Chronic wound assessment and documentation- Checklist

Literature review

Degree Thesis

Bachelor degree of nursing

2018

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DEGREE THESIS	
Arcada	
Degree Programme:	Nursing
Identification number:	
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Title:	Chronic assessment and documentation checklist for wound ward (Nurse perspective)
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Chronic wounds are a well-known health problem affecting both young and elderly patients, which is believed to be associated with a lower quality of life. Studies have shown that wounds can have an impact on patient psychosocial health as well as wellbeing.

In Finland, the prevalence of chronic wounds is estimated to be 1.3-3.6%. The cost of chronic wound care is estimated to be 7-14 million euros p/a in Helsinki region alone.

In the background of this study updated information about the chronic wound is provided. Also, the various types of the chronic wounds are defined. The theoretical framework chosen for this study was Kinnunen et al (2012) wound documenting model. The model chosen was supporting the study though out the process and answering the research question.

The theoretical framework chosen for this study was standardized wound care model developed by Kinnunen et al (2012)

The model had consisted of 6 wound types model created, which are: Surgical wound, Traumatic wound and diabetic foot, burn, frost bite, pressure ulcer and leg ulcer.

The research questions chosen for this study was: What should the nurse document about chronic wound?

What are the barriers that hinder the nurse to practice evidence-based practice and documentation?

The articles chosen for this study was analyzed by using inductive data analysis method. The key findings in this study were in line with the existing literature review about this theme. There was some barrier that hindered the nurse from practicing evidence based care. Also the wound etiology has to be diagnosed. The wound care team needs to assess and document about the wound every time the bandages are changed. One should check the wound size, location, exudation amount, pain, wound bed assessment, tissue type, and the situation of the surrounding skin

Keywords:	Chronic wound, wound assessment, Documentation
Number of pages:	43
Language:	English
Date of acceptance:	

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Tiivistelmä:

Krooniset haavat ovat tunnettuja terveysongelmia, jotka vaikuttavat sekä nuoriin että ikääntyneisiin potilaisiin. Tutkimukset ovat osoittaneet, että haavoilla voi olla vaikutusta potilaan psykososiaaliseen terveyteen ja hyvinvointiin. Siksi krooniset haavat ja haavaumat liitetään huonontuneeseen elämänlaatuun.

Suomessa kroonisten haavojen esiintyvyyden arvioidaan olevan 1,3 - 3,6 %. Kroonisten haavojen hoitokustannusten taas arvioidaan olevan 7 - 14 miljoonaa euroa vuodessa pelkästään Helsingin seudulla.

Tämän tutkimuksen taustatiedoissa esitetään päivitetyt tiedot kroonisesta haavasta. Myös erilaiset krooniset haavat määritellään. Tähän tutkimukseen valittu teoreettinen viitekehys on Kinnusen et al (2012) haavan dokumentaatiomalli. Valittu malli tuki tutkimusta tämän opinnäytetyön eri vaiheissa ja osittain auttoi vastaamaan tutkimuskysymyksiin.

Tutkimukseen valittu teoreettinen kehys oli Kinnunen et al. (2012) kehittämä standardoitu haavan hoitomalli. Mallissa mainitaan kuusi eri haavatyypin mallia, jotka ovat: kirurginen haava, traumaattinen haava ja diabeettinen jalkahaava, palohaava, pakkasen purema, painehaava sekä alaraajahaava.

Tutkimukseen valitut tutkimuskysymykset olivat:

Mitä sairaanhoitajan tulee dokumentoida kroonisesta haavasta?

Mitkä ovat ne tekijät, jotka estävät sairaanhoitajaa harjoittamasta näyttöön perustuvaa toimintaa ja dokumentointia?

Tähän tutkimukseen valitut artikkelit analysoitiin induktiivisen aineiston analysointimenetelmän avulla.

Tämän tutkimuksen keskeiset tulokset olivat tämän aiheen nykyisen kirjallisuuskatsauksen tuloksien mukaisia. Tuloksien mukaan oli joitain esteitä, jotka estivät sairaanhoitajan harjoittamasta näyttöön perustuvaa hoitoa. Haavan etiologia on diagnosoitava. Haavanhoitajien on arvioitava ja dokumentoitava haava aina, kun siteet vaihdetaan. On tutkittava haavan koko, sijainti, eritys, kipu, haavapohjan arviointi, kudostyyppi ja ympäröivän ihon tilanne.

Avainsanat:	krooninen haava, haavan arviointi, dokumentaatio
Sivumäärä:	43
Kieli:	englanti
Hyväksymispäivämäärä:	3.12.2018

CONTENTS

TABLES

FIGURES

Acronyms

EBC = Evidence Based Care

EHR = Electronic Health Records

FINCC= Finish Care Classifications

FIcND= Finish classification nursing diagnosis

Fincni= Finish classification of nursing interventions

WHO = World Health Organizations

SHTAL= Suomalaisen Hoitotyön Tarve Luokitus

SHTOL = Suomalaisen Hoitotyön Toiminto Luokitus

THL = Terveyden ja hyvinvoinnin laitos (National Institute for Health and Welfare)

1 INTRODUCTION

Chronic wounds are a well-known health problem affecting both young and elderly patients, which is believed to be associated with a lower quality of life. Studies have shown that wounds can have an impact on patient psychosocial health as well as wellbeing (Welsh, 2017). In Finland, the prevalence of chronic wounds is estimated to be 1.3-3.6%. The cost of chronic wound care is estimated to be 7-14 million euros p/a in Helsinki region alone (Duodecim, 2016) whilst other studies showed the cost of wound care to be as high as 2.5-3 billion pounds p/a in the National Health Service (NHS) (Welsh, 2017).

Although, there is a disagreement about the definition of what a chronic wound is, there is yet to be a universal definition. A chronic wound is described by Welsh (2017) as a wound which does not heal, and healing time is prolonged than regular wounds.

This study has the purpose of researching, using literature review, about wound care documenting and assessment done by the nurse as a result composing a checklist for Espoo Hospital Ward 1.

