

EVIDENCE FOR THE PRACTICE

Clinical judgement or assessment scales to identify patients at risk of developing pressure ulcers?

By

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SUMMARY

Clinical question: In patients at risk of developing pressure ulcers, does the use of a validated assessment scale predict the risk more effectively⁴⁹ than clinical judgement does?

Selected article: Pancorbo-Hidalgo PL, García-Fernández F P, López-Medina IM, Álvarez-Nieto C. Risk assessment scales for pressure ulcer prevention: a systematic review. *Journal of Advanced Nursing* 2006; 54 (1): 94–110.

Summary of the study: It contains a systematic review that aims to determine the clinical effectiveness of risk-assessment scales for pressure ulcer development (EVRUPP); their validity; their capacity for measuring the risk and compare them with the nurses' clinical judgement. The Braden scale best predicts the risