

Consequences of chronic wounds on patient's life

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Introduction

Chronic wounds are a health problem that has a negative impact on patients' lives and contributes to the increased costs of the healthcare system. They are often perceived as a disease of the elderly, because its peak incidence is between the ages of 60 and 80, but it is clear that the onset of one's disease can date back to productive age.

A chronic wound is any disruption of the physiological continuity of body tissue, regardless of its size, associated with trauma or clinical conditions with a complex healing process that lasts for more than six weeks [1]. Despite progress in care and treatment, they usually have their own hidden pathological stimulus (diabetes mellitus, vascular insufficiency, etc.), which produces a recurring and prolonged stroke, leading to severe damage. A chronic wound does not heal in the normal healing stages, it often remains in the inflammatory, infected stage and causes discomfort and suffering to the patient.

If we consider the consequences of chronic wounds on patients' lives, we cannot forget to mention social discomfort, mobility problems, unpleasant odour, etc. Chronic wounds can cause significant physical disability, chronic pain, which can lead to permanent disability of the patient, to the need for assisted housing, depression, social isolation, or even to death.

Modern medicine and nursing call for the need for comprehensive treatment and patient care and for an individual approach to the treatment of chronic wounds. It is necessary to perceive the patient as a holistic being and to comprehensively evaluate all factors influencing the wound healing process [2].

Aim – to draw attention to the consequences of chronic wounds, which affect the daily life of a patient with a chronic wound.

Chronic wound. A wound is defined as a disruption of the continuity of the skin surface and the integrity of the organism, a disruption of the anatomical structure and function of the skin, caused by various elements reaching more or less deep into the subcutaneous tissues [3].

Chronic wounds occur in trophically altered tissue or in secondary dehiscence, and they do not tend to heal for 9 weeks. The time factor varies in several authors, some state 6 weeks while others up to 12 weeks [4]. The Czech Society for Wound Treatment defines a chronic wound as “a secondary healing wound which, despite adequate therapy does not show a tendency to heal in 6-9 weeks [5].

The most common types of chronic wounds are:

- lower leg ulcers of the venous etiology are one of the manifestations of chronic venous insufficiency;

- arterial skin ulcers are a manifestation of advanced ischemic disease of the lower limbs;
- ulcerations arising from diabetes mellitus (Wagner classification grade 1-5);
- pressure ulcers (stage I-IV);
- exulcerating malignancies;
- vasculitis – ulcerating types;
- secondary ulceration in systemic diseases;
- extensive burns;
- per secundam healing defects – surgical, traumatic;
- post-radiation wound;
- skin ulcers in the field of lymphedema;
- unrecognized infections – bacterial, fungal, viral, sexually transmitted diseases;
- parasitic diseases;
- self-harm;
- reduced pain threshold;
- other causes (obesity) [4,6].

Pospíšilová [3] states that regardless of the type and extent of the wound, the wound healing process takes place in 3 stages, which overlap independently. These are: an inflammatory or exudative phase in which bleeding is stopped and wound cleaned, proliferative (granulation) phase with the formation of new granulation tissue and vascular proliferation, and reepithelialization phase with epithelial differentiation and scar formation. Failures in the healing process include the following complications: stagnation of the cleansing phase, deceleration of the granulation phase, lack of epithelialization, formation of hypertrophic scars, postoperative complications (seromas, hematomas, wound dehiscence), microbial, fungal and viral infections.

Risk factors can affect wound healing. Some of the risk factors are immutable, but can be managed with nursing care, medication, and diet [1]. Immutable risk factors include age and impaired mobility. Potentially manageable chronic risk factors are: poor cardiovascular function, vascular disease, intestinal incontinence. Risk factors that can be influenced include: diet, unplanned weight loss, poor glycemic control, smoking and poor hygiene. In general, individuals with multiple risk factors have a higher risk of developing a chronic wound. The way chronic wound is being treated and healed, prolongs the healing process [7].

