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 Association of overweight and obesity with the prevalence and incidence of pressure ulcers: A systematic review and meta-analysis

Readability	✔	✔	✔	✔	
Relevance to daily practice	✔	✔	✔	✔	
Novelty factor	✔	✔	✔	✔	

- The authors set out to investigate the role of obesity and body weight status in the incidence and prevalence of pressure ulcers, using a systematic review and meta-analysis. This led the authors to undertake a systematic search of observational studies on PubMed and Scopus to assess papers published between January 1990 and December 2019.
- A total of 17 papers with a total sample size of 2,228,724 patients in studies examining prevalence and 218,178 in studies examining incidence were included in the study. No significant effect of obesity on the odds of pressure ulcers' prevalence was found (OR 0.91, 95% CI 0.65 to 1.27, *P*=0.579, I2 = 84.8%) nor incidence (OR 0.97, 95% CI 0.56 to 1.66, *P*=0.905, I2 = 89.8%) when compared with the non-obese individuals taking part in the observed studies.
- In those individuals that were overweight they were found to have significantly lower odds of prevalence of pressure ulcers compared to the non-overweight individuals (OR 0.54, 95% CI 0.33 to 0.88, *P*=0.014, I2 = 90.2%). In addition, significantly lower odds of prevalence (OR 0.6, 95% CI 0.37 to 0.96, *P*=0.034, I2 = 82%) and incidence (OR 0.72, 95% CI 0.53 to 0.98, *P*=0.039, I2 = 67.1%) of pressure ulcers were found in the overweight than normal weight individuals using pooled data analyses.
- The findings showed no significant effect of obesity or morbid obesity on the odds of getting a pressure ulcer. Being overweight was associated with lower odds of experiencing a pressure ulcer, while being underweight significantly increased the odds of getting a pressure ulcer.

Alipoor E, Mehrdadi P, Yaseri M et al (2021) Association of overweight and obesity with the prevalence and incidence of pressure ulcers: A systematic review and meta-analysis. *Clin Nutr* 40(9): 5089–98

2 The "self-treatment of wounds for venous leg ulcers checklist" (STOW-V Checklist V1.0): Part 2-The reliability of the Checklist

Readability	✔	✔	✔	✔	
Relevance to daily practice	✔	✔	✔	✔	
Novelty factor	✔	✔	✔		

- In a nutshell, the "Self-Treatment of Wounds for Venous Leg Ulcers Checklist" (STOW-V Checklist V1.0) is a standardised, evidence-based tool, which aims to enable nurses to evaluate wound treatment regimens when carried out by patients with venous leg ulcers.
- The reliability of the tool was assessed using a prospective reliability study. Patients self-treating their leg ulcers were recorded via video (*n*=5) and nurses (*n*=15) then viewed each video recording three times, completing the checklist at the same point.
- This study examined internal consistency, inter-rater reliability and intra-rater reliability. Results showed there was a good level of reliability, while inter-rater reliability and intra-rater reliability were found to be statistically significant
- The authors recommend that the STOW-V Checklist V1.0 is used with patients utilising a shared-care model. Clinicians should provide supervision and oversight of self-treatment practices whenever possible, as well as acceptable to the patient.

Kapp S, Prematunga R, Santamaria N (2021) The "self-treatment of wounds for venous leg ulcers checklist" (STOW-V Checklist V1.0): Part 2-The reliability of the Checklist. Int Wound J [Online ahead of print]

3 Our contemporary understanding of the aetiology of pressure ulcers/pressure injuries

Readability	✔	✔	✔	✔	✔
Relevance to daily practice	✔	✔	✔	✔	
Novelty factor	✔	✔	✔		

- An updated edition of the Clinical Practice Guideline (CPG) on Prevention and Treatment of Pressure Ulcers/Injuries was published in 2019. A team of wound care experts set out to analyse this, as well as pressure ulcers (PUs)/pressure injuries (PIs) aetiology, classification, and future research needs in a comprehensive manner.
- This is the third paper in a series of CPG articles aimed at summarising the latest understanding of the aetiology of pressure ulcers/pressure injuries with an onus on the effects of soft tissue deformation.
- Cell damage results from high tissue deformations on a microscopic level within just a few minutes, usually becoming clinically visible after a few hours of sustained loading for the damage. Exposure to excessive shear strain/stress is the primary cause of superficial skin damage, while deeper pressure ulcers/pressure injuries predominantly result from high pressures in tandem with shear at the surface over bony prominences (or underneath unwieldy medical devices).
- In conclusion, prevention strategies for primary pressure ulcers/pressure injuries should have the intention of minimising deformations by either reducing the peak strain/stress values in

tissues or decreasing the exposure time.

