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**To cite this Article:** Coco, K. & Okker-Tikkunen, E. (2016) Evidence-Based Wound Care – Development Project in Finland. *Ann Nurs Pract* 3(7): 1072.

URL: <https://www.jscimedcentral.com/Nursing/nursing-3-1072.pdf>

## Review Article

# Evidence-Based Wound Care – Development Project in Finland

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Submitted: 06 September 2016

Accepted: 09 November 2016

Published: 18 November 2016

ISSN: 2379-9501

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## Keywords

- Wound care
- Evidence based nursing
- Learning by Developing

**Abstract**

The purpose of this article is to describe the results of the Learning by developing project on wound care carried out by the University of Applied Sciences and the City. The City's health care and social services have developed wound care by drawing up shared practice protocol e.g. for treating varicose ulcers. An operating model has also been drawn up of the division of responsibilities between primary health care and specialised medical care. Active wound care development work continues and the purpose of this development work is to prevent wounds, prevent wounds from becoming chronic, improve the effectiveness of treatment, speed up the healing process and improve patient safety. The aim is high-quality, systematic and uniform wound care in health care and social services. During the development activity, the number and quality of wounds in primary health care and care staff's evaluations of their own skills in treating different types of wounds were investigated, and the workplace-oriented, evidence-based wound care guides drawn up in the project were described. The subject areas of the wound care guides were treating first- and second-degree burns in primary health care and relieving wound pain without medication.

The results of this review can be used in harmonising wound care in primary health care, and in training and determining the resources allocated to wound care. Further reports are needed on preventing wounds from becoming chronic and the cost efficiency of different forms of wound care in primary health care, and also on the wound care skills and training needs among nursing staff.

**INTRODUCTION**

The City's health care and social services have developed the wound care by drawing up shared practice protocol since 2007 e.g. for treating varicose ulcers. An operating model has also been drawn up of the division of responsibilities between primary health care and specialised medical care. Active wound care development work continues and the sector has a wound care working group. The purpose of this development work is to prevent wounds, prevent wounds from becoming chronic, improve the effectiveness of treatment, speed up the healing process and improve patient safety. The aim of the work is to uphold a high-quality, systematic and uniform wound care in health care and social services. Several theses on topics that benefit practice and working life will be produced with nursing experts in this Learning by Development (LbD) project. The purpose of this article is to describe the results and outcomes obtained in wound care development projects implemented according to the LbD model. Correct and uniform treatment practices play an important role in ensuring that everyone can enjoy high-quality treatment that complies with clinical requirements. During the development activity, the number and quality of wounds in primary health care and care staff's evaluations of their own skills in treating different types of wounds were investigated,

and the workplace-oriented, evidence-based wound care guides drawn up in the project were described. The subject areas of the wound care guides were treating first- and second-degree burns in primary health care and relieving wound pain without medication [1-4].

**The issues of chronic wound care due aging in Finland**

Development of wound care is important as the number of chronic wounds is increasing and their treatment causes a significant burden to health services. This is a topical subject as an ageing population sets new challenges to wound care. Age is a significant risk factor of chronic wounds and we can assume that the number of chronic wounds will increase in future. An increase in diabetes and cardiovascular diseases has an effect on the occurrence of chronic wounds. Wound care causes costs to society [5] as costs of treating chronic wounds have been estimated to around €190–270 million per year. This means that €5,000–7,000 are spent on each patient treated because of a chronic wound [6,7]. The population of the City is more than 200,000 people, so the sample of people receiving treatment is broad-based [8].

In Finland, 1.3–3.6% of the population will develop a chronic lower extremity wound at some point in their lives. It would be

possible to prevent or treat a significant part of these wounds at an early stage, but resources are often directed at treatment of wounds with complications. Treating chronic wounds is challenging and requires constant research and also training for nursing staff. It is possible to prevent wounds from becoming chronic by selecting the appropriate treatment for the diagnosis. This sets challenges for nursing, in particular, as chronic wounds cause unnecessary suffering to patients and costs to both patients and society. A wound is considered chronic when it has not closed within four weeks and the healing process has either slowed down or stopped. It is estimated that at least 20,000 people seek treatment because of burns in Finland.

Evidence-based wound care is cost effective and patient-oriented. The key components of a holistic approach to wound care include identification of the wound type and monitoring and assessment of the wound [9], pain relief [10,11], aseptic techniques [12] and documenting [13,5]. Deficiencies in competences and a very wide range of different ways of treating a wound can be identified in practical nursing [5,14,15].