Incidence of chronic wounds. We consider chronic wounds to be a public health problem. They affect 5% of the adult population in Western countries, with chronic wounds occurring in 1-2% of the population in Central Europe, with 4-5% of patients with such wounds being people over 80 [8].

The incidence of chronic wounds is currently on the rise. A preliminary search of the literature suggests that in the Slovak Republic there is currently no relevant source for determining the overall incidence and prevalence of chronic wounds, and neither are there any consolidated data available on a European scale.

We partially relied on data from the EWMA (European Wound Management Association), according to which the incidence of chronic wounds across Europe is 3,581,927 / year [9]. The most common chronic wound of the lower limb is an ulcer disease caused by chronic venous insufficiency. In general, the presence of venous lower limb ulcers is reported in approximately 1-2% of the population over 65 years of age. The peak of prevalence of this disease is after the age of 60. These wounds are more common in women. The second large group of patients with non-healing lower limb wounds are patients diagnosed with diabetes mellitus. The third important group are patients with bedsores (pressure ulcers) [10].

In 2017, according to the National Center for Health Information (NCZI), we registered 354 726 diabetics in the Slovak Republic, which represents 6517 cases per 100,000 inhabitants [11]. According to NCZI statistics, **in 2017 in Slovakia 8596 cases of diabetic foot with lesion were reported and 4196 amputations of the lower limbs were performed** [12].

Diabetic foot syndrome is defined as an infection, ulceration or destruction of deep tissues, associated with neurological abnormalities and varying degrees of foot ischemia. The International Register of Lower Limb Amputation Procedures (VASCUNET) points to large differences between countries. Slovakia is a country with the highest number of low amputations: in front of Germany, Hungary and Australia, while in the number of high amputations we are just behind Hungary, in front of Austria, Finland and Germany. While the number of amputations abroad is declining, we are witnessing an opposite trend here. In the Slovak Republic, there was also the highest number of diabetics in amputations (74.3%) [13].

After any operation, in 5–20% cases, a healing failure of the surgical wound can occur and in 2–5% of those cases these can be more serious infections. A complication of a surgical wound can destroy the result of an otherwise perfectly performed procedure. On the other hand, there is a number of patients who cannot be operated because of their chronic wounds [14].

Negative aspects of chronic wounds. Negative aspects of chronic wounds are reviewed in terms of quality of life and in terms of economic costs. Reliable socio-economic data in this area are limited. In addition, chronic lower limb wounds are not sufficiently underpinned by health care. Patients often hide them, not only by clothing, but also intentionally from doctors because they do not trust them, are afraid of social stigma, feel anxious, embarrassed or are afraid of the costs associated with treatment. Chronic wounds present high costs for health care services because they require home care, long-term hospitalizations, comprehensive treatments and adjuvant treatments, and are associated with a high recurrence rate. In this context, people with chronic wounds experience changes in

body image, mobility disorders, lack of self-care, inability to perform daily activities, pain and discomfort, which negatively affects the quality of one's life [15].

To evaluate the effects of the disease and its treatment on human life validated tools and scales are used. They serve as an indicator of the response to treatment in people with chronic wounds, taking into account physical, psychological and social aspects, functional status and vision of life. Studies of this type make it possible to identify clinical factors that affect quality of life and compare the results with scientific evidence that favors the development of nursing interventions and policies to improve care for people with chronic wounds [16].

As a result of improved healthcare, patients have been living with disability-causing chronic wounds for many years. For these people, the quality of life can be as important as the quantity of life. Health-related measures dealing with quality of life seek to assess patients' mental and social health, not just their physical problems. Wound care is an ideal area for evaluating quality of life, as these problems are rarely life-threatening, but can have a major impact on patients' lifestyle. Eventhough preliminary studies have been performed to develop tools specifically for lower limb ulceration and chronic venous insufficiency, they have not addressed similar issues in other types of wounds. Evidence suggests that chronic wounds have a significant impact on patients' health, especially in relation to body pain, mobility, and psychiatric comorbidity [17].