The aim being to aid nurses thorough out the wound assessment stages. The product being to create a checklist tool to use while documenting about different kinds of chronic wounds.

Firstly, the background knowledge of chronic wounds such as the different types of ulcers is explained in this literature review. Followed by the theoretical framework which supports the study, as well as the aim and the research question are presented.

Secondly, the methods and methodology used to conduct this review and data analysis are further then described. Furthermore, the results that were found and discussion are presented before conclusion, strength, limitations and recommendations of this review is made.

2 BACKGROUND

In this chapter the main concepts of the research were reviewed, and chronic wound is defined. As well as the nurse's role in wound care assessment and the importance of the documentation.

2.1 Wound healing phases

The wound healing process usually starts immediately after the damage. Wound healing steps are divided into four stages. Phase one: Hemostasis, a body's reaction to stop the bleeding. All wounds that go deeply into the dermis will start the body's alarm reaction, signaling chemical and mechanical damages. Chemical signal meaning: the damaged cells will release neurotransmitters (such as cytokines).
The mechanical signal means that blood vessels in the area start to contract, this will last from 10-15 minutes. Also, the last stage in this process is that this signaling will eventually turn into a blood clot plug. (Juutilainen & Hietanen, 2012)

Phase two is the inflammation phase in the wound healing process. Inflammation is a reaction that is accommodated by physical, chemical or biological damage in the vascular tissue (Duodecim 2018). In the early phase of inflammation neutrophils and macrophages will predominate the wound site, the goal is removing bacteria and other foreign material from the wound by releasing enzymes and by phagocytosis. (Juutilainen & Hietanen, 2012) Inflammation is not same as infection, but if the wound is infected the signs are; redness, swelling, heat, and pain at the wound site. (Duodecim 2018)

In proliferation the tissue weaving area will be covered by a collagen web and new blood vessels, the surface will be full of white epithelium cells. This will usually start 2-4 days after the initial injury. (Juutilainen & Hietanen 2012)
Last stage in the wound healing process is the remodeling phase. This will take place when the closure from the proliferation stage is achieved. In this stage remodeling of

the resulting scars will take place, this can last up to over a month or years. (Juutilainen & Hietanen 2012)

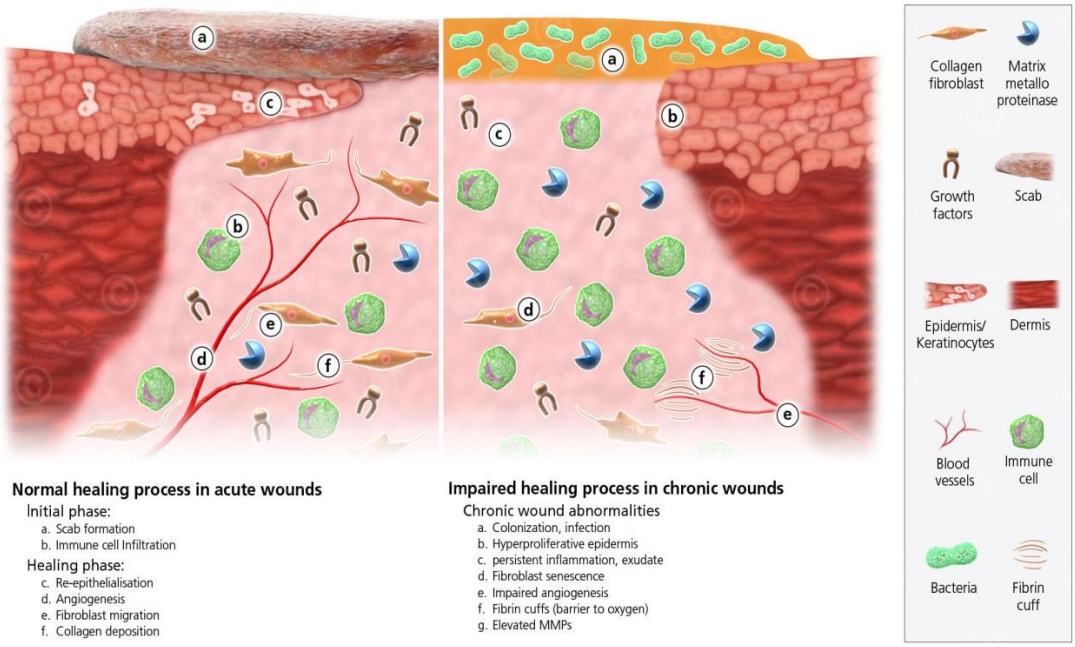


Figure 1. Normal wound healing vs chronic wound healing process.

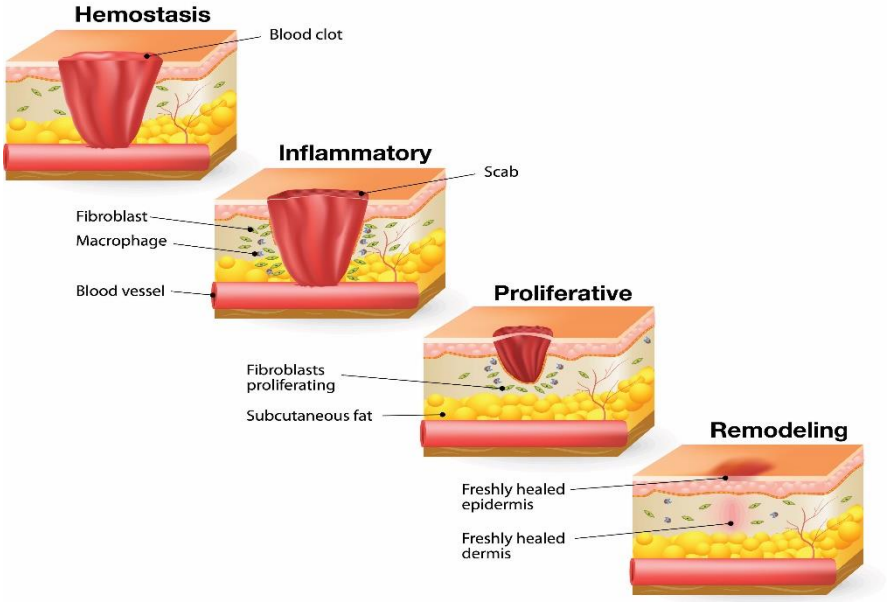


Figure 2 Stages of tissue healing.

