Knowledge development and research utilization in evidence-based wound care
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Summary in English
SUMMARY

Caregivers carry the responsibility of making high-quality decisions, because these decisions directly influence their patient’s health. However, in daily practice it is unclear exactly what constitutes good quality, and this is especially true in the realm of wound care. Here, quality of care is confounded by a large variation in wound types, physicians’ and nurses’ preferences, and the competencies of the caregivers involved. This situation is likely to result in suboptimal care for the many patients suffering from wounds and is a challenge for evidence-based decision-making. This thesis is a compilation of interdisciplinary efforts to contribute to the body of knowledge on wound care, and aims to promote evidence-based decision-making in order to reduce unnecessary variation in the care of wounds.

In Chapter 2 the variation in current dressing policies for donor site wounds in the Netherlands was studied. Only 32% of the responding centers had a wound dressing protocol. The five most commonly used dressings were: films (56%), alginates (46%), hydrofibers (32%), silicones (26%), and paraffin gauzes (19%). Alginates were mostly used for primary dressings (46%). Additionally, we formulated evidence-based recommendations for the local treatment of donor site wounds based on four available systematic reviews. Based on these results, dressings that create a moist wound environment seemed preferable to non-moist dressings. The lack of evidence-based guidelines on the treatment of donor site wounds calls for an evidence-based guideline on acute wound care, including donor site wounds. This guideline may decrease the variation in wound care and increase the quality of care for such wounds in the future.

The absence of a useful and reliable classification tool may also be one of the reasons why current dressing policies are not standardized. Therefore, in Chapter 3 we investigated whether the well-accepted Red-Yellow-Black (RYB) scheme was useful for the uniform classification of donor site wounds. Although the RYB-scheme has been validated for classifying chronic and acute wounds, this is not yet the case for donor site wounds. We invited internationally recognized wound scientists, surgical doctors, specialized wound nurses and surgical nurses to judge digital photographs of donor site wounds in various stages of wound healing. Inter-observer agreements among specialized wound care nurses were only moderate. However, agreement tended to be better than that measured amongst scientists, doctors and nurses. Apparently, clinicians and scientists have difficulties classifying donor site wounds by means of the RYB-scheme. Therefore, this scheme does not appear to be useful for the uniform classification of donor site wounds.

Another reason for variation in wound care practice could be a lack of convincing evidence for the effectiveness of different dressing materials. Chapter 4 addressed the available evidence on the effectiveness of six commercially available dressings to treat patients with donor site wounds after split-skin grafting for any indication. These
dressings included alginates, gauzes, films, hydrocolloids, hydrofibers, and silicones. Evidence from 18 presently available randomized clinical trials (RCTs) showed that gauze dressings have been best studied, but should be avoided as they lead to longer healing times and higher pain scores. Hydrocolloids and films have been relatively well studied and tended to appear effective in terms of wound healing and pain relief. However, a large well–designed trial is warranted to corroborate this recommendation. The design and conduct of RCTs in wound care are considered challenging given the variety of wound types, dressings and patients, therefore, we set out to formulate the minimum requirements for proper RCTs in wound care and designed a framework to deal with methodological problems (Chapter 5).

Due to the large practice variation in treatment policies (Chapter 2) and the paucity of evidence as found in the systematic review (Chapter 4), we designed and conducted a new RCT using the framework developed in Chapter 5. The trial protocol and the results of our 14-center 6-armed RCT, entitled the “Rembrandt trial”, are described in Chapter 6 and Chapter 7. The acronym stands for “Recognizing Effective Materials by Randomizing and Assessing New Donor Site Treatments”. We compared the five most commonly used dressings in the Netherlands (alginates, films, gauzes, hydrofibers, and silicones) combined with the most promising dressing from the literature, namely hydrocolloids. In this trial we recruited 289 patients. Time to complete re-epithelialization using hydrocolloid dressings was one week shorter than the time required by the remaining five dressing types. Overall pain scores were low and slightly lower than those reported with film dressings. Patients treated with gauze had a two-fold higher infection rate of the donor site wound than patients treated with other dressings. Patients receiving film dressings were less satisfied about their overall scar quality. We are therefore able to recommend the use of hydrocolloid based on the shorter wound healing time and low infection risk, whereas gauzes should be avoided due to an increased risk of infection.

In the “Rembrandt trial” we found that although patients treated with films were less satisfied about their scar quality, caregivers did not show any differences in satisfaction among the different dressing groups. Therefore, in Chapter 8 we measured to what extent caregivers and patients agree on the cosmetic outcomes of the scar caused by the donor site wound. For this purpose we used the Patient Observer Scar Assessment Scale (POSAS) and investigated which POSAS-items are most associated with the overall cosmetic satisfaction of patients as well as caregivers. Health care professionals and patients classified the donor site scar in vivo using the POSAS, which comprises seven items. Inter-observer agreement for the POSAS-items was ‘moderate’ at best regarding the item ‘overall opinion’. Agreement regarding other POSAS-items was ‘poor’. Itching and relief best predicted patient’s overall satisfaction. For caregivers, however, pigmentation and pliability were most predictive. Apparently, patients and caregivers appreciated different aspects of scar characteristics as indicated by their
POSAS responses. Therefore, patient preferences should be considered in decision-making on wound treatment and scar prevention.

In this thesis we generated new knowledge, which should be employed by all stakeholders in wound care. Therefore, in Chapter 9 we carried out a national survey to investigate the awareness and use of available evidence on antiseptics and wound dressings amongst 262 stakeholders. Doctors preferred conventional antiseptics (e.g. iodine), while specialized nurses and manufactures favored popular products (e.g. silver). Most stakeholders considered silver-containing products to be evidence-based antiseptics, which contradicts scientific results. In particular, surgical nurses and manufacturers were unaware of, or had never used, the Cochrane Library. These results show that available high-quality evidence in wound care is not equally internalized by the various stakeholders, despite this being a requirement of evidence-based decision-making. Although the awareness and use of evidence was higher among specialized nurses than surgical nurses and manufactures, the competencies and educational levels of these nurses differ widely. In Chapter 10, we undertook a three-round e-Delphi study among healthcare professionals in six European countries, to reach a consensus on the desired core competencies for specialized wound care nurses. Results indicated that competencies related to professional knowledge and expertise, ethical integrity, and patient commitment were considered the most important. These competencies may be helpful in the future, when the boundaries of the responsibilities of nurses will change and task substitution with doctors is likely to occur.

Overall, based on the findings in this thesis we advocate a more systematic production and use of scientific research in the daily practice of healthcare professionals, which will likely improve the quality of patient care. There are many opportunities and challenges for evidence-based wound care. Although quite a feat, this is well worth the challenge!