There are many other health problems (comorbidities) in patients with venous leg ulcers. For example, 20% of patients suffer from depression, 30% from hypertension, 25% from osteoarthritis and 10% from diabetes. Ultimately, a significant number of patients with venous leg ulcers have a reduced quality of life due to mobility impairment, depression, feelings of social isolation, fear, anger, anxiety, negative self-perception, from reduced time spent at work up to the loss of work with an adverse impact on patient's financial situation [18].

Physical consequences of chronic wounds. Pain is the most commonly reported symptom of chronic lower limb wounds and is mentioned in each of the found studies, regardless of the research design. It is also present in venous ulcers and often worsens in wound dressing or when improperly managed [19].

In venous ulceration of the lower limb, pain has the greatest impact on reducing quality of life, with up to 12-21% of patients reporting severe pain. Similar results were obtained by the study, which suggested that for up to 38% of respondents, disease-related pain is the most significant limitation in social life [20].

According to Green and Jester [21], up to 81% of patients in their study reported reduced mobility. Chronic wounds present a significant threat to various dimensions of patients' quality of life. The main reason for restricted mobility is, above all, the pain that results from a chronic wound. Such limited mobility is often complicated by the leakage of exudate from the dressing material and the associated **odour of the wound. Finding appropriate and comfortable clothing and footwear** that can hide bandages is also a common problem. In an Australian study of women with chronic wounds, the respondents describe how they had to change their clothes in

order to hide their wounds. This study also describes other lifestyle limitations that lead to an erosion of their femininity [22]. Several studies in patients with chronic lower limbs wounds have shown varying degrees of **reduction in vitality**. Chase et al [23] states a **large energy deficit** in patients suffering from chronic lower limb wounds. **Sleep disorders** are very common in those patients. These sleep disorders are mainly caused by the pain of the wound. Such insomnia results in daily fatigue as well as in lack of strength and energy.

Social and societal consequences of chronic wounds.

In his study, Hopkins [24] states that chronic lower limb wounds, especially due to exudate and odour, have a significant impact on patients' social lives. Patients reported that they had difficulty controlling these disturbing symptoms and feared reactions from their immediate surroundings. The result of these fears and embarrassment was voluntary social exclusion and resignation from social contacts. Social isolation is a significant accompanying feature of chronic wounds [18]. They lead to disability and disability impairs wound healing, thus creating a vicious circle. Disability and wage loss associated with chronic wounds represent a major socio-economic burden for patients with chronic wounds [10].

Our practical experience and information from interviews with patients with chronic wounds confirm that chronic wounds seriously impair their social status. Patients tell the nurse about their anxiety of the disease complications and subsequent disability. There is a disruption of work and other personally important relationships, which in turn decreases their zest for life. For many patients, missing or unsuitable prosthetic devices also present a problem, as they do not know where and how to ask for them, how often and to what prosthetic device they are entitled, in many cases they do not know how to use them correctly.

Economic consequences of chronic wounds.

Approximately 20% of Slovak patients in working age are treated for chronic wounds of the lower limbs. Out of the total estimated number of 45 692 people affected by chronic lower limb wounds, approximately 9 138 are of working age up to 65 years of age. It is estimated that in Slovakia approximately 914 people in working age are unable to work due to a chronic lower limb wound [25].

Thus, a chronic wound can not only limit the patient's freedom, but also their income. Douglas [19] draws attention to the experience of many patients who, prior to the disease outbreak, used to be a head of the family with responsibility for its other members, but became dependent on them afterwards. Financial uncertainty is the worst issue for them, especially for men, the breadwinners having dependent children. The negative aspect is the fear of the future and dependence on supportive people. They often feel they are being a burden to their partner or children.

Lack of financial resources for the treatment is also a serious issue, as the treatment of a chronic lower limb wound is rather expensive and the dressing material, as well as many drugs and wound coverings needs to be paid extra.

Psychological consequences of chronic wound. Many patients suffer from an unhealthy obsession with their wound, which is a constant part of their thoughts. Some patients deliberately attempt to "normalize a wound" in an effort to live a normal life [24].

In patients with chronic wounds, we observe a disruption of their partnerships and family relationships, which also has a negative impact on the intimate and sexual life of patients with chronic wounds [26].