2.2 Chronic wound

A wound that fails to heal from either external or internal factors is classified as a chronic wound (Current care guidelines 2014) venous ulcers timeline for it to turn into a chronic wound is 4 weeks. Arterial ulcers on the other hand can turn into a chronic wound in 4 weeks (Current care guidelines 2014).

In chronic ulcers the healing process is somehow disturbed. As a result, we would have a wound that will not heal or a wound that is expanding. Factors that cause chronic wounds not to heal completely in the wound healing process can be categorized as systemic, for example: patient's age, diagnosis, nutrition, and lifestyle. Local factors are also a cause for a wound not to heal. Local factors consist of the wound site, moisture in wound area, and blood circulation in the wound area. Also, psychosocial factors have an effect in the healing process. (Juutilainen& Hietanen 2012).
Prevalence of chronic wounds in Finland is 0.09-0, 8% of the population
Chronic wound prevalence duplicates due to age, also it is more common in women than me (Current care guidelines 2014).

In this research, the focus will be: *Venous leg ulcers, arterial leg ulcers, diabetic foot ulcers, pressure ulcers, vasculitis and pyoderma gangrenous.* According to the Finnish Current care guidelines the most common chronic wounds the venous and artery leg ulcers, pressure ulcers and diabetic foot ulcers (Current care guidelines 2014).

2.3 Types of chronic wounds

Venus ulcers

Venous hypertension ulcers usually appear due to continues venous insufficiency and venous hypertension. This usually is the aftermath of thrombosis and/ or the reflux of inadequate venous valves. Patients who suffer from inadequate venous valves usually have the symptoms of swollen legs and pain in the leg due to the swelling.

The medial malleolus is the most frequent site that venous ulcers occur. The venous ulcer wound site borders are irregular. The wound bed in this type of ulcer is flat and large. The surrounding skin in venous ulcers are usually pitting and swelling (Juutilainen & Hietanen 2012).

Arterial ulcers

Arterial leg ulcers occur due to a consequence of inadequate blood supply to the skin. Atherosclerotic disease is the most common cause for this type of ulcers. Arterial leg ulcers usually have pain when resting, the feet are cool, and weak pedal pulses. Arterial ulcers borders are usually sharp and round, the surrounding skin is usually shiny and atrophic. This type of ulcer usually will require a surgical procedure to fix the underlying vascular insufficiency and therefore restore the peripheral blood flow. Smokers and diabetics have a higher risk of developing arterial leg ulcers (Current care guidelines 2014).

Diabetic foot ulcers

According to WHO (2018), a diabetic foot ulcer is a foot infection that affects deep tissue, in addition to neurological changes and varying degrees of lower limp circulatory disorders.

It is common that the patient suffering from diabetes will have 15-25% lifetime risk of developing foot ulcers. This is due to the fact that diabetes causes lower peripheral neuropathy causing issues with the peripheral vascular system. Also, peripheral motors related to neuropathy weakens the muscles of the feet and leads to deformities that add too sensory weakness resulting in ulcers. The most common area for the ulcers to appear are in the callus area. Diabetics

have a 15% to 25% lifetime risk of developing a foot ulcer, usually as a consequence of diabetes-associated peripheral neuropathy or vascular disease (Current guidelines 2009).

Diabetic foot ulcers have weak prognosis due to the fact that they are often non-healing due to uncontrolled blood sugar, bad peripheral oxygenation. Many diabetic feet ulcers undergo amputation (Margolis et al. 2005).

Pressure Ulcer

Pressure ulcers occur due to bad vascular insuffiency added to prolonged pressure on the skin. Skin overlying bone (such as sacrum, hips, malleoli) is much weaker and developing pressure ulcers are more prominent. Patients who are immobile, malnourished and cannot move their bodies are at a higher risk of developing pressure ulcers. Pressure ulcer usually occur when the patient is laying on the same position for plenty of hours, and not able to turn sides in the bed. Pressure ulcer prevention and management is the key to prevent ulcers from beginning. The position should be changed by the nurse every two hours (Current care guidelines 2018).

NPUAP staging system for pressure ulcers[9]

Stage	Description
Suspected deep-tissue injury	Purple or maroon localized area of discolored, intact skin or blood-filled blister caused by damage to underlying soft tissue from pressure or shear; the discoloration may be preceded by tissue that is painful, firm, mushy, boggy, or warmer or cooler compared with adjacent tissue
I	Intact skin with nonblanchable redness of a localized area, usually over a bony prominence; dark pigmented skin may not have visible blanching, and the affected area may differ from the surrounding area; the affected tissue may be painful, firm, soft, or warmer or cooler compared with adjacent tissue
II	Partial-thickness loss of dermis appearing as a shallow, open ulcer with a red-pink wound bed, without slough; may also appear as an intact or open/ruptured serum-filled blister; this stage should not be used to describe skin tears, tape burns, perineal dermatitis, macerations, or excoriations
III	Full-thickness tissue loss; subcutaneous fat may be visible, but bone, tendon, or muscle is not exposed; slough may be present, but does not obscure the depth of tissue loss; may include undermining and tunneling
IV	Full-thickness tissue loss with exposed bone, tendon, or muscle; slough or eschar may be present on some parts of the wound bed; often includes undermining and tunneling
Unstageable	Full-thickness tissue loss with the base of the ulcer covered by slough (yellow, tan, gray, green, or brown) or eschar (tan, brown, or black) in the wound bed

NPUAP=National Pressure Ulcer Advisory Panel of Washington, DC

Figure 3 NPUAP Pressure ulcer stages.