The accuracy and efficiency of treatment can be enhanced by the use of field-specific terminology and evidence-based practices and familiarity with them. For instance, additional training in the identification of wound quality for nursing staff enhances the use of appropriate products and forms of treatment in wound care and harmonises treatment practices, which increases the effectiveness of wound care [16]. [17] mentioned that there are deficiencies regarding evidence-based recommendations for the treatment of acute wounds in the competence of nursing staff.

The common factor with patients that seek treatment for wounds is wound-related pain. The methods of pain relief without medication are easy and safe. However, they are not widely used at the moment. Although relieving pain without medication should be the foundation of pain relief, it is often used as secondary treatment [28]. The different forms of pain relief without medication can be used alone or to support medical treatment [19]. Pain relief without medication helps particularly with anxiety and stress, and helps the patient gain an improved sense of coherence [20].

### **Aiming at shared practices and wound care skills that meet the needs**

This project investigated the wounds treated in primary health care in the course of one day in 2008 and 2015. Data were collected using a questionnaire in which respondents (wound care nurses) indicated whether the wound was a venous, ischemic, pressure, diabetic or complex ulcer or had an unspecified aetiology. The study was carried out as cross-sectional survey in health centres, hospital wards of health centres, home care, assisted living facilities and nursing homes. As a whole, the number of wounds had increased in almost all primary health care units since 2008. A decrease was seen in hospital wards of health centres only. The results of this report show a considerable increase in the number of chronic wounds treated in primary health care. It can be concluded on the basis of the days studied in 2008 and 2015 that the number of wounds in 2015 was 67% higher than in 2008 [1].

In one of the studies carried out as part of this project, nursing

staff regarded their competence in aseptic techniques in wound care as good. On the other hand, [14] concludes that nursing staff have gaps in their knowledge of treatment of infected wounds. Special attention should be paid to the appropriate use of antimicrobial wound care products. Furthermore, aseptic activities and awareness of aseptic techniques are an important part of nursing, and one of the objectives of wound care is to prevent infections and possible problems at an early stage. Up to one quarter of care-related infections could be prevented by improving hand hygiene [21].

The wound care guide is an important tool for nursing staff at health centres. The share of burns in all injuries is about 5%, which is reasonably small [22]. This in turn leads to a situation in which individual members of nursing staff do not encounter burns very often and a guide is therefore required in which correct treatment practices and guidance for the patient can be found quickly. The guide for treating burns, which was produced in the project, was aimed at producing knowledge about treating first- and second-degree burns and it provides clear solutions for their treatment. The guide increases know-how, enabling not only wound care nurses but also other nurses to participate in the treatment of burns. At the best, the guide helps find appropriate solution models for the treatment of burns by supporting nurses' resources. This guide provides concrete examples of treatment and products.

As primary health care patients with different kind of wounds nearly always suffer from wound pain both nursing staff and patients need information about pain relief without medication in professional use and in professional environments. Relieving wound-related pain is a central part of wound care. The following forms of pain relief without medication were selected to the guide for pain relief without medication in cooperation with wound care experts: mental exercises, relaxation exercises, humour, conversation, music, physical therapy and position treatment. The efficiency of mental exercises is based on positive association [23]. The experience of pain can be relieved with the help of relaxation [24]. Relaxation methods also help relieve pain directly through affecting the functioning of the autonomic nervous system and muscles [25]. With many patients, humour is a pain-relieving factor as laughter relieves tension and reduces stress. [26] Hope plays an important role in the treatment of acute wound pain. The patient feels better when told that the condition will pass [27]. A conversation is possibly the easiest way to implement pain relief without medication. Stress increases the sensation of pain, so the experience of pain can also be decreased through conversation. Psychological treatment and treatment forms providing verbal support proved to be more important than expected in providing treatment without medication for acute wound pain [28], which was taken into consideration when the guide was developed. Music has been proven to decrease patients' anxiety. Decreasing anxiety directly correlates with the experience of pain. Music reinforces the effect of pain relief medication and treatment activities, improves patients' mood and increases the individual's emotional capacities [29]. Physical pain relief methods are the most common methods without medication [28]. Thermotherapy helps relax the muscles and reduces the feeling of pain [28]. Patient positioning is a safe and easy way to treat patients suffering from wound pain. Correctly

implemented patient positioning reduces stretching, swelling and pain in the tissue [30]

## DISCUSSION & CONCLUSION

From the societal point of view, treating chronic wounds uses a large proportion of the appropriations granted to health care. As prevention saves medical care costs, it could be more useful to allocate resources to training staff in wound prevention. This project provided supervisors with information about competences required of nursing staff to be used, for example, when recruiting. Increasing resources in wound care training would make it possible to harmonise wound care in work units, and in primary health care and specialised medical care. The results of the report will particularly benefit nursing staff in primary health care when they improve their wound care skills. More wound care training should be available in health care work environments as the number of wound care nurses and nurses familiar with wound care in primary health care is too small and nurses' expertise and competence cannot be maintained due to deficiencies in training. A clear wound care strategy could guarantee a better treatment chain for wound patients. Efficient treatment chains and uniform treatment practices make it possible to prevent wounds from becoming chronic, promote a faster healing process, prevent amputation, reduce treatment costs and improve patients' quality of life.