According to the results of clinical studies, deterioration of mental health is very common in patients with chronic wounds, the incidence of depression and anxiety is increased [18].

The European Wound Management Association (EWMA) found a significant link between a patient's mental well-being and basic physiological processes in wound healing [27].

Conclusions

Looking at the various studies from a psychosomatic point of view, it is clear that patients with chronic wounds suffer from significantly restricted activity and mobility, severe pain and increased concerns about their health and disability. In general, there is a serious deterioration in the physical, social, psychological and financial areas. In addition, these patients show significantly lower self-esteem. Poor mental state worsens wound healing which can result in a vicious circle with serious negative health consequences for the patient.

As part of a nursing practice, the nurses are in close contact with chronic wound patients. In this regard, it is important that they have sufficient skills and knowledge in the field of chronic wound healing [2], that they are erudite not only medically but also socially, so they can provide the patients and their families with true and appropriate advice in this area.

In the case of chronic wounds, depending on the indication, supportive communication, psychotherapy and psychopharmacological treatment should be considered. Effective communication with the patient can reveal several problems in the area of the their psychosomatic problems, and it is always good if the patient can find in their nurse a psychological help and a support for solving their problems. Neither must we forget to satisfy the inner – spiritual needs of the patient. <https://www.karger.com/Article/Abstract/70529>.

Chronic wounds are a significant and often underestimated burden on the individual, the healthcare system and society as a whole. Information on the prevalence of chronic wounds and their consequences on life is important for policy and planning purposes, as the increasing number of older people and the incidence of diseases of civilization indicate an increased burden [28]. Knowledge of the occurrence of chronic wounds and their consequences on everyday life in relation to population characteristics is important for health, social care planning and resource allocation.

