

Managment Wound Healing: The Importance of a Wound Clinic in Hospital Centers

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Abstract

Background: In clinical practice, acute and chronic wounds continue to be a challenge. Unfortunately, wound care is often inadequate or inappropriate. The implementation of wound clinics involving an interdisciplinary team for wound care and treatment yields favorable clinical outcomes as well as a reduction in economic expenses due to a higher rate of healing, a decrease in hospital stays, and a reduction in the number of readmissions. The establishment of wound clinics enhances the utilization of diagnostic, preventive, and therapeutic resources, improving the quality of life of patients and facilitating their reintegration into their normal lives. The objective is solely to describe the importance of wound clinics in the medical profession. **Methods:** A retrospective literature search was conducted to include articles no more than 10 years old that reported measures or results of the study in order to perform a literature review and describe the importance of wound clinics in medical practice. **Results:** A total of 7 articles were obtained with the inclusion criteria, the most recent being from the year 2023 and the oldest from 2013. **Conclusion:** An important area for improvement in the healthcare industry is the management and treatment of complex wounds. The establishment of wound clinics offers comprehensive and specialized care for both acute and chronic complex wounds with the goal of enhancing secondary ill-

ness patients' prevention, treatment, and rehabilitation.

Keywords

Wound Clinic, Pressure Ulcer, Chronic Wound, Wound Healing, Quality of Life

1. Introduction

Complicated acute and chronic wounds are a challenge for health care personnel and are a major problem due to their high prevalence. The impact on quality of life encompasses both the patient and primary caregivers as a result of the socioeconomic implications arising from the underlying pathology [1]. According to estimates, 6.5 million people are affected by chronic wounds in the United States, with annual treatment costs of up to \$25 billion USD [2]. Chronic wounds affect approximately 2% of the population, with a variety of etiologies and a mortality rate comparable to some types of cancer [3].

Various therapies have been employed in wound healing, and certain therapies have endured for a long time, especially those whose origins can be traced back to ancient Egypt, Greece, and Rome.

J. Lister observed a correlation between the putrefaction of surgical wounds and high mortality; thus, he devised an antiseptic protocol whereby moist bandages soaked in carbolic acid were applied to wounds [4]. Studies carried out by Bull, *et al.* [5] and Schilling, *et al.* [6] demonstrated a favorable evolution of chronic wounds covered by a dressing formed by a semipermeable nylon window fixed to a polyvinyl adhesive frame. In 1962, George Winter published in the journal *Nature* the benefits of wound healing in a moist environment, which healed twice as fast as traditional therapy [7].

When specialized wound care clinics began to be implemented in some hospital units in the late 1990s, advances in wound care became relevant [8]. Wound clinics emerged as units responsible for the management, prevention, treatment, education, and rehabilitation of patients with complex wounds [9].

In the world, there has been an increase in the care and advanced management of complex wounds, as well as the importance of having specialists for the management of highly complex injuries [10]. In certain institutions, wound care is still performed empirically, and there are no dedicated physical spaces for wound care. This makes it challenging to provide comprehensive patient management due to the lack of a comprehensive assessment of all aspects and implications in the daily life of a wound [9].

In Mexico, a set of general guidelines has been developed for the implementation of wound clinic models of care within health units. The objective is to facilitate universal access to healthcare services that are specialized in the care of acute and chronic wounds, thereby enhancing the quality of life of patients, influencing the prevention of injury development in hospitalized patients, and re-

ducing the economic impact of wound care in general [11]. Our country has sufficient technology for advanced wet therapy, and new products for wound care are being incorporated. However, few health personnel have the academic endorsement and support of professional practice for the care, treatment, and follow-up of patients with wounds [12].

The intervention of specialists in the management of complex wounds has a direct impact on the efficacy of treatment and healing [13]. It has been shown that the most frequent integration of the wound care team consists of: nurses: 29%, surgeons: 17%, physicians: 15%, rehabilitation: 14%, podiatrists: 9%, nutrition: 5%, administrative: 7% and family: 1% [14]. Chronic wounds whose healing process is impaired should be managed on a multidisciplinary basis [10].

The objective of this article is to comprehensively review the literature on the advantages of having specialized clinics in hospital centers for the management of complicated wounds that require interdisciplinary approaches.