As the majority of wounds could be prevented or treated at an early stage, special attention in nursing should be paid especially to preventing wounds from becoming chronic and to investigating and addressing the causes of the wounds. Adequate wound care training would above all improve the care received by patients. According to this report, it would appear that more competence is required particularly in the treatment of complex chronic wounds. A complex wound is a challenging concept because the primary cause of this kind of chronic wounds cannot be clearly identified and this again may complicate choosing the correct form of treatment. Harmonisation of all wound care practices at national level would ensure holistic, evidence-based nursing and the same quality of nursing to everyone.

Nursing staff estimated that their knowledge of treating different types of wounds was good, but they did not necessarily comply with the wound care recommendations [31]. Because of the constant increase in the number of chronic wounds, it is important to pay attention to developing wound care skills. The quality of the treatment and the uniformity of the quality can be improved by implementing evidence-based nursing, which means that the best up-to-date knowledge, such as new research results or expert statements, are considered and used in providing care that meets the individual needs of the patients. At the same time, medical errors, treatment costs [32] and patients' suffering are reduced [11].

Teaching provided in wound care varies in the curriculum of health care education. However, it must be taken into consideration that, in addition to the theory students learn in their educational institutions, they also improve their wound care skills in work placements that promote their professional skills. Still, as wound care is a significant part of clinical nursing and nursing competence, it would be important to increase

the visibility of wound care skills also in the curriculum. Strengthening the role of wound care training in the health sector would enhance the development of the quality of wound care. In this report, nursing staff estimated that the training they had received in their educational institutions had been insufficient. Similar results have been obtained in earlier studies and they emphasise the need for continuing training in treating wound infections [14,12] and strengthening the basic skills of students of nursing in treating chronic wounds [15]. Adequate wound care training would above all improve the care received by patients. Harmonisation of all wound care practices at national level would ensure holistic, evidence-based nursing and the same quality of nursing to everyone.

According to the results, the majority of nursing staff would use pain relief in wound care [10] point out that nursing staff should master the different pain relief methods and implement them while taking into account the individual needs of the patients. Wound care should always be as painless as possible to the patient. It should be possible to use methods without medication in all nursing more than currently. Several methods of treatment without medication exist and they can be implemented in a number of different ways. Like pain, also pain relief varies between individuals. Nursing staff must always take into account the individual needs of the patient whenever pain relief is implemented without medication [18]. There should be more training in assessing wound pain and its treatment options in basic studies and workplaces so that nurses could better identify the signs of pain and anticipate pain related to wound care. When humour is used in treatment, it is important to identify situations in which humour can be used and how it is used. Humour is not suitable for all situations, nor is it a suitable form of treatment for all patients. To be able to use humour, nursing staff must have a good understanding of human nature [26], when physical treatment is implemented, attention must be paid to the guidance given to patients as the treatment may be harmful and increase pain if not performed correctly [28].

Nursing staff estimated that they had theoretical basic knowledge about relieving acute wound pain and that their activities corresponded closely with the understanding they had from the theory of pain relief. The methods and resources in the operating environment affect the viability of the different treatment methods and, despite their effectiveness, it was not possible to use all the proposed methods.

According to the results, nursing staff estimated that their knowledge of aseptic techniques in wound care was good. On the other hand, [14] concludes that nursing staff have gaps in their knowledge of treatment of infected wounds. Special attention should be paid to the appropriate use of antimicrobial wound care products. Furthermore, aseptic activities and awareness of aseptic techniques are an important part of nursing, and one of the objectives of wound care is the prevention of infections and early intervention in possible problems. Nursing staff have a great responsibility in preventing bacteria from spreading from patient to patient. Up to one quarter of care-related infections could be prevented by improving hand hygiene [21]. If the number of wound infections falls, the costs from wound care will also decrease and treatment times will shorten.

The results of this review can be used in harmonising the City's wound care in primary health care, and in education and determining the resources for wound care. Further reports are needed on preventing wounds from becoming chronic and the cost efficiency of different forms of wound care in primary health care, and also on the wound care skills and training needs among nursing staff.

## ACKNOWLEDGEMENTS

This review was supported by Laurea University of Applied Sciences in Finland.

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### Cite this article

Coco K, Okker-Tikkunen E (2016) Evidence-Based Wound Care – Development Project in Finland. *Ann Nurs Pract* 3(7): 1072.