

Analysis of Chronic Wound Management in Nursing

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Original Article

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Source: *Clinical Social Work and Health Intervention*
Pages: 65 – 70

Volume: 11
Cited references: 25

Issue: 3

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Keywords:

Chronic Wounds. Nurses. Management of Health Care. Self-perception.

Publisher:

International Society of Applied Preventive Medicine i-gap

CSWHI 2020; 11(3): 65 – 70; DOI: 10.22359/cswhi_11_3_10 © Clinical Social Work and Health Intervention

Abstract:

Aim: The aim of the research is to find out the degree of self-perception of advanced practice nurses in the management of chronic wounds.

Design: descriptive study.

Participants: The total of 129 advanced practice nurses working with patients with chronic, non-healing, or hard-to-heal wounds.

Methods: Own construction questionnaire. Descriptive and inductive statistics processed using IBM SPSS 20.0.

Results: The degree of self-perception of advanced practice

nurses in wound management showed positive value. Significant relationships were found between nursing self-perception and age, job position, workplaces, and frequency of chronic wound management ($p < 0.05$). The area of research and Evidence Based Nursing is insufficient.

Conclusion: The self-perception of advanced practice nurses in wound management shows a positive value. However, research results imply the need to implement research into clinical practice.

Introduction

Chronic wounds are secondarily healing wounds, which, despite of adequate treatment, do not show a tendency to heal for 6-9 weeks, but no more than 53 weeks (1, 2). They are described as the last stage of tissue destruction due to arterial or venous disorders, metabolic disorders, pressure, radiation, or malignancy. Reasons for non-healing may be malnutrition, multidrug-resistant nosocomial infection, patient immobilization and possibly marginal interest in such wounds. The prevalence of chronic wounds increases with age and with the multi-morbidity of chronic civilization diseases such as diabetes mellitus, obesity, cancer and vascular atherosclerosis (3).

The most frequent chronic wounds are ulcers. Ulcers of various etiologies have a total prevalence of 2.21 per 1000 inhabitants (4). In the United Kingdom, the prevalence of chronic wounds is estimated at 14.7 per 10 000 inhabitants. In the US, chronic wounds affect approximately 6.5 million patients (5). In Slovakia, the incidence of leg ulcers is about 1% (6), diabetic ulceration 3-10% (7, 8), and pressure injury/ulcers by active search 10-68% (9).

It is estimated that 1-2% of the population experience chronic wounds with a cost of 2-4% of health care expenditures in developed countries (10). The annual cost of wound treatment in the UK is roughly estimated at £3 billion, in Australia at \$2.85 billion, and in the US exceeded \$25 billion annually. However, the actual costs are not known. The prevalence of chronic wounds increases with age and multi-morbidity, making it difficult to separate wound care costs from the treatment of various chronic diseases (5, 11).

Chronic, non-healing, or hard-to-heal wounds cause a significant health burden, not only economically for health systems, but also physically, emotionally and socially for the patient. Care provided can vary considerably and lead to un-

deruse of evidence-based interventions (5). One of the main competencies of a nurse is the management of chronic wounds. In connection with legislative changes taking place in Slovakia (Decree of the Ministry of Health of the Slovak Republic No. 95/2018 Coll. Implementing the position of an advanced practice nurse, our intention is to find his/her possible enforcement. The area of chronic wound management requires comprehensive assessment, diagnosis and treatment in the context of multidisciplinary cooperation (12). Advanced practice nurses work alone or in collaboration with other health care professionals as a key expert in a multidisciplinary team. An advanced practice nurse in chronic wound management has the task of acting as a case manager, educator, mentor (13).

The aim of the research is to find out the degree of self-perception of advanced practice nurses in the management of chronic wounds under the conditions of the Slovak health care system.

Methods

The research group consisted of 129 advanced practice nurses working with patients with chronic, non-healing or hard-to-heal wounds. The selection criterion was at least 5 years of wound management practice.

For data collection, we chose a questionnaire of our own construction using the competences of an advanced practice nurse based on §3 of the Decree of the Ministry of Health of the Slovak Republic No. 95/2018 Coll. Validation of the questionnaire was carried out by piloting five experts in the field of chronic wound management.

