



# Skin injury prevention in an Irish neonatal unit: An action research study



Jane Grosvenor, RCN, MHSc, Staff Nurse<sup>a,\*</sup>, Mary O' Hara, PhD, MSc, RGN, RM, RNT, Lecturer<sup>b,1</sup>, Maura Dowling, PhD, MSc, BNS, RGN, RM, RNT, Lecturer<sup>b,2</sup>

<sup>a</sup> St Clare's Neonatal Intensive Care Unit, Galway University Hospitals, Galway, Ireland

<sup>b</sup> School of Nursing & Midwifery, National University of Ireland, Galway, Ireland

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## KEYWORDS

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Action research;  
Skin injury;  
Neonatal pressure ulcer;  
Focus groups

**Abstract** *Aim:* This study aimed to improve skin assessment and skincare practices for neonates in a regional neonatal setting in Ireland by the implementation of the Neonatal Tissue Viability Risk Assessment Tool.

*Method:* A qualitative Participatory Action Research design was used. Following the introduction of the Neonatal Tissue Viability Risk Assessment Tool into the neonatal unit three focus groups with nurses (n = 17) were held. The focus group data was analysed using thematic analysis.

*Results:* Neonatal nurses acknowledged the need for change regarding the prevention of neonatal skin injuries. Variations in skincare practices were found and a need for standardised care was highlighted. Implementation of the Neonatal Tissue Viability Risk Assessment Tool helped to raise awareness, standardise practice and improve documentation and communication.

*Conclusion:* Implementing a skin risk assessment tool into neonatal units in Ireland together with evidence-based skincare guidelines and staff education could result in the reduction of skin injuries in these infants.

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\* Corresponding author. Tel.: +353 833785488.

E-mail addresses: [jane.grosvenor@hse.ie](mailto:jane.grosvenor@hse.ie) (J. Grosvenor), [mary.ohara@nuigalway.ie](mailto:mary.ohara@nuigalway.ie) (M. O' Hara), [maura.dowling@nuigalway.ie](mailto:maura.dowling@nuigalway.ie) (M. Dowling).

<sup>1</sup> Tel.: +353 91 493684.

<sup>2</sup> Tel.: +353 91 493833.

## Introduction

Skin injury prevention for premature infants is an aspect of nursing care that can be overlooked in the busy adrenaline powered environment of the Neonatal Intensive Care Unit (NICU). Technological advances in neonatal and maternal care such as the provision of antenatal steroids, improvements in ventilation methods and surfactant therapy have enabled infants to survive at the cusp of viability (Saigal and Doyle, 2008). The risk of skin breakdown increases with lower gestational age and as a result, nurses are presented with new challenges in their management of skin injuries in the NICU (Scheans, 2015). Skin injuries continue to occur in neonatal healthcare settings despite the majority being preventable (Sardesai et al., 2011). Prevalence rates of as high as 23% (Baharestani and Ratliff, 2007) and incidence rates of 16% (Fujii et al., 2010) in NICUs have been reported. A neonatal skin injury is devastating for parents and can result in potential scarring, a longer hospital stay and increased hospital costs (Lamburne, 2015). Moreover, they contribute to an increased risk of infection which is the major cause of infant morbidity and mortality in the NICU (Visscher and Narendran, 2014). Despite this, a lack of effective treatments for neonatal skin injuries exist due to the ethical constraints associated with testing products on premature infants' skin (Franck, 2005; Scheans, 2015). Prevention is therefore central to the management of these injuries and the implementation of a skin risk assessment tool into Irish NICUs could help to address this issue (Vance et al., 2015). The benefits of the implementation of a skin risk assessment tool has been highlighted internationally in neonatal units in America, the United Kingdom and Australia as healthcare professionals are becoming increasingly aware that prevention of neonatal skin injuries is an area of clinical practice that could be improved (Huffines and Logsdon, 1997; McGurk et al., 2004; Ashworth and Briggs, 2011; Dolack et al., 2013; Schumacher et al., 2013; August et al., 2014; Visscher, 2014; Vance et al., 2015).

## Study aim

This study aimed to improve skin assessment and skincare practices for neonates in a regional neonatal setting by assisting nurses to create a change to their practice through the implementation of a skin risk assessment tool. The setting for this study was a Level 2 regional NICU in Ireland. The level 2 NICU offers all modern medical

interventions to premature and ill neonatal infants including all forms of ventilation and nitric oxide therapy and point of care echo-cardiology. The NICU has 14 beds to meet current demand for the service. The beds capacity includes 4 intensive care cots, 4 high dependency cots and 6 special care cots.

## Method

This study utilised a Participatory Action Research approach. Action Research is grounded in a participatory worldview and originates from the concept of critical social theory (Koshy et al., 2011). The aim of Action Research is to take action, change practice or to generate or refine a theory (Koshy et al., 2011). Participatory Action Research was chosen because the aim of this study was to investigate real life practices with the purpose of understanding and improving practice and quality of neonatal care (Kemmis and McTaggart, 2008). Ethical approval for the study was granted by the Hospital's ethics committee.

Action Research involves a number of phases. This study had four phases (Fig. 1).

### Phase 1 – diagnosing

A theory-practice gap in relation to neonatal skin assessment was identified through a review of the literature which revealed that neonatal units internationally use skin risk assessment tools to assess infants' skin and standardise practice. However, a skin risk assessment tool was not in use at the neonatal unit where this study took place.

### Phase 2 – planning action

In the planning phase, all available neonatal skin risk assessment tools were considered for implementation. Of the limited neonatal tools available most have not been validated (Vance et al., 2015). However, the Braden Q scale has been tested for reliability and validity in paediatrics and Noonan et al. (2011) "*feel the Braden Q Scale can be used in the neonatal population until a valid and reliable neonatal pressure ulcer risk assessment tool is developed*" (Noonan et al., 2011, p. 573). The Neonatal Tissue Viability Risk Assessment Tool (Fig. 2) is based on the Braden Q scale and has been adapted for use with the neonatal population. Furthermore, it is currently being used in a large tertiary neonatal unit in the United Kingdom (Ashworth and Briggs, 2011). Therefore, this tool was

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