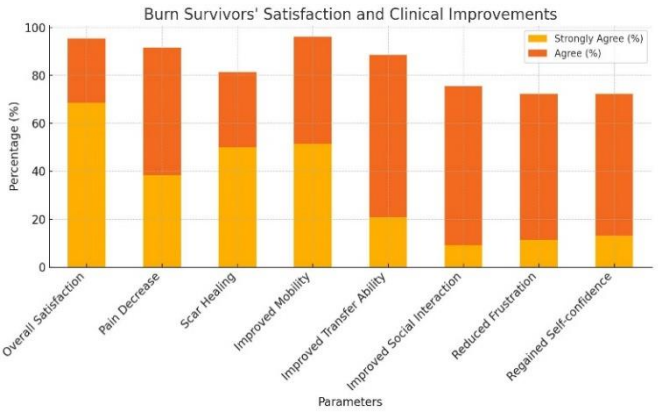

Figure 1 Burn Survivors Satisfaction and Clinical Improvements

DISCUSSION

The present study investigated the self-perceived improvement among burn survivors receiving physiotherapy in hospital settings across Lahore, revealing generally favorable rehabilitation experiences. A significant proportion of participants—95.4%, reported satisfaction with physiotherapy, and 91.6% noted a decrease in pain following intervention. These findings underscore the integral role of physiotherapy in enhancing both physical outcomes and overall patient satisfaction. The results align with evidence from previous randomized controlled trials demonstrated the effectiveness of interventions such as pressure therapy in improving clinical outcomes among burn patients. Specifically, therapy administered at 15–25 mmHg resulted in better therapeutic results compared to low or no-pressure treatment, reinforcing the impact of structured physiotherapeutic modalities in burn rehabilitation (11,12). Parallel conclusions were drawn from earlier studies exploring home-based structured exercise programs, where participants reported improvements not only in physical functioning but also in psychological and social well-being. Similarly, in the current study, 75.4% of participants reported improved social interactions, and 72.3% noted reduced frustration levels, suggesting that physiotherapy contributes to emotional restoration and social reintegration post-burn injury (13,14). These findings substantiate the multidimensional benefits of rehabilitation strategies that extend beyond musculoskeletal recovery, integrating psychosocial resilience into the continuum of care. Another controlled clinical trial further supported the current findings by demonstrating that comprehensive rehabilitation interventions markedly improved mental and physical health, independence in activities of daily living (ADLs), and quality of life among burn survivors (15,16).

Despite these positive outcomes, the present study also highlighted persistent challenges, particularly regarding functional independence. Less than half of the participants reported being able to bathe or dress independently after physiotherapy, indicating a critical gap between perceived satisfaction and practical functionality. This discordance reflects similar findings in previous literature, which identified post-rehabilitation limitations in daily self-care tasks despite improvements in pain and mobility (17,18). Such findings suggest that while standard physiotherapy protocols may successfully address pain and range of motion, they may fall short in translating these gains into

© 2025 et al. Open access under CC BY License (Creative Commons). Freely distributable with appropriate citation.

INSIGHTS-JHR
INSIGHTS-JOURNAL OF HEALTH AND REHABILITATION

enhanced independence in ADLs. Thus, there is a pressing need to integrate more task-specific functional training into burn rehabilitation programs (19). A key strength of this study lies in its focus on patient-reported outcomes, which provide a nuanced understanding of rehabilitation effectiveness from the survivor's perspective. The use of a validated questionnaire enhanced the reliability of responses, while inclusion of a diverse patient population across multiple public hospitals improved the generalizability of the findings. Moreover, the study's incorporation of psychological and social dimensions into the evaluation of physiotherapy outcomes represents a comprehensive and patient-centered approach.

Nonetheless, the study is not without limitations. The sample size, though sufficient for initial observations, was reduced from the initially calculated value due to participant availability constraints. Additionally, the exclusion of patients with third-degree burns, primarily due to isolation requirements, limits the study's applicability to the most severe cases, where recovery trajectories may differ significantly. Another notable gap was the absence of long-term follow-up, which would have provided insights into sustained benefits or regressions post-treatment. Furthermore, while demographic analyses were conducted, the study did not include objective clinical outcome measures, such as range of motion quantified by goniometry, which could have complemented the subjective responses. Future research should address these limitations by incorporating larger, more heterogeneous samples that include patients with all levels of burn severity. Longitudinal designs assessing changes over time and the sustainability of therapeutic gains would be particularly valuable. The inclusion of mixed-method approaches, combining quantitative outcome measures with qualitative patient narratives, could offer deeper insights into the lived experiences of burn survivors (20). Additionally, greater emphasis on individualized rehabilitation planning—targeting specific ADLs and integrating mental health support—may optimize both functional independence and psychosocial recovery. In conclusion, the findings of this study reinforce the significance of physiotherapy as a cornerstone in the rehabilitation of burn survivors, with notable improvements in satisfaction, pain reduction, and psychosocial well-being. However, the persisting challenges related to independence in daily tasks call for a more holistic, task-oriented, and psychologically informed rehabilitation approach to fully meet the needs of this population.

CONCLUSION

This study concludes that burn survivors undergoing physiotherapy generally experience meaningful self-perceived improvement, particularly in pain reduction, mobility, and scar healing. The high levels of satisfaction reported by participants affirm the essential role of physical therapy in post-burn rehabilitation. Notably, gains were also observed in emotional well-being and self-confidence, reflecting the broader impact of rehabilitation beyond physical recovery. However, persistent difficulties in performing daily living activities suggest that while current interventions are effective, they must be further tailored to address individual functional limitations. These findings highlight the importance of adopting a more holistic, patient-centered approach in physiotherapy to enhance the overall recovery experience for burn survivors.