The questionnaire consisted of two parts: the first included demographic variables; second included questions focused on advanced practice nursing activities in chronic wound management practices (assessment and nursing care of skin integrity disorders; nurse prescription of medical

aids; evidence-based research area; education and communication with the patient; certification of nurses). To evaluate the second part of the questionnaire we used Likert's scale on a scale of 1 to 7 (1= „definitely no, applying/practicing in low extent“; 7= „definitely yes, applying/practicing in full extent“). The questionnaire was processed in an online version via Survio software. The questionnaire reliability was high (Cronbach α = 0.937). Data collection was carried out through the SKSaPA portal. The number of nurses who received and physically opened the email was 525; 129 nurses completed the questionnaire, which represents a 24.6% response rate. Data collection was implemented in 2019. Data analysis and testing were processed by SPSS 20.0 program using descriptive and inductive statistics (Spearman correlation coefficient, Kruskal-Wallis test).

Results

The sample consisted of 129 nurses who had at least 5 years of experience in the field of chronic wound care. The mean age of the nurses was 43 ± 8.72 years and 20 ± 10.36 years of practical experience. The sample consisted of 118 women and 11 men. Since chronic wounds occur in patients with different diseases, our sample consisted of nurses working in different workplaces, in different positions and with different frequency of implementation of chronic wound management (table 1).

Table 1: Characteristics of the sample (n=129)

Workplace	n	%
institutionalized medical	47	36.4
institutionalized surgical	66	51.1
home care	16	12.5
Position		
nurse	72	55.8
manager in institutionalized care	32	24.8
manager in community care	18	14.0
nurse in outpatients'	7	5.4
Implementation of chronic wound management		
minimum	7	5.4
sometimes/rarely	36	27.9
often	86	66.7

Within the self-perception of nurses, we focused on the area of nursing care management related to preventive measures in wound care. According to the Decree of the National Council of the Slovak Republic No. 95/2018 Coll. (14), another item was the area related to the prescription of medical aids by a nurse. It is included in the competences of an advanced practice nurse referring to the Decree of the Ministry of Health of the Slovak Republic No. 89/1901 Coll. (15), which issues a list of medical aids that are authorized to describe. Other items researched were: evidence-based nursing, education and communication with the patient, certification of nurses (Tab. 2).

Table 2: Areas of nurses' self-perception (n=129)

Areas of self-perception	M (SD)
care management	6.40 \pm 1.06
prescription	2.30 \pm 1.90
evidence- based nursing	3.00 \pm 2.00
education and communication with patients	4.80 \pm 1.91
certification of nurses	4.60 \pm 1.20

Subsequently, we investigated whether nursing self-perception was significant in relation to selected items such as age, type of workplace, nurse position and frequency of chronic wound management by nurses in clinical practice. An important variable in nursing self-perception in wound management was the age of nurses. We found that the higher the nurses' age, the higher the nurses' self-perception. We also found significant differences in other items. Within the workplace type, nurses working in homecare had a higher self-perception compared to nurses working in institutional medical departments. There was a significant difference between the nurses in the manager position in the community health care area and the nurses working in the outpatient area. We also found that there was a significant relationship between the self-perception and the frequency of chronic wound management - the more often nurses manage chronic wounds the more positive their self-perception was (table 3).

Table 3: Statistical testing of relationships between variables

Relationship	Test	Value	p
self-perception vs. age	Spearman	0.191	0.030*
self-perception vs. workplace	Kruskal-Wallis	15.16	0.038*
self-perception vs. position	Kruskal-Wallis	23.295	0.000***
self-perception vs. frequency of chronic wound management	Spearman	0.258	0.003**

* p-value of statistical significance *p<0.05;

p<0.01; *p<0.001

Discussion

In our research, we focused on the management of chronic wounds from the perspective of a nurse. The statistical parameters focused on the degree of self-perception of nurses towards their own practice in the management of chronic wounds and results showed significant relationships.

The highest self-perception value was identified in the nursing care management item related to wound prevention measures. According to the Decree of the National Council of the Slovak Republic No. 95/2018 Coll. (14) which determines the extent of nursing practice provided by the nurse independently, independently based on the physician's indication and in cooperation with the physician, the nurse's competence in the area of wound management is to independently evaluate and treat skin integrity disorders.

