

Wounds digest

In this section, a brief synopsis is presented of a range of recently published articles that may be of interest to healthcare professionals working in the wound care setting. The aim of this round-up is to provide an overview, rather than a detailed summary and critique, of the research papers selected. Full references are provided should you wish to look at any of the papers in more detail.

1 Rapid detection of biofilm by wound blotting following sharp debridement of chronic pressure ulcers predicts wound healing: a preliminary study

Readability	✓	✓	✓	✓	
Relevance to daily practice	✓	✓	✓	✓	
Novelty factor	✓	✓	✓	✓	

- Wound debridement is crucial to eliminate bacterial biofilms, in order to prepare the wound bed optimally. That said, it is also hard for healthcare practitioners to ascertain whether or not biofilm has been removed completely from a wound. Therefore, the authors determined that wound blotting technology may be beneficial to detect biofilm.
- The authors set out to examine biofilm elimination's effect on wound area decrease in pressure ulcers (PUs) using a newly developed biofilm detection method (wound blotting). They undertook a retrospective observational study, comprising patients with PUs and who had undergone sharp debridement with pre- and post-debridement wound blotting. Using ruthenium red or alcian blue staining, biofilm was then detected on the nitrocellulose membrane. Only those individuals who had tested positive for biofilm pre-debridement were included in the study.
- Sixteen wound-blotting samples from nine PUs were collated and it was found that wound area decrease in percentage terms was significantly higher in the biofilm-eliminated group (median: 14.4%, interquartile range: 4.6%-20.1%) when compared to the biofilm-remaining group (median: -14.5%, interquartile range: -25.3%-9.6%; $P=0.040$).
- In conclusion, the authors posited that biofilm-based wound care guided by wound blotting could prove to be a useful tool in the clinician's toolkit when considering reducing wound area options.

Nakagami G, Schultz G, Kitamura A et al (2020) Rapid detection of biofilm by wound blotting following sharp debridement of chronic pressure ulcers predicts wound healing: a preliminary study. *Int Wound J* 17(1): 191–6

2 An International Consensus on Device-Related Pressure Ulcers: SECURE Prevention

Readability	✓	✓	✓	✓	
Relevance to daily practice	✓	✓	✓	✓	
Novelty factor	✓	✓	✓	✓	

- A meeting of international experts took place in London in February 2019 with the aim of creating the first international consensus document on device-related pressure ulcers (DRPUs).
- The intention of the document is to provide a "comprehensive synthesis of current understanding of the aetiology of DRPUs", as well as outline the technological and clinical procedures

that can be initiated when treating and managing DRPUs. The team of experts set out to mitigate DRPUs through stressing the importance of multidisciplinary working in the healthcare setting.

- The consensus document was aimed at both a generalist and specialist audience and it offers an international understanding of best practice, combining information relating to how to safely apply medical devices and improve biomechanical and thermodynamic tissue conditions at the skin-device interface for the first time in the literature. The document enables clinicians across the globe to apply the concepts therein to their own clinical setting.

Gefen A, Alves P, Ciprandi G et al (2020) An International Consensus on Device-Related Pressure Ulcers: SECURE Prevention. *Br J Nurs* 29(5): S36–S38

3 A comparison of faculty led, mentorship program and peer mentoring on nursing students wound dressing clinical skills

Readability	✓	✓	✓		
Relevance to daily practice	✓	✓	✓	✓	
Novelty factor	✓	✓	✓	✓	

- The authors set out to conduct a study examining the varying models used to deliver nursing education with the objective to introduce a programme at a university-affiliated hospital in the west of Iran.
- With the authors highlighting that, to date, no singular approach has emerged as the front runner, the study involved enrolling 102 first- and second-year nursing students who were then assigned to three different groups. These were: a peer-led learning group ($n=34$), a mentorship-led group ($n=34$) and a faculty-led control group ($n=34$).
- Using a surgical dressing skills checklist created in-house, data were collected before and after the educational intervention from each of the three groups. Post-intervention, the mean scores for wound care skills came in at 28.24, 29.12 and 31.76 for the peer-led, faculty-led and mentor-led groups, respectively.
- No difference was found between the peer-led and faculty-led groups or the mentor-led and faculty-led groups, however, a statistical difference of $P=0.006$ was found in terms of performance in surgical dressings and wound care techniques in the mentor-led group compared to the peer-led method.
- In conclusion, the authors determined that there was a place in the curriculum for both peer and mentor learning methods when developing and enhancing student nurse clinical skill and

competence in surgical wound care.