AUTHOR CONTRIBUTION

Author	Contribution
Baseerat Iqbal*	Substantial Contribution to study design, analysis, acquisition of Data Manuscript Writing Has given Final Approval of the version to be published
Lalazar Chaudhry	Substantial Contribution to study design, acquisition and interpretation of Data Critical Review and Manuscript Writing Has given Final Approval of the version to be published

REFERENCES

1. Mota WM, Salles AG, Remigio A, Gemperli R, Alonso N. Microneedling in the Treatment of Post-burn Hypertrophic Scars. Aesthetic Plast Surg. 2024;48(12):2321-9.
2. Khanipour M, Lajevardi L, Taghizadeh G, Azad A, Ghorbani H. Effects of an Occupation-Based Intervention on Hand and Upper Extremity Function, Daily Activities, and Quality of Life in People With Burn Injuries: A Randomized Controlled Trial. Am J Occup Ther. 2023;77(5).

© 2025 et al. Open access under CC BY License (Creative Commons). Freely distributable with appropriate citation.

3. Kamel FAH, Basha MA. Effects of Virtual Reality and Task-Oriented Training on Hand Function and Activity Performance in Pediatric Hand Burns: A Randomized Controlled Trial. Arch Phys Med Rehabil. 2021;102(6):1059-66.
4. Aguilera-Sáez J, Dos Santos BP, Serracanta J, Monte-Soldado A, Bosacoma P, Rivas-Nicolls D, et al. The effect of Extracorporeal Shock Wave Therapy in the treatment of burn scars: A prospective, randomized, controlled trial. Burns. 2022;48(3):577-84.
5. Aguilera-Sáez J, Muñoz P, Serracanta J, Monte A, Barret JP. Extracorporeal shock wave therapy role in the treatment of burn patients. A systematic literature review. Burns. 2020;46(7):1525-32.
6. Cuijpers MD, Baartmans MGA, Joosten KFM, Dulfer K, van Zuijlen PPM, Ket JCF, et al. The efficacy of therapeutic interventions on paediatric burn patients' height, weight, body composition, and muscle strength: A systematic review and meta-analysis. Burns. 2024;50(6):1437-55.
7. Eid MM, Abdelbasset WK, Abdelaty FM, Ali ZA. Effect of physical therapy rehabilitation program combined with music on children with lower limb burns: A twelve-week randomized controlled study. Burns. 2021;47(5):1146-52.
8. Frew GH, Abraham I, Lancaster D, Drake PJH, Cassell JA. Evaluating the patient experience of an emergency burns assessment service in a UK burn unit using a service user evaluation questionnaire and process mapping. Burns. 2020;46(5):1066-72.
9. Kishawi D, Wozniak AW, Mosier MJ. TBSA and length of stay impact quality of life following burn injury. Burns. 2020;46(3):616-20.
10. Kondo T, Tsuboi H, Nishiyama K, Takahashi G, Nishimura Y. Effects of rehabilitation treatments jointly considered by physiatrists and rehabilitation therapists in patients with severe burn injury. Burns. 2024;50(6):1621-31.
11. Özkal Ö, Kısmet K, Konan A, Hayran M, Topuz S. Treadmill versus overground gait training in patients with lower limb burn injury: A matched control study. Burns. 2022;48(1):51-8.
12. Plaza A, Paratz J, Cottrell M. A six-week physical therapy exercise program delivered via home-based telerehabilitation is comparable to in-person programs for patients with burn injuries: A randomized, controlled, non-inferiority clinical pilot trial. Burns. 2023;49(1):55-67.
13. Radwan NL, Ibrahim MM, Mahmoud WS. Effect of Wii-habilitation on spatiotemporal parameters and upper limb function post-burn in children. Burns. 2021;47(4):828-37.
14. Seyyah M, Topuz S. The effect of mirror therapy on joint movement, pain and functionality in acute upper limb burns. Burns. 2023;49(6):1432-8.
15. Lee SY, Cho YS, Seo CH, Seo J, Joo SY. Clinical utility of extracorporeal shock wave therapy in restoring hand function of patients with nerve injury and hypertrophic scars due to burns: a prospective, randomized, double-blinded study. Int J Surg. 2024;110(12):7487-94.
16. Karakaya E, Akdur A, Ayvazoğlu Soy E, Araz C, Ok Atilgan A, Özturan Özer E, et al. Effect of Subcutaneous Topical Ozone Therapy on Second-Degree Burn Wounds in Rats: An Experimental Study. J Burn Care Res. 2021;42(6):1243-53.
17. Saleh SE, Abozed HW. Technology and Children's health: Effect of virtual reality on pain and clinical outcomes during hydrotherapy for children with burns. J Pediatr Nurs. 2024;78:e155-e66.
18. Yang R, Ren L, Wang H, Guo L, Liu L, Chen M, et al. Extracorporeal shockwave therapy for the treatment of deep dermal burns of the hand: A preliminary study. J Plast Reconstr Aesthet Surg. 2025;102:185-94.
19. Wang Y, Hua Z, Tang L, Song Q, Cui Q, Sun S, et al. Therapeutic implications of extracorporeal shock waves in burn wound healing. J Tissue Viability. 2024;33(1):96-103.
20. Abonie US, Ackah M, Mudawarima T, Rockson A. Effectiveness of physiotherapist-led exercise interventions for burn rehabilitation: A systematic review and meta-analysis. PLoS One. 2024;19(12):e0316658.

© 2025 et al. Open access under CC BY License (Creative Commons). Freely distributable with appropriate citation.