Vasculitis

Vasculitis is the inflammatory condition of the blood vessels, especially the arteries, the walls of certain arteries will be damaged and. Vasculitis is a common name for different types of the illness look figure. Common symptoms for them are fever, tiredness, weight loss and red spotted skin rash. Vasculitis can either affect big veins or small veins. The size of the vein and the location of the wound affects the symptoms and the healing process. Vasculitis are life-threatening situation and quick diagnostic measurement should be considered (Duodecim 2018)

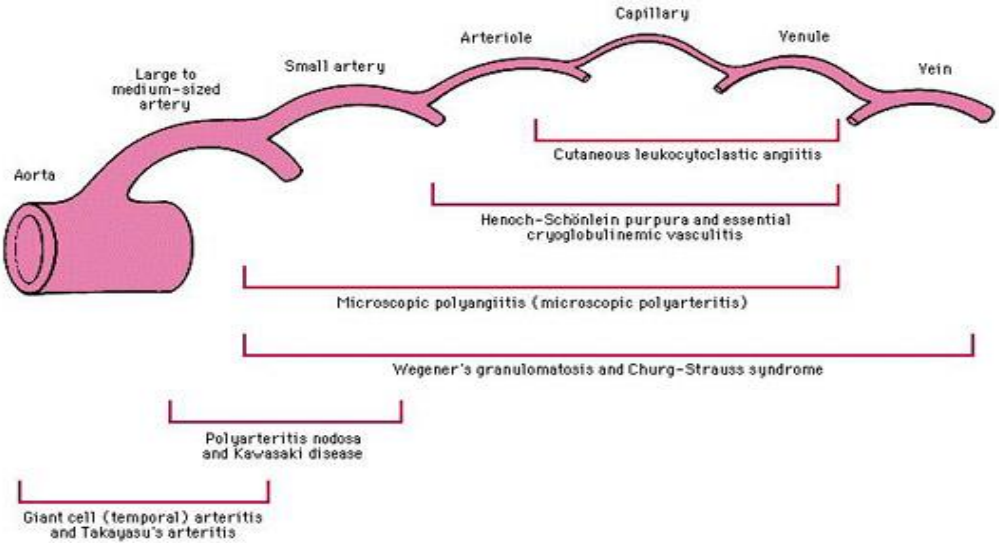


Figure 4 Vasculitis by the size of the arteries it's affected

Pyoderma gangrenosum

Pyoderma gangrenosum is a rare skin disease which etiology is unknown. Pyoderma gangrenosum causes are linked with immune system disorders such as inflammatory bowel disease or rheumatoid arthritis. The wounds are usually located in the lower limbs. They appear suddenly as a red they usually expand from the edges and develop in to boils. Skin craft surgery can be taken in to action, after the rapid phase in in remission. (Duodecim 2012)

2.4 Nurses role in assessment of chronic wound

The primary need for wound assessment is to understand the stages of the wound healing phase. As a nurse determining the underlying factors of what is impacting the wound healing process in the patient's examination (Juutilainen & Hietanen 2012). Also documenting in the patients record along with the patient's medical history is also vital information in determines the right wound care. In general, disorders and medical treatments may exacerbate the onset or healing of a chronic wound. (Juutilainen & Hietanen 2012).

A nurse should asses the wound with first visual examination and then hand examination, which is also called palpation. This is a tool for the nurse to visualize and feel the size of the wound bed and skin surrounding the wound. It is required by the nurse to have knowledge in different fields of wound care, such as wound care, care process, infection control, pain management, and nutritional aspects are very valid in nurse's competency in clinical section Adequate aseptic skills are required by the nurse dealing with the wound care. (Juutilainen & Hietanen 2012).

In Finland there are VPKM which is wound color classification the aim for the wound color classification is to provide a tool to detect the wound bed tissue category. Healthy granulating skin is pink in color; versus the unhealthy granulation is dark red. Necrotic tissue is black, it can be dry necrotic tissue or wet, moist necrotic tissue (Vpkm- Helper 2010).

Chronic wound is usually being covered by white /yellow fibrinous tissue; this is indicator for the presence of bacteria. The healing starts when the tissue is removed by mechanically by the nurse. These are important phase for the chronic wound. (Juutilainen & Hietanen 2012).
In chronic wounds the surrounding skin should be monitored. If there is usually maceration, this is usually an indicator for excessive exudation in the wound bed. The wound dressing type should be checked by the nurse.

Wound exudate types differ; it can be serous, serosanguinous or sanguineous. The exudation should be controlled, for example edematous leg should be lifted when the patient is seated (E. Grey et al 2006).

2.5 Nurse's role in wound care documentation

Chronic wounds and their care require multi professional teamwork. To support the multi professional care, and the team communication, care continuity wound care documenting needs to united and structured.

Whenever the whole multi professional team uses the same, consistent wound care documenting style, each member of the team will get a similar picture of the wound and wound status, the wound care assignment, the goals of the care, the implementation and evaluation of the nursing work, the results of the treatment. (Kinnunen et al 2012).

It's obvious that wound care is goal-orientated care. The main aim in wound care is the wound to heal. Therefore, the care continuity has to extend to the documenting as well, and that's why proper wound care documenting is crucial for the overall care of the patient. Current patient recording systems serve poorly wound care patients. (Juutilainen &Hietanen 2012).

In Finland there are laws and ethics that control health care and documenting. The main goal for this laws and ethics is to provide the patient good and safe care. It is also part of the nurse's legal right and responsibilities to document everything that is there to document. What has not been documented cannot be proven to be implemented (Juutilainen & Hietanen 2012).

Electronic recording (EHR) is a way in documenting the information regarding to the patient. There are several different patient information systems for recording, such as Effica, Pegasos, Mediatri, Apot, Acute, and Uranus. The recorded data forms a patient record. (Superliitto 2018)

In wound care the goal of documentation is to write down all the needed information about the wound in a way where the next health professional involved in the care knows at what stage of healing the wound is stated right now, and how the previous care worked. (Hietanen & Juutilainen 2012).