References

1. Salomé, G.,M, et al. 2016. Influence of venous leg ulcers on body image and self-confidence. *Adv Skin Care Wound Care*. 2016; 29 (7): 316-21.
2. Popovičová, M. 2020. Novyje napravlenija po zaživleniju ran. *Ukrajina. Zdorovja naciji*, 3030, 3 (60): 120-124. ISSN 2077-6594.
3. Pospíšilová, A. 2013. Quality programs and standards of treatment procedures. *Healing of chronic wounds*. Online. Cited 8. november 2013, Available online: www.cslr.cz/download/hojeni-ran-standard.pdf.
4. Hlinková, E., Nemcová, J., Huřo, E. et al. 2019. *Management of chronic wounds*. Grada Publishing, a.s., 2019. Prague. 20 p. ISBN 978-80-271-2687-3.
5. Stryja, J.2008. Summary of wound healing. 1. ed. Semily: Geum s.r.o., 2008. 199 p. ISBN 9788086256603.
6. Zelenková, H. 2020. Amputations in diabetic foot syndrome – quo vadis? In: Belovičová, M., Makara, P.: *Proceedings of scientific works: Days of practical obesitology and metabolic syndrome 16.-18.07.2020*. Collegium Humanum, Wasaw Management University. 350 p. ISBN 978-83-958245-0-0.
7. Litchford, M.2019. Proactive approach to the prevention and treatment of chronic wounds. 2020. [online]. Available online : <https://www.asaging.org/blog/proactive-approaches-help-prevent-and-treat-chronic-wounds-0>.
8. Sen, C.,K, Gordillo, G.,M., Roy, S., et al. 2009. *Human Skin Wounds. A Major and Snowballing Threat to Public Health and the Economy*. Wound repair and regeneration : official publication of the Wound Healing Society [and] the European Tissue Repair Society. 2009;17(6):7.
9. Bowler, P., G., Duerden, B., I., Armstrong, D., G. 2001. Wound microbiology and associated approaches to wound management. *Clin Microbiol Rev* 14, 244-269.
10. Margolis, D. J.2012. *Epidemiology of Wounds*. In: Mani R. et al. (eds.), *Measurements in Wound Healing*, Springer-Verlag London 2012.
11. Fábryová, L., Holéczy, P. et al.: *Diabezita. Diabetes and obesity – inseparable twins*. Brno: Facta Medica, 2019: 336 p. ISBN 978-80-88056-09-6.
12. NCZI. 2018. *Activities of diabetological clinics in the Slovak Republic*. Bratislava 2018. [online]. Available online: http://data.nczisk.sk/statisticke_vystupy/Diabetologia/Cinnost_diabetologickych_ambulancii_v_SR_2017.pdf.
13. Gašpar, L., Ambrózy, E., Mesárošová, D., Ludék, V., 2020. Amputations in diabetic foot syndrome – quo vadis? In: Belovičová, M., Makara, P.: *Proceedings of scientific works: Days of practical obesitology and metabolic syndrome 16-18.07.2020*. Collegium Humanum, Wasaw Management University. 350 p. ISBN 978-83-958245-0-0.
14. Mani, R., Romaneli, M., Shukla, V.,2013. *Measurements in Wound Healing, Science and Practice*, Springer, 2013, ISBN 978-1-4471-2987-5.
15. Newbern, S. 2018. Identification of pain and effects on quality of life from chronic wounds to secondary vascular disease with lower extremity: An integrated review. *Adv Skin Care Wound Care*. 2018; 31 (3): 102-8.
16. Cavassan, N.,R.,V. et al. 2018. Correlation between chronic venous ulcer exudate proteins and clinical profile: A cross-sectional study. *J Proteomics*. 2018; 192: 280-90.
17. Franks, P.,J., Moffatt, CH.,J. 2013. Quality of life issues in the treatment of chronic wounds. *British Journal of Community Nursing* VOL. 4, NO. 6 Published online: September 27, 2013. [online]. Available online : <https://doi.org/10.12968/bjcn.1999.4.6.7476>.
18. Ebbeskog, B., Ekman, S. 2001. Elderly people's experiences: the meaning of living with venous leg ulcer. *European Wound Management Association Journal*. 2001, 1 (1): 21-23 Franks, et al: *Community leg ulcers*. *Phlebology* 83-86, 1994.
19. Douglas. V. 2001. Living with a chronic leg ulcer: an insight into patients' experiences and feelings. *Journal of Wound Care*, 2001, 10(9): 355-60.
20. Hareendran, A.et al.2005. The impact of venous leg ulcers on quality of life. *Journal of Wound Care*, 2005, 14(2): 53-7.
21. Green, J., Jester, R. 2010. Health-related quality of life and chronic venous leg ulceration: part 2. *Wound Care*, March 2010.
22. Rich, A., McLachlan, L. 2003. How living with a leg ulcer affects people's daily life: a nurse-led study. *Journal of Wound Care*. 2003, 12(2): 51-54.
23. Chase, S. et al. 2000. Living with chronic venous leg ulcers: a descriptive study of knowledge and functional status. *Journal of Community Health Nursing*, 2000, 17(1): 1-13.
24. Hopkins, A. 2004. Disrupted lives: investigating coping strategies for nonhealing leg ulcers. *British Journal of Nursing*. 2004, 13(9): 556-63.
25. Mokán, M. et al. 2008. Prevalence of diabetes mellitus and metabolic syndrome in Slovakia. *Diabetes Res Clin Pract*. 2008 Aug;81(2):238-42.
26. Posnett, J., Franks, P., J. 2008. The burden of chronic wounds in the UK. *Nursing Times*, 2008, 104:3, 44-45. [online]. Available online: <https://www.nursingtimes.net/clinical-archive/tissue-viability/the-burden-of-chronic-wounds-in-the-uk-23-01-2008>.

27. Palfreyman, S. 2008. : Assessing the impact of venous ulceration on quality of life. *Nursing Times*, 2008, 104(41): 34–37.

28. Järbrink, K. et al. 2016. Prevalence and incidence of chronic wounds and advertising Related complications: protocol for systematic review 2016; 5 (1): 152. Published online September 8, 2016 doi: 10.1886/s13643-016-0329-y. PMID: PMC5017042.

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