2. Material and Methods

This is a descriptive and retrospective study in which a bibliographic review of indexed articles related to the analysis of the clinical and economic benefits obtained with a wound clinic in hospital centers by an interdisciplinary team in specialized units was performed.

The review of articles was performed in the period from January 2023 to July 2023, the databases consulted were: MEDLINE, PUBMED, Cochrane, ScienceDirect, as well as primary sources from congresses associated with wound care. The key words for the search were: wound clinic, clinical wound benefits, pressure ulcer, chronic wound, wound healing, quality of life. Information necessary to identify the wound-related topic was collected.

The inclusion criteria for the selection of articles were articles less than 10 years old and articles that reported measures or results of the study, only papers written in English and Spanish were included. A total of 32 articles were found of which 25 were excluded because they did not meet the inclusion criteria. In the end, 7 articles were included that complied with similarities in demonstrating the benefits obtained in a wound clinic in hospital centers by an interdisciplinary team in specialized units.

The analysis of the data related to wounds was divided into 3 themes: as well as a decrease in economic costs by achieving a higher rate of healing, decrease in hospital stay, as well as the number of readmissions, and a decrease in the number of hospitalizations.

3. Results

A total of 32 articles were found, of which only 7 met the inclusion criteria established for the study. Of the 7 articles found, the majority correspond to the year 2013 (28%), the following articles are from the year 2016, 2018, 2019 and the most recent from the year 2023. The most frequently observed chronic

wounds in wound clinics are diabetic foot ulcers, pressure ulcers, venous ulcers. A description of the results of the articles found has been added, the description of the literature can be found in the discussion section.

4. Discussion

Acute complicated, and chronic wounds are a serious public health problem worldwide. When wound healing does not proceed normally and anatomical and functional integrity is not achieved within approximately 4 weeks, wounds are considered chronic [15]. Several wound-associated factors are important contributors to wound non-healing: infection prolongs the inflammatory response, delays collagen synthesis, epithelialization, and tissue damage [2].

The chronic wounds most commonly seen in wound clinics are diabetic foot ulcers, pressure ulcers, venous leg ulcers, and non-healing surgical site infections. Diabetic foot ulcers are estimated to have an annual incidence of between 1% and 4%, with a lifetime risk of occurrence between 15% and 25%. The annual expenses incurred for amputation, rehabilitation, and long-term care for diabetic foot ulcers in the United States amount to approximately \$10.9 billion, and these figures are projected to continue rising as a greater number of new cases of diabetes are diagnosed [16]. Pressure ulcers affect between 1.3 and 3 million adults, are a common problem in nursing homes, and are estimated to cost between 1,687 million EUR and 1,769 GBP per year in Spain and the UK [17]. Venous leg ulcers affect up to 1% of the world's population, not to mention the recurrences that occur in up to 70% of the population [18]. Surgical site infections occur in up to 5% of procedures and are an increasingly frequent post-operative complication. About 0.5% of the total hospital budget in the United States is estimated to be spent on the management of these complications [19].

The economic benefits of having wound clinics in hospital centers for the prevention and treatment of chronic wounds are not well documented in published articles [20]. The primary expenses incurred in the clinics encompass the treatment itself and its associated complications, such as delayed healing, pain, infection, amputation, admission, hospital stay, and delayed discharge. Ramsay, *et al.* identified the necessity for the creation of models to enhance the precision and practicality of economic evaluations of wound treatment [21].

The different studies examining wound treatment costs vary in complexity, addressing costs, time spent by health care personnel, and cost-effectiveness studies. The cost reduction results are consistent with the existence of a specialized clinic. In terms of cost-effectiveness and health care benefits, the expense of wound care procedures is outweighed by the resources that are used differently [20].

There are reports suggesting that having a specialized wound clinic will reduce the number of hospital stays as well as the number of complications and treatment costs. The reduction in amputations has been demonstrated in numerous studies, with a rate ranging from 82% to 62%. Most of the cost reductions were

obtained in nursing and waste disposal products [22].