Systematic wound care is a process that defines patients care through the care process model. Systematic documenting consists of structural core heading such as: nursing activities, the result of nursing, care intensity and nursing summary.
Wound care activities go under finish nursing needs and function activities (SHTal and SHTol). (Kinnunen et al 2012).

FinCC, consists of the Nursing need classification (SHTal), Nursing function classification (SHTol) and the nursing result classification (SHTuL).
In Finish care classification the skin integrity nursing need classification has 17 main components. (Kinnunen et al 2012).

3 THEORETICAL FRAMEWORK

According to the study used here as a theoretical framework Kinnunen et al 2012 in Finland there has been little research in wound care documenting despite the importance of it.

In this literature review, the theoretical framework used is developed by Ulla-Maija Kinnunen et al (2012) the heading for the model was: *Wound care documenting model innovation in clinical nursing settings.*
The aim for this dissertation was to develop a wound care checklist. The main product in this dissertation was a wound care documenting model. This model was created for the need of the nurses in clinical settings. The wound care model that was created is based on FinCC, skin integrity components and FicND Finish classification of nursing diagnosis.

This theoretical model was embraced for the theoretical model for this study, in view of compatibility of the topic and also as a guidance tool, when designing the wound care documenting checklist.

The model created by Kinnunen et al 2012 is compatible with the model already existing from FinCC and FinCni, also the terminology used in the model is already familiar with the nurses.

The model that was used in Kinnunen et al (2012) study consisted of 6 wound types model created, which are: Surgical wound, Traumatic wound and diabetic foot, burn, frost bite, pressure ulcer and leg ulcer.

In the nurse action section there were 7 main categories, 25 subcategories of the FinCC of nursing diagnosis. And the second part of the skin integrity components of the FinCC there was 5 main categories and 25 sub categories from skin integrity components from Fincni.

In the table below the model is presented paraphrasing the original work by, all credit goes to Kinnunen et al (2012).

Table 1Wound care documentation model (Kinnuen et al 2012)

MAIN CATEGORY OF FICND	SUB CATEGORY/FICND
MAIN CATEGORY OF FICNI	**SUB CATEGORY/FICNI**
Monitoring & assessment of the wound	Monitoring the wound exudate (amount, color, odor) Assessing the open wound size (depth, width, length) Assessing the open wound (wound bed tissue) Monitoring wound infection Wound pain assessment Monitoring peri wound and wound edges
Wound management	Wound wash and debridement Changing the dressing Removal or part removal of sutures/tension sutures, wound staples Monitoring the drainage and drain exudate Monitoring and care of the surrounding skin of the drain or external fixator Drain removal Peri wound and wound edge care Monitoring and care of the skin transplant Monitoring and care of skin graft donor site Monitoring and care of flap
Pressure ulcer prevention and care of position	Position limits care Patient position care Devices for reduction or elimination of tissue focusing pressure
Supportive care of wound care	Compression care

Wound care guidance and education	Pressure reducing care Scar care. Other wound supportive care Wound care guidance

4 AIM AND RESEARCH QUESTION

The aim for this study was to research by using existing literature about the barriers the nurse faces when practicing evidence-based research and also understand what the nurse should write about chronic wounds. Through these research themes the second aim for this study was to develop an aiding tool for wound care documenting. A checklist model that could be used by nurses in assistance when documenting about the wound or the wound care. This product is designed for a special nursing target group who work at the wound ward in ward 1 at Espoo Hospital. This product was designed to assists nurses in documenting important information about the current state of the wound and wound care.

Research question:

1. *What are the barriers that hinder the nurse to practice evidence-based practice and documentation?*

2. *What should the nurse document about chronic wound?*

5 METHODOLOGY

In this chapter the researcher explains how the research was conducted, analyzed and reviewed. The author will explain why certain methods and tools were used in this paper. The major aim for the methodology section is to explain to the reader the process of the study. The methodology used in this study was qualitative literature approach when reviewing the articles. Every article selected was carefully picked and answered the two research questions that the author was researching for. The next step in the selection process was to choose an analysis method. The method chosen was the inductive analysis method

5.1 Data collection

The 10 chosen articles were collected from different scientifically approved databases such as: Science Direct and Google scholar. The articles are listed below in table 3. The data search was performed by using key words from the research question chosen for this study were, wound care assessment, wound care knowledge OR competence, Nurses attitude toward evidence-based practice, Evidence based practice in nursing, Wound care documentation OR nursing documentation, Challenges whit nursing documentation. The table below analyzes the data retrieval process of this study. The author attempted trying other data bases which was approved by Arcada University of Applied Sciences. The search trial was not successful, the two mentioned data bases provided more data to this study

Table 2 Table 3 Data retrieval method

Data bases	Search categories	Number of Hits	Relevant Articles	Selected Articles
Science direct	Wound care assessment. Wound care knowledge OR competence nurse. Nurse attitude towards evidence-based care	77,800	13	4
Google scholar	Wound care documentation OR nursing documentation	92,100	26	6

Table 4 articles chosen for this thesis

Author	Title	Journal name/year
S. Coleman et al	*Development of a generic wound care assessment minimum data set*	Journal of tissue viability, Vol.26, issue 4, November 2017 P.226-240
Ulla-Mari Kinnunen et al	Devoleping the standardized wound care documentation model- A delphi study	J Wound Ostomy Continence Nurs. 2012;39 (4):397-407. Published by Lippincott Williams & Wilkins 2012
Ulla-Mari Kinnunen, Kaija Saranto	Evaluating nursing documentation research designs and methods: systematic review	Journal of advanced nursing Volume65, issue3 p. 464–476. November 3,2008
Maria Grazia et al.	'If it is not recorded, it has not been done!'? consistency between nursing records and observed nursing care in an Italian hospital	Journal of clinical nursing 19, 1544–1552, May 2009
Hajjul Kamil et al	What is the problem with nursing documentation? Perspective of Indonesian nurses	International journal of Africa Nursing sciences, Volume 9, 2018. P.111-114
Lynn Welsh	Wound care-evidence, knowledge and	International wound journal/volume 14, is-

