

# Caring For Patients At Increased Risk For Skin Frailty: Prospects For Developing And Testing New Interventions In A Clinical Context



Thesis submitted to fulfil the  
requirements of  
Doctor in Health Sciences  
Ghent University  
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Academic Year 2023 - 2024

## Summary

**Skin integrity**, crucial for understanding skin frailty, involves the skin's structure and defence mechanisms working together. It's not enough to maintain the skin's structure alone; the skin must also functionally adapt to challenges. **Skin frailty** denotes increased sensitivity and reduced ability to maintain structure and function against threats, leading to vulnerability to damage. This condition varies over time, with certain factors heightening an individual's susceptibility to skin damage.

This PhD thesis investigated interventions for **three groups at high risk of skin frailty: individuals with incontinence, end-of-life patients**, and those with **complex wounds**, emphasizing the critical role of nurses despite healthcare challenges. It addressed the **economic and practical aspects of managing incontinence-associated dermatitis (IAD)**, a major risk for incontinent individuals with significant healthcare costs. Significant heterogeneity was found in cost calculations and intervention reporting. Only direct medical costs were reported, with product costs ranging from \$0.05 to \$0.52 per application. Total costs varied widely among studies due to differences in labour cost calculations, among other factors. The study highlighted the need for **standardized guidelines to compare and evaluate the cost-effectiveness** of IAD prevention and treatment due to the wide variability in cost calculations and intervention reporting across studies. Chapter 2 underscored the **potential of innovative interventions** like sensor-integrated incontinence materials, which detect saturation and alert healthcare providers, aimed at improving care in residential facilities. Chapter 3 explored the **integration of sensor technology into care**, emphasizing the importance of **involving end-users** such as residents, nurses, and policymakers in the development process. Their input is vital for assessing the

technology's value and ensuring its success in practical applications, highlighting how user feedback influences product development and implementation. **Key criteria for sensor-integrated incontinence materials** included real-time alerts, wireless connectivity, comfort, and discretion, with benefits like workload reduction and improved care quality. Challenges included adapting to new routines and technology scepticism. A **pilot study** indicated the need for better connectivity and accuracy, suggesting further long-term evaluation. The PhD thesis also covered **end-of-life care**, stressing the importance of **supporting skin integrity with dignified, holistic approaches**, given the limited research and evidence. For **complex wounds**, the PhD thesis emphasized the need for a **core outcome set (COS)** to assess interventions' effectiveness, highlighting the drive for innovative, cost-effective, and high-quality care solutions. Chapter 6 outlined the **development of a Core Outcome Set (COS)** for treating complex wounds with bordered foam dressings. Initially, a review mapped existing outcomes, noting a lack of patient-reported outcomes. Subsequent interviews with patients, researchers, and clinicians identified additional outcomes, culminating in a Delphi process to finalize the COS, which includes **seven core outcomes**. This COS aims to standardize trial comparisons, enhance data synthesis, and support evidence-based care. The PhD thesis underscores the need for **economic analysis, core outcome development, end-user input, and holistic care** to improve outcomes for individuals at risk of skin frailty, focusing on elevating care quality.

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## Curriculum Vitae

Charlotte Raepsaet (born 1994) is a nurse and obtained her master's degree in Nursing and Midwifery in 2019. Charlotte started her doctoral research in November 2019 to convert her passion for research and nursing into new insights that can contribute to the quality of. Her expertise lies in the research on wound and skin care for patients at increased risk for skin frailty.



### **Funding**

This doctorate was made possible thanks to the financial support from Essity Hygiene and Health AB, Imec Ghent, het Vlaams Agentschap Innoveren & Ondernemen (VLAIO) en Mölnlycke Health Care.

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