The impact of chronic injuries on the quality of life is impacted by the disruption of personal and familial integrity resulting from hospitalizations, occupational inactivity, and financial expenses. Siersma, *et al.* assessed the quality of life of patients with chronic injuries in hospital centers using the EuroQol questionnaire (EQ-5D). Their findings revealed a score of 0.58 (SD 0.33), indicating a low quality of life. Therefore, it is recommended that treatment should be comprehensive, encompassing physiotherapy and pain management by specialized personnel. It has been documented that the efficacy of treatment and healing is influenced by specialized wound clinic staff [23].

Chronic wounds cause significant morbidity and mortality, leading to significant medical costs. It is vital to ensure that nursing staff are prepared to care for patients with wounds and that they have access to continuing education programs and clinical practice guidelines with the latest evidence. This will ensure that the quality of interventions implemented to promote wound healing is maintained [2]. Preventive and therapeutic measures encompass disease-specific approaches [9].

It is essential to replace the use of traditional healing materials (alcohol, hydrogen peroxide, and conventional gauze) with modern moist interactive dressings, as well as complementary therapies that promote healing, such as negative pressure therapy. This would be a more cost-effective option for patients who do not achieve lesion closure but have the capacity to heal [15].

Several current techniques in wound bed preparation have proven to be effective in aiding the healing process. The process begins with a correct diagnosis of the wound's etiology and optimization of the patient's medical status, including blood flow to the wound site. Debridement is emphasized as the basis for most wound healing strategies. In order to determine the timing of advanced therapeutic intervention, it is important to monitor the progress and evolution of wound healing with weekly measurements. A reduction in the wound area of 10 to 15% per week is considered normal healing and does not require a change in the current wound healing strategy. On the other hand, in the event that the aforementioned reduction in wound area is not consistently achieved on a weekly basis, other healing alternatives should be considered [24].

Mexico does not have a national epidemiological registry, so federal entities approach it from a perspective of obtaining information that can be used to determine, the epidemiological panorama and costs of chronic wound care in health secretariat units [25].

Finally, wound care costs represent an important economic cost for medical units as well as for the health sector. Wound care programs can help reduce costs for patients with impaired healing. The program should include: 1) Continuous training of personnel in charge of wound prevention and treatment, to promote the necessary skills and ensure adequate follow-up and evolution of the wounds. 2) Acquisition of quality supplies that promote wound healing and is

used at the right time according to the initial assessment and follow-up. 3) Record of information and epidemiology regarding the behavior of the wounds [26].

5. Authors' Position

In 2003, the wound clinic was founded at the North Central Hospital (NCH) PEMEX by MD. Cuahutémoc Márquez Espriella with the purpose of attending patients with complex wounds as well as making visits to the hospitalization services with the aim of reducing the average number of days of hospital stay and readmissions. As a part of the program, there is a home visit program for disabled patients, where highly trained nurses record the history of the wound's progression, capture a photographic record of the wound's healing, and promote self-care and discharge plans for the patient and primary caregiver. The wound clinic receives between 70 and 80 patients per week.

The patient registry is maintained by means of an electronic database, which is maintained by the nursing staff of the NCH PEMEX wound clinic. The service offers a wide variety of dressings for wet therapy, healing materials, and negative pressure systems that help the healing process. Currently, the wound clinic is under the supervision of MD. Alberto Ignacio Cahuana Quispe, who is committed to providing quality care to patients. He formed a highly qualified interdisciplinary team specializing in the management of chronic wounds.

Wound clinics have become an important tool for the evaluation and treatment of patients; clinical and economic results have shown a reduction in the number of amputations, shorter hospital stays, reduced readmissions, and an improved quality of life for patients.

6. Conclusion

The management and care of intricate wounds presents a significant opportunity for enhancement in the healthcare sector. The implementation of wound clinics provides comprehensive and specialized care for acute and chronic complex wounds, with the aim of improving prevention, treatment, and rehabilitation for people with secondary diseases that can become temporarily incapacitated. The preparation and commitment of the interdisciplinary team of the wound clinic makes a priority the need to implement specialized wound clinics in third level centers in order that people can return to their daily activities with an adequate quality of life, and consider it a medical-surgical subspecies, both for nurses and surgeons.

Conflicts of Interest

The authors of this article declare no conflicts of interest.

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