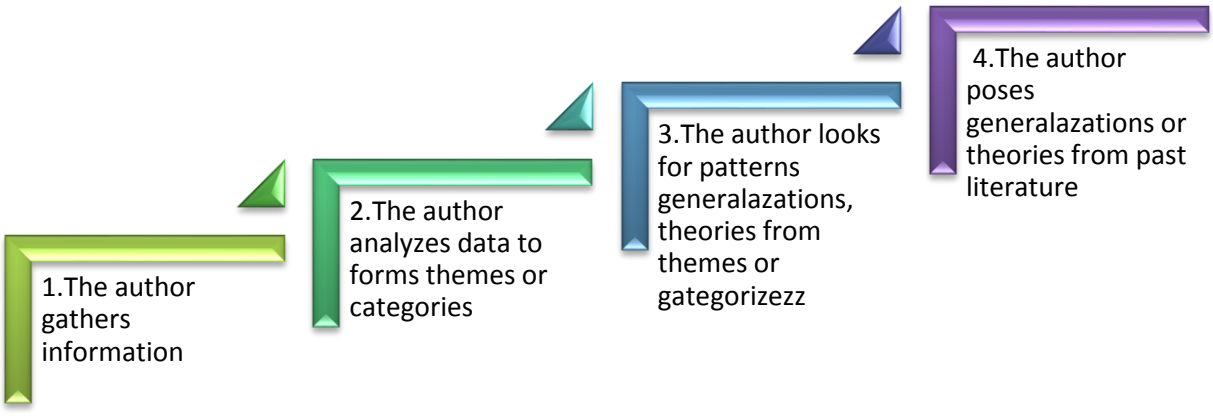
	education amongst nurses: a semi systematic literature review.	sue 1. October 2017
Surme et al	Wound care-evidence, knowledge and education amongst nurses: a semi systematic literature review.	Journal of peri an-esthesia nursing/ volume 33, issue 4. August 2018p. 471-478
Kielo et al	Graduating student nurses and student podiatrist wound care competence-an integrative liter-ature review.	Nurse education in practice/volume 29/March 2018, pages 1-7
Brown et al	Nursing practice knowledge, atti-tudes and per-ceived barriers to evidence based practice at an aca-demic medical Cen-tre.	UC-San Diego/ 2009
Aydin et al	Assessment of nurse's knowledge and practice in prevention and management of deep tissue injury and stage 1 pres-sure ulcer.	J. Wound conti-nence/volume 35, issue 5 2010, p 487-494

5.2 Data analysis

This study is a literature review that was done by using inductive content analysis. The main aim for inductive data approach is to make it able for the researcher to search findings from the frequently mentioned themes and form main categories out of it (Thomas 2006)
This method has aided the researcher to develop a theory and identifies themes by examining the selected literature for this study. As the name implies that this analyzing method relies with inductive reasoning, in which the themes emerged from raw data.

The 10 articles chosen by the author was carefully printed and examined through. The main reason choosing inductive qualitative as a data analysis method is due to the fact this method helps you to categorize data into main and subcategories. By doing this the author is shedding light in to the concepts frequently mentioned in the data collection. In the table (3) below the data analysis method used is more explained.

Table 5Inductive data analyzing process



5.3 Ethical considerations

Scientific paper has its requirements, the text should be written in an objective way. The author role in the scientific writing is to convince the reader that this scientific paper was conducted by the author and the findings of the study are reliable. The author is not allowed to falsification the truth or led the reader to a direction that is not the path of the truth. (Männikkö 2008)

Responsibility for compliance with good scientific practice is primarily the responsibilities of every researcher.
Good scientific papers key starting point is that the research is conducted in a way that the honesty, openness and respectful ways, the researcher has to respect other researcher work by citing everything. (*Research ethics - Academy of Finland* 2018)

This research has followed the research guidelines set by Arcada University of applied sciences. The work has been prepared by following the ethical rules and regulations
The supervisor of this thesis has been read through the material and checked for any unethical mistakes through a database called URKUND. URKUND is a system that allows the student and the teacher to detect any results for text similarities or in another words plagiarism (Urkund, 2018)

6 FINDINGS

In this chapter, 10 scientific articles were reviewed, and generalizations and themes were formed from the data content in order to answer the two-research question, which was:

What are the barriers that hinder the nurse to practice evidence-based practice and documentation? What should the nurse document about the chronic wound?

6.1 Barriers with wound care knowledge

Wound care competence was presented in reviewed articles for this study, (Welsh 2017), (Surme et al 2018), (Kielo et al 2018) (Aydin 2010) (Hajjul et al 2018)

According to Cooper et al studies nursing has always been seen not connected to evidence-based care, this is due to the historic patterns of nursing being an apprenticeship.

Study done by (Welsh, 2017) was shown that all five studies identified low links into performance of EBP, She also discovered that 70% of the nurses stated that there were no standardized wound care guidelines, 6 % wasn't sure whether there is standardized guidelines or not. Also professional independence about the wound care products to choose for the wound was dependent from the physician.

It was also discovered that wound care knowledge was improving the more clinical practice found that wound care competence in practice improved in accordance with length of clinician experience. Welsh (2017)

Qualified nurses and nurse students insufficient/ inadequate knowledge about wound

According to Aydin et al (2010), it was recognized that the nurse's knowledge in this area: Pressure ulcer grading, lack of acknowledgement of clinical guidelines, and poor dressing selection) In his study it was recognized that the nurses working in the ICU wards lack knowledge of recognizing the pressure ulcer (PU) evaluation and prevention.

Furthermore, in this study it was found that the nurses did not use the pressure ulcer prevention guidelines that were in place to prevent them. Knowledge about some superficial beliefs or practices about such as massage is being a valid practice that is always beneficial Aydin's (2010)

In a study done by Surme et al (2018), it was discovered that more than half of nurses were not able to provide enough patient education about wound healing when discharging the patient. The lack of the discharge education can lead to psychological stress in the patients and their families. In the same study it was also discovered that the competence level of the nurses with bachelor's degree was higher than the nurse's without the bachelor degree. This was linked with the responsibilities of the nurses. Also, in this study it was found that most of the nurses evaluated the drainage and the color of the drains, but did put much effort in inspecting the odor of the drainage (33, 8 %)

In research conducted by Kielo et al (2018), it was announced that wound care knowledge in graduating student nurses are at an inadequate.

