



Pressure Ulcers: An Outcome Based View on Risk Assessment Tools, Timely Detection and Prevention

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Why make risk assessments?

- To identify patients at risk of developing a pressure injury (sensitivity)
- To distinguish between those who are at risk from those not at risk (specificity)
- To identify both groups consistently and reliably with a focus on SENSITIVITY and SPECIFICITY

Methods of risk assessment:

- Numeric scales - recommended in international guidelines on pressure injury prevention (Braden, Waterlow, Norton)
- Clinical judgment - based on knowledge of risk factors
- Head to toe skin inspection

Problems:

- More than 40 risk assessment scales available but debate continues about their usefulness
- Clinical judgment: validity and reliability issues
- Skin inspection: low reliability - damage at the cellular level is not visible to naked eye

SCALES (numeric):

Problem #1:

Causal factors (like immobility) and risk factors are MIXED into one scale .

We have no idea how moisture or incontinence, for example, affects the total score.



The goal is to predict whether or not to expect a PI but after risk assessment and skin assessment, we will try to prevent a PI, so it's impossible to know the real connection between risk scores and final outcome we're measuring.

Problem #2:

Risk assessment is different from a diagnostic screening tool – there is no CONDITION. You're making an estimate about a condition to be developed.

Problem #3:

Sensitivity and specificity will change over time – there is patient evolution. Patient characteristics change and prevention changes. It's nearly impossible to point out sensitivity and specificity score.

Belgian guidelines developed in 2012/2013 including sensitivity and specificity –

Sensitivity - the proportion of actual positive cases correctly identified

Specificity - the proportion of actual negative cases correctly identified

Sensitivity and Specificity are associated with time, point of outcome assessment, and cut-off point

Measuring these brings sensitivity in balance with specificity. Research included all 3 numeric scales to arrive at a discrimination index but scores showed fair or poor discrimination.

Problem #4:

Is it feasible to design a randomized control trial to study the effectiveness of risk assessment scales?

Calculations of sample sizes – how many patients do you need to test the effectiveness of the scale? You need HUGE samples to do this - 62,000 - 286,000 patients! - in order to evaluate the scale's effectiveness.



Problem #5:

Clinical Judgment

Nurses' clinical judgment draws on well-known etiological 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.

2009 study (Saleh et al) on whether a risk assessment scale (Braden) reduce nosocomial pressure injuries

Using a pre-test and post-test comparison, concludes that clinical judgment may be as effective as employing a risk assessment scale to assess the risk of pressure ulcers.

2011 study (Webster et al) to determine the effectiveness of two pressure injury screening tools (Waterlow and Ramstadius scale) against clinical judgment in preventing pressure ulcers

Conclusion: No evidence that two common risk-assessment tools are superior to clinical judgment to prevent pressure injuries.

Problem #6:

Head to toe skin inspection (physical inspection)

Visual inspection, signs of redness, edema, hardness

It's a complex skill for nurses – there is a low rate of inter- and intra-rater reliability

In 2008 study involving 1,452 nurses assessing pictures of lesions – most of the pictures of pressure injuries were classified INCORRECTLY!

Also, non-blanchable erythema was frequently assessed incorrectly as blanchable

The second problem is that damage at the cellular level is invisible to the naked eye.

Consequences:

Prevalence of PIs remain high

In 2002, 18.1% of patients in European hospitals and only 10% of those received adequate prevention.



Despite all the efforts we are making, we are not making enough difference in incidence.

Nursing home residents are particularly vulnerable because of decreased health and restricted mobility.

Health economics

Cost of pressure ulcer prevention pre patient per day varied between €15.7 and €87. For treatment per patient varied between €1.71 and €470.49.

Not only targeting the RIGHT patients is key, but also NOT providing help to patients who don't need it! Everything costs.

€28.3 million to prevent PIs in Belgium yearly alone

€8.7 million spent on people NOT at risk (Belgium, yearly) That's why we have to assess.

Conclusions:

- There is NO clinical evidence supporting one PI risk assessment scale over another.
- No evidence that one risk assessment scale more effective than others.
- Skin assessment is crucial but does not cover damage at the cellular level.
- Costs of prevention much lower than treatment.
- We urgently need more accurate tools to find EARLY damage.

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