Gefen A, Brienza DM, Cuddigan J et al (2021) Our contemporary understanding of the aetiology of pressure ulcers/pressure injuries. *Int Wound J* doi: 10.1111/iwj.13667 [Online ahead of print]

4 Validity and reliability of a Japanese version of the pressure ulcer knowledge assessment tool

Readability	✔	✔	✔		
Relevance to daily practice	✔	✔	✔		
Novelty factor	✔	✔	✔		

- The aim of the authors was to create a Japanese version of the pressure ulcer knowledge assessment tool. The tool is designed to measure the knowledge of individual nurses regarding pressure ulcers in order to evaluate the efficacy of current educational programmes, resulting in both prevention and early treatment, as well as to verify its validity and reliability in a Japanese nurse population.
- Some 1,716 nurses participated in this study across three university hospitals with each nurse employed for at least 1 year. Excluded from the study were managers, part-timers, and individuals working in both the operating room and the outpatient as this study was concerning itself with bedside preventive care.
- The group with the higher expertise consisting of wound, ostomy and continence nurses were found to significantly outperform nurses certified in other fields. Overall internal consistency reliability was found to be 0.86 with a 2-week test-retest intraclass correlation of 0.60.
- The authors concluded that the instrument may be applied as both a reliable and valid measure to assess pressure ulcer knowledge of Japanese nurses in the fields of nursing education, research and practice.

Yamamoto-Kon A, Fukahori H, Ogata Y, Ngano M (2021) Validity and reliability of Japanese version of the pressure ulcer knowledge assessment tool. *J Tissue Viability* S0965-206X(21)00098-X. doi: 10.1016/j.jtv.2021.08.002 [Online ahead of print]

5 Virtual triage and outcomes of diabetic foot complications during Covid-19 pandemic: A retro-prospective, observational cohort study

Readability	✔	✔	✔	✔	
Relevance to daily practice	✔	✔	✔	✔	
Novelty factor	✔	✔	✔		

- The authors found that outcomes in people with diabetic foot complications including diabetic foot ulcer (DFU) who were given virtual triage and personalised video consultations during COVID-19 pandemic are not presently known.
- Virtual triage was conducted on patients with foot complications attending the diabetic foot clinic prior to lockdown. This included clinical history, visual inspection of feet, domiciliary wound care (community nurse-assisted dressings) and offloading instructions.
- The authors analysed and compared patients who presented during the following 24 weeks of COVID-19 lockdown (April-September 2020, assigned to group 1) with those attending a foot clinic during the corresponding period in 2019 (assigned to group 2). Group 1 included 561 participants with 41.3% of these having an active DFU (*n*=227), while group 2 included 650 participants with 56.31% having an active DFU (*n*=366).
- It was concluded that virtual triage and teleconsultations during the pandemic for people with foot complications have similar ulcer and limb outcomes compared to face-to-face foot care delivery.

Rastogi A, Hiteshi P, Bhansali A, Jude EB (2021) Virtual triage and outcomes of diabetic foot complications during Covid-19 pandemic: A retro-prospective, observational cohort study. *PLoS One* 16(5): e0251143

6 Topical oxygen therapy in the treatment of diabetic foot ulcers: a multicentre, open, randomised controlled clinical trial

Readability	✔	✔	✔		
Relevance to daily practice	✔	✔	✔	✔	
Novelty factor	✔	✔	✔		

- Insufficient perfusion and blood oxygen levels in individuals with hard-to-heal wounds due to poor circulation, vascular disruption and vasoconstriction, reduce the capacity of wounds to heal. This study set out to investigate the effect that topical oxygen has on healing rates in patients with hard-to-heal diabetic foot ulcers (DFUs).
- A multicentre, open-label, community-based randomised clinical trial was carried out to compare standard care (SOC) with/without continuous topical oxygen therapy (TOT) for 12 weeks in those with DFUs or minor amputation wounds.
- One-hundred-and-forty-five patients were randomised with their ulcers graded Infectious Diseases Society of America (IDSA) 1 or 2, or Wagner 1 or 2. A total of 18/64 (28.1%) patients healed in the SOC group by 12 weeks, compared with 36/81 (44.4%) in the SOC plus TOT group (*P*=0.044).
- There was a statistically significant wound area reduction between the two groups: SOC group mean reduction: 40% (standard deviation (SD) 72.1); SOC plus TOT group mean reduction: 70% (SD 45.5); per protocol *P*=0.005). In conclusion, the addition of TOT to SOC acts as a contributor factor in the wound closure of hard-to-heal DFUs.

Serena TE, Bullock NM, Cole W et al (2021) Topical oxygen therapy in the treatment of diabetic foot ulcers: a multicentre, open, randomised controlled clinical trial. *J Wound Care* 30(Sup5): S7–S14