Some of the research conducted by Kielo et al (2018) was searched about pressure ulcer knowledge in questionnaires the result was showing that there is lack of knowledge about the pressure ulcer knowledge test (PUKT), where the participants are expected to give correct answers to 90% or more.

In Kielo's (2018) study it was expressed that the concern nursing students felt that they did not receive enough education about tissue viability during their education period. Concerning wound care education during nursing education also it revealed that most of students received less than 10 hours of education about skin integrity.

Hajjul et al (2018) Supported these discover, some of the nurses the research was conducted from had different levels of nursing education, which affected their knowledge about the documentation

6.2 Barriers with nursing documentation

It's already know by the previous studies that nursing documentation in general and wound care documentation in particular is not either accurate or comprehensive, insufficient wound care documentation weakness the continuity of the nursing care proses and in the worst case scenario can cause patient safety issues (Kinnunen et al 2012)

In a study conducted Grazia et al (2009) in surgical postoperative ward the whole bedside task carried for 21 patients were 1568 and only 40 % of that figure was in the nursing documentations. This meaning that the nurses do perform much more than they document.
The nurses wrote about the intervention about (drainage of the wound site, wound care and the fluid balance) more than basic need assessment such as sleep/hygiene and mobility and pain assessment was under-recorded) This is furthermore revealing that the bedside care is prioritized or valued more than documentation. . The consistency about documenting and performing decreased on those days when there was more activity to achieve. Grazia et al (2009).

Welsh (2018) stated that the nurses had deficient level of motivation to execute the documentation due to the strain of other task throughout their working hours.

6.3 Attitudes towards evidence-based practice

In a study conducted by Brown et al (2009) it was confirmed in her collected data that many researchers have acknowledged both barriers and facilitators when it came to adaptation of evidence-based care. Some of the consistently acknowledged barriers in this research was: lack of time, poor authority to change the practice, task based practice, misconception of evidence-based practice, lack of management support, lack of mentorship, lack of access to evidence based research, lack of knowledge about interpretation of statistics and critical appraisal, unclear workplace expectations, uncertainty about the basic knowledge experience with evidence based research. Over all in this research

the two top perceived barrier themes were mainly lack of time and lack of nursing autonomy (Brown et al 2009).

Hajjul et al (2018) stated there is absence of motivation and confidence when it come to the nursing documentation, the respondents (head nurse) in that research stated that the nurses copy what others have write, another head nurse stated that the documentation is perceived as just a regular duty and that the nurses lack coaching in the documentation process.

6.4 Nurses role in wound care documentation

Globally and especially in Finland wound care documenting and assessment has not been well researched It is also suggested that further research is highly recommended.

It was shown that the structured documenting of wound care positively develop statistically better recordings making which encouraged documenting more accurately and frequently. It was also suggested that additional training improves documenting; this has direct effect on also how pain management is documented. Some of the barriers seen in the study conducted by Kinnunen showed the lack of time, some gaps or flaws seen in the documented text. The wound care terminology was also seen as a too technical and difficult for nurses to understand Kinnunen et al (2012)

Also according to research conducted by Kinnunen et al (2012) it was shown in the end model of the wound care documentation model that, categorizing the wound or finding the etiology of the wound is important. Also the specialist agreed that in the category of monitoring and assessment of the wound, there were listed subcategories that the nurse should check about the wound. Monitoring wound exudate (amount, color odor), Assessment of the open wound size (Depth, width and length), Assessment of the wound bed tissue, Monitoring wound infection, and wound pain assessment was valued as important and clear subcategories by the subject group of the Kinnunen et al (2012) research subject group, which consisted of finish wound care specialist nurses.

The wound etiology has to be diagnosed. Centers for Medicare & Medicaid Services (CMS) recommend the wound care team to assess and document about the wound every time the bandages are changed. One should check the wound size, location, exudation amount, pain, wound bed assessment, tissue type, and the situation of the surrounding skin (Brown et al 2009).

The terminology used by the nurses should be accurate and common with the caregiving society. If there are gaps in the terminology it could result in lowering the quality of care given to patient. (Brown et al 2009).

Coleman et al (2018) (table 4 below) had also acknowledged that with the lack of minimum data set for wound care it only leads to the lack of standardization of wound care performance, this directly affecting the quality of assessing wounds and its healing and treatment process. Especially, for chronic wounds this has a major effect as well. The aim for this research was to establish national minimum data set for generic wound assessment.

7 DISCUSSION

In this chapter the author will try to discuss, reflect and pull the findings of this study to relate it to existing studies. The aim for this research was to shed light on the barriers that hinder the nurse from practicing evidence-based wound care and to find out what does the nurse need to write about the chronic wound.

7.1 Barriers that hinder nurse to practice evidence-based care

The main results from this article (Brown et al 2009) suggested that there are some barriers that hinder the nurse from practicing evidence-based wound care and care in general. The repeated barrier themes were: Organizational barriers, shortage of time and shortage of nursing autonomy. It was also acknowledged that the respondents had issues in which there was no time to practice evidence-based care for the following reasons; Short staffing, patient acuity was too high, responsibilities at home, which did not allow the nurses to do research at home.

Brown et al (2009) respondents stated that there is confusion about what to read and lack of capability of evaluating a research. Some of the constantly repeated barrier themes time, knowledge, support and culture.

