What patient characteristics guide nurses' clinical judgement on pressure ulcer risk? A mixed methods study

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A R T I C L E   I N F O

A B S T R A C T

Background: Nurses' clinical judgement plays a vital role in pressure ulcer risk assessment, but evidence is lacking which patient characteristics are important for nurses' perception of patients' risk exposure.

Objectives: To explore which patient characteristics nurses employ when assessing pressure ulcer risk without use of a risk assessment scale.

Design: Mixed methods design triangulating observational data from the control group of a quasi-experimental trial and data from semi-structured interviews with nurses.

Setting: Two traumatological wards at a university hospital.

Participants: Quantitative data: A consecutive sample of 106 patients matching the eligibility criteria (age ≥18 years, no pressure ulcers category ≥2 at admission and ≥5 days expected length of stay). Qualitative data: A purposive sample of 16 nurses.

Methods: Quantitative data: Predictor variables for pressure ulcer risk were measured by study assistants at the bedside each second day. Concurrently, nurses documented their clinical judgement on patients' pressure ulcer risk by means of a 4-step global judgement scale. Bivariate correlations between predictor variables and nurses' risk estimates were established. Qualitative data: In interviews, nurses were asked to assess fictitious patients' pressure ulcer risk and to justify their risk estimates. Patient characteristics perceived as relevant for nurses' judements were thematically clustered. Triangulation: Firstly, predictors of nurses' risk estimates identified in bivariate analysis were cross-mapped with interview findings. Secondly, three models to predict nurses' risk estimates underwent multiple linear regression analysis.

Results: Nurses consider multiple patient characteristics for pressure ulcer risk assessment, but regard some conditions more important than others. Triangulation showed that these are measures reflecting patients' exposure to pressure or overall care dependency. Qualitative data furthermore indicate that nurses are likely to trade off risk-enhancing conditions against conditions perceived to be protective. Here, patients' mental capabilities like willingness to engage in one owns care seem to be particularly important. Due to missing information on these variables in the quantitative data, they could not be incorporated into triangulation.

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Conclusions: Nurses' clinical judgement draws on well-known aetiological factors, and tends to expand conditions covered by risk assessment scales. Patients' care dependency and self-care abilities seem to be core concepts for nurses' risk assessment.

What is already known about the topic?

- International guidelines recommend that nurses' clinical judgement on pressure ulcer risk needs to be supported by standardised risk assessment tools.
- Nurses' clinical judgement derived from on-going patient observation serves as major information basis for nurses' decision-making on preventive actions, even if they regularly fill out risk assessment tools.
- Empirical evidence about nurses' clinical judgement is sparse. In particular, it is unclear which patient characteristics inform and determine nurses' clinical judgement on pressure ulcer risk.

What this paper adds

- Nurses draw on well-established aetiological factors when they assess pressure ulcer risk without use of a risk assessment tool. In particular, conditions leading to increased or prolonged exposure to pressure, namely mobility impairments, as well as patients' overall care dependency determine nurses' risk estimates.
- For their clinical judgement, nurses also account for risk-lowering conditions, i.e. conditions counterbalancing present risk factors or helping patients to cope with a current risk exposure.
- Likely weaknesses of nurses' clinical judgement are under-recognition of conditions impairing patients' tissue tolerance and dissimilar interpretation of certain risk factors.

1. Background

Pressure ulcer risk assessment is regarded as the first step in pressure ulcer prevention, serving as a basis for allocation of preventive measures. In evidence-based guidelines for pressure ulcer prevention, risk assessment is a major topic. However, recommendations vary with regard to whether or not nurses should use standardised risk assessment scales. While current international guidelines favour use of such tools in order to support nurses' clinical judgement (Australian Wound Management Association, 2012; National Pressure Ulcer Advisory Panel and European Pressure Ulcer Advisory Panel, 2009), the German National Expert Standard does neither recommend nor rule out the use of these instruments (Deutsches Netzwerk für Qualitätsentwicklung in der Pflege, 2010). Instead, nurses' clinical judgement alone is highlighted as primary source of risk assessment.

These inconsistent recommendations are likely due to uncertainties inherent in the empirical evidence regarding the relative merits of risk assessment tools compared to nurses' clinical judgement alone. Available data from experimental trials directly examining the effect on

pressure ulcer incidence or from studies measuring attributes indirectly impacting on the pressure ulcer incidence, e.g. diagnostic accuracy, diagnostic yield, or impact on allocation of preventive measures (Ferrante di Ruffano et al., 2012), are insufficient in quantity and/or quality, precluding firm conclusions on the comparative clinical efficacy (Balzer et al., 2013; Chou et al., 2013).

Clinical judgement is defined as any "interpretation or conclusion about a patient's needs, concerns, or health problems and/or the judgement to take action…" (Tanner, 2006) and is regarded as core element of professional nursing (Royal College of Nursing, 2003). Clinical judgement about pressure ulcer risk reflects nurses' estimates of patients' risk exposure, derived from nurses' explicit and implicit knowledge on pressure ulcer risk in general as well as various patient-specific information on prevalent risk factors, e.g. gathered from patient observation, the patient's history and/or other clinical hints (Deutsches Netzwerk für Qualitätsentwicklung in der Pflege, 2010). Although use of risk assessment tools may contribute to this clinical judgement, in the present paper the term 'clinical judgement' refers to nurses' risk estimates established without use of such a tool, unless stated otherwise. This understanding is based on descriptive data suggesting that in clinical practice nurses tend to base their judgements on pressure ulcer risk mainly on information gained from informal assessments carried out during on-going and often implicit patient observations (Baxter, 2008; Fossum et al., 2011), even if they regularly apply risk assessment tools (Baxter, 2008).

Despite the important role of nurses' clinical judgement for the practice of pressure ulcer prevention, its diagnostic attributes have rarely been investigated (Balzer et al., 2013; Moore and Cowman, 2010). A correlation study carried out in critically ill patients indicate that nurses' subjective global risk estimates and sum scores of risk assessment scales only share up to 60% of variance (Kottner and Dassen, 2010), suggesting that nurses' views on the risk exposure remarkably differ from their risk estimates derived from standardised risk assessment tools. One explanation may be that nurses for their clinical judgement draw on other factors than those captured by the standardised tools, or that they weigh certain patient conditions differently. To get a deeper insight into nurses' understanding guiding their clinical judgement on pressure ulcer risk, the following research question was investigated: Which patient characteristics do inform nurses' clinical judgement on pressure ulcer risk in individual hospital patients?

2. Methods

An explorative study using a mixed methods approach was conducted. A qualitative study consisting of semi-structured interviews with nurses of two traumatological