Fard ZR, Azadi A, Khorshidi A et al (2020) A comparison of faculty led, mentorship program and peer mentoring on nursing students wound dressing clinical skills. *Nurs Educ Today* 89:104378

4 Patient-reported experience measures are essential to improving quality of care for chronic wounds: an international qualitative study

Readability	✓	✓	✓	✓	
Relevance to daily practice	✓	✓	✓		
Novelty factor	✓	✓	✓		

- The limited scope of traditional quality measures relating to chronic wounds were held up by the authors as a key reason that underlines how important patient-reported experience measures (PREMs) are to improve healthcare quality. PREMs are used to provide information from the patient perspective, which imbues them with the ability to enhance care efficiency and improve the patient-centredness of care.
- Gaining a deeper understanding of the patient experience, as well as healthcare processes that inform the quality of care among patients with chronic wounds were the aims of the study. A total of 60 patients, each with a chronic wound for at least 3 months, from Canada, Denmark, The Netherlands and the United States were involved in the first phase of study, in order to develop a patient-reported outcome measure for chronic wounds (WOUND-Q). The interviews were recorded and transcribed verbatim. Recurrent themes were then identified.
- Five key areas were identified by the authors: care coordination, establishing/obtaining care, information delivery, patient-provider interaction, and treatment delivery, while a further 21 sub-domains were also highlighted as potential opportunities to measure and improve the quality of care for those with chronic wounds.
- The authors concluded that chronic wound PREMs offer the chance to better engage with patients, as well as assess clinical setting and provider quality. In the coming years, research should examine the development of PREMs to be rolled out alongside traditional objective and patient-reported outcome measures for chronic wounds.

Squitieri L, Tsangaris E, Klassen AF et al (2020) Patient-reported experience measures are essential to improving quality of care for chronic wounds: an international qualitative study. *Int Wound J* doi: 10.1111/iwj.13374. Online ahead of print.

5 Evaluating the impact of an innovative educational program for skin care champions using the Pieper-Zulkowski Pressure Ulcer Knowledge Test

Readability	✓	✓	✓	✓	
Relevance to daily practice	✓	✓	✓	✓	
Novelty factor	✓	✓	✓	✓	✓

- This single-group study set out to assess the knowledge of pressure injuries among members of the Skin Care Council when using the Pieper-Zulkowski Pressure Ulcer Knowledge Test (PZ-PUKT).
- Carried out between January and August 2017 at an urban,

academic, tertiary medical centre, participants undertook the pretest, had an intervention (which was a 1-day interactive education programme known as the 'Skin Care Council Boot Camp' and based on the pretest results) and then measured on the posttest after 3 months. Differences between pretest and posttest scores on the PZ-PUKT overall and each test section were examined by paired-samples t tests.

- A total of 77 participants completed the pretest, of which 58 (75.3%) completed the intervention and the posttest evaluation. A mean pretest of 78.9 and a mean posttest of 85.3 were recorded, while significant mean differences were found among pretest and posttest PZ-PUKT scores: 6.4 (t = 9.419, P<0.001) overall; 4.6 (t = 5.356, P<0.001) in the prevention/risk category; 4.1 (t = 3.668, P<0.001) in the staging category; and 10.5 (t = 7.938, P<0.001) in the wound description category.

Delmore B, Smith DJ, Savage E, Ayello EA (2020) Evaluating the impact of an innovative educational program for skin care champions using the Pieper-Zulkowski Pressure Ulcer Knowledge Test. *Adv Skin Wound Care* 33(5): 252-9

6 Treatment of modifiable risk factors for foot ulceration in persons with diabetes: a systematic review

Readability	✓	✓	✓	✓	
Relevance to daily practice	✓	✓	✓	✓	
Novelty factor	✓	✓			

- Acknowledging the importance of diabetic ulcer prevention, the authors determined to examine the effectiveness of interventions in ulcer prevention in terms of improving modifiable risk factors, which is currently unknown.
- A literature review of the PubMed, Excerpta Medica, and the Cochrane databases was conducted focusing on original research studies that examined six interventions used to treat modifiable risk factors for diabetic foot ulceration. These were: education for patients; education for professionals; pre-ulcer treatment; self-management; orthotic interventions; and foot- and mobility-related exercises.
- The results from 72 papers were included in the study (26 controlled study design; 46 non-controlled). Effective interventions included, but were not limited to, structured education, which could improve foot self-care behaviour, as well as yearly foot examinations and the foot disease knowledge of clinicians, while peak plantar pressure was reduced by Callus removal.
- Structured education for patients and clinicians, foot- and mobility-related exercises, callus removal and custom-made therapeutic footwear were found to be beneficial for improving modifiable risk factors for foot ulceration. However, the quality of evidence for interventions targeting modifiable risk factors for ulceration in those with diabetes was low.
- A tailored education programme was created by the authors, addressing knowledge gaps, after pressure injury knowledge. The programme's success was measured by the posttest results, offering opportunities for future progress.

van Netten JJ, Sacco ICN, Lavery LA et L (2020) Treatment of modifiable risk factors for foot ulceration in persons with diabetes: a systematic review. *Diabetes Metab Res Rev* e3271 [Online ahead of print]