Welsh (2017) found through her research that there is a poor connection between evidence and wound care in the nursing practice fields. Also, there was recognition of inadequate wound care knowledge.
It was also stated that higher level of knowledge and skills was chorally related whit evidence-based practice. Also, highest level of knowledge regarding educational status was connected to be significant with the nurses with bachelor's degree. (Surme et al 2018)

7.2 Documentation

The nurses in the study were well aware of the significance of the nursing documentation. On the other hand, the documentation is not perceived as an important nursing task. Bed side care is received more important, the main reasons why nursing documentation is not functioning properly was due to couple issues, one of them was that organizational support was needed in other word, nurses need more supervision with documentation, more education about the matter and more confidence and motivation (Kamil et al 2018).

The studies have shown that the wound care documenting happens when the nurse is using evidence-based practice documenting model, besides this it is recommended to use as aiding tool wound scales and checklists. (Magnan & Maklebust 2009).

The result of this study showed that the regularity consistency between nursing action and their documentations was only 40 % (Garzia et al 2009). This consistency decreased during those days when the nurse carried out more nursing activity. In the same study it was established that the nurses in actuality performed more than they documented or recorded. It was found that the nurses perceive bedside care or the patient as their main priority when it comes to nurse activity.

In the results conducted by Hajjul et al (2018) it was seen that the nurses do still perceive the documentation as a central aspect and as a positive affiliation between the nurses, however later on also affecting the quality of the patient care. It was also expressed through questionnaires that the lack of supervision from the head nurse was the reason for poor documenting. In the same study it was also acknowledged that though education and elevation of the nurse's confidence by receiving support could influence the way documentation is managed. (Hajjul et al 2018).

This study also highlighted that due to elevated and imbalanced burden of patient care the nurses do not think documenting is as important.

7.3 Checklist

Checklist usage is widely common in health care. The aim of the checklist is to minimize nursing documentation errors and developing a systematic way for the user to perform and improve patient care. (Hales et al 2007)

Checklists are good tool in standardizing the care. The design and the development of the best checklist requires successive fulfillment in to habit. The end users or the target group of the checklist must have full understanding about the usage of the checklist (Hales et al 2007).

The below (Table 6) checklist was conducted whit assistance of the wound care team in the wound ward Espoon sairaala ward 1. The team consist of two specialized wound care nurses, a nurse in charge of the documentation and the head nurse of the ward. This study focused on the chronic wounds, yet in the checklist surgical wound was taken into selection due to the amount of surgical wounds such as skin grafts is treated in the ward.

The checklist consists of 12 main categories and 28 sub categories. The aim for this checklist was to keep it simple and easy to look at. The terminology in the checklist is aimed to keep simple and short. The checklist was conducted in both Finish language and English. The finish version of the checklist is listed in the appendix.

Table 6Checklist for chronic wound assessment and documentation

Wound type/ etiology	Surgical wound (Skin transfusion donor site) Pressure ulcers Circulatory wounds • Venous leg ulcers • Arterial leg ulcers Diabetic foot ulcer Vasculitis Pyoderma gangrenosum
Wound location	
Wound edges/environment	Redness, swelling, maceration, warmth
Wound bed	Pink, red, yellow, black Granulation, hyper granulation Visible tendon, fascia, or bone
Wound secretion/ odor	The amount of secretion, structure and color.
Wound pain	VAS 1-10, Pain reliever before or after the wound care?
Patient position care	
Pressure ulcer risk assessment	
Treatment methods	According to the treatment instructions treated? Is there anything out of the ordinary in addition to the treatment guidelines?
Picture	Once a week
Wound care instructions	Patient education, follow-up care

8 CONCLUSION

This study had the purpose of highlighting the barriers that hinder the nurse from practicing evidence-based practice. It was acknowledged through the articles that the author has chosen that there is a lack of research done about the wound care assessment, and documentation process.

It has been acknowledged that knowledge and nursing competence levels were questioned. Surme et al (2018) suggests that further education to be carried out, in order to advance the attitude, knowledge and skills of nurses about the wound healing and its care. Surme et al (2018) Suggests that awareness about the nurse's authority and responsibilities defined in the law system should be gone through.

Brown et al 2009 also suggested that the nurses need time away from bed side care, more authority of their actions and education in how to research, evaluate and process evidence-based care.

The findings in Kinnunen et al (2012) study suggest that standardization of wound care documenting and the terminology used while documenting.

8.1 Strength, limitation and recommendation

Continuing education about the pressure ulcer management and diagnosing is highly recommended by Aydin et al (2010). Education is linked to be beneficial when it comes to nursing tasks of the management and prevention of the pressure ulcer. Also, the article recommends that printing posters about the diagnosing stage 1 pressure ulcer and deep tissue injuries in the hospital facilities where it is easily for the nurse to glance at it is seen as valuable tool (Aydin et al 2010).

The limitation the author faced was that there was little research conducted about specifically about neither chronic wound assessment nor the documentation, due to that limitations the author had to broaden the aspect to general documenting among the nurses and general wound care documenting.

Also it was the authors first scientific research therefore some limitations was faced through that matter.
The checklist provided as a tool in this study could be a follow up research for the future, to see the results of the checklist, how did the nurses take it? Was it aiding the documenting process, or not? These are all possible future research questions for future researcher.

9 APPENDIX

Haavatyyppi/ etiologia	Kirurginen haava (Ihonsiirre) Painehaava Verenkiertoperäinen haava • Laskimoperäinen haavauma • Valtimoperäinen haavauma Diabeetikon haava Vaskuliitti Pyoderma gangrenous
Haavan sijainti	
Haavan reunat/ ympäristö	Punoitus, maseroituminen, turvotus, kuumotus
Haavan pohja	vaaleanpunainen, punainen, keltainen ja musta. Granulatio, hypergranulatio Jänne, luu, faskiaa näkyvissä?
Haavan eritys ja haju	Erityksen määrä ja koostumus, väri, haju
Haavan kipu	Onko kipua? VAS 1-10, Kipulääke ennen vai jälkeen hoidon?
Asentohoidot	
Painehaava riskin arvionti	
Hoitomenetelmät	Hoito-ohjeen mukaan hoidettu? Onko jotain poikkeavaa hoito-ohjeen lisäksi?
Valokuva	1krt/vko
Haavanhoito ohjeet	Potilaalle, jatkohoito paikkaan

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