The item concerning the prescription of medical aids achieved the lowest level of self-perception. This is included in the competences of an advanced practice nurse referring to the Decree of the Ministry of Health of the Slovak Republic No. 89/2018 Coll (15). There are 17 medical aids. In Ireland, a registered nurse prescriber (RNP) is a novelty. These nurses are subject to the conditions laid by Irish legislation and the Nursing and Midwifery Board of Ireland (16). ICN also recommends that the part of advanced practice nursing is an authorization to prescribe medicines and authorization to prescribe treatment (17).

The second lowest value was the item concerning active involvement in the research. We found that nurses do not participate in the research and development of standards in the Slovak health care. On the other hand, standardized recommendations prevent various complications, risks and adverse events. In Slovakia there is a standard for „Prevention of pressure injuries/ulcers“ and „Aseptic dressing change“, which regulates the uniform procedure of nursing care in Slovakia (18). In 2016, the book named „Standardization in Nursing“ was published, where the author critically reviewed the existing 10-year old standards of nursing care and synthesized the knowledge enriched by her own original findings as standards had not been modified since 2004 (19). The existence of international or European standards could help in developing standard diagnostic and therapeutic procedures for nursing very effectively. Slovakia lags after the developed countries in the development of standards. In 2017, legislative steps were taken to ensure the validity of standard diagnostic-therapeutic nursing procedures. Amendments to the National Council of the Slovak Republic Act No. 576/2004 Coll. ensure a legislative anchorage of standard-setting stating that the provider is obliged to provide the care correctly (20). Meanwhile, 9 standards out of 18 in the area of wound management are signed and legally made available: „Comprehensive Nursing Management of Patient with Pressure Injury/Ulcer“ and „Comprehensive Nursing Management of Pressure Injury/Ulcer Prevention of Risk Patient“ (21).

We did not find the required level of self-perception within the interest of nurses in the certification. Also, the required level of interest in working as a clinical specialist nurse in wound management did not reach the required level despite of the appropriate working conditions would be created. From the management side, the item of possible future cooperation with the nurse with the wound management certificate also did not reach the required level. In the United States in 2012 (22), education for nurses in Wound Management began: Wound, Ostomy and Continence Nurse (WOCN) - certification for Advanced Practice Registered Nurse (APRN), namely Nurse Practitioner (NP) and Clinical Nursing Specialist (CNS).

The tests validate the advanced specialized

knowledge and competence in four areas - wound, ostomy, incontinence and foot care. The conditions for obtaining a certificate are to have a license as a registered nurse and/or an advanced practice nurse, have completed master's or higher education to be an advanced practice nurse, have an accredited educational background, or have a WOCNBN specialization within five years (22). These clinical specialists deal with chronic, non-healing or hard-to-heal wounds, perform wound debridement, deal with urinary system and surgical wound infections, order bandages, diagnostic tests, apply innovative bioengineering products, etc. Their role is also to educate patients on regimen measures for various chronic diseases (23). In countries such as the UK, Wales and Ireland, there is a separate nursing speciality in the field of wound management for nurses: 'Tissue Viability Nursing' or 'Wound Management' (24). The training programs are implemented at several levels: postgraduate certificate, diploma, and masters in Wound Healing and Tissue Repair (24). In the context of education, the importance of certification in wound management is stressed (25). In a study of Zulkowski *et al.*, certified wound management nurses scored 89%. Certification and specialization in wound management plays an important role and positively affects the knowledge of nurses. The result of their final findings was to prove the merits, importance and irreplaceable role of educated certified advanced practice nurses in the field of wound management compared to non-certified nurses. In Slovakia, in the sense of increasing the level of education according to the legislation, there is an educational program for nurses in the certified work activity „Nursing care for chronic wounds“. At present, this certified work activity in Slovakia is not taught and has not been taught in the past. It would therefore be appropriate to review the situation in the context of a multidisciplinary discourse.

Conclusion

The issue of chronic wound management is highly significant. Based on our research it is evident that the self-perception of nurses towards their own practice in chronic wound management is positive but needs to be strengthened in clinical leadership, evidence-based nursing and research. We can only confirm that an advanced practice

nurse in wound management has a significant and substantial role in institutionalized and community care. In order to practice independently, the nurse needs not only education and the scope of practice, but also knowledge of developed standardized and therapeutic procedures. It can be said that the application of the role of advanced practice nurse will bring positive contribution to the management of chronic wounds for both patients and society in the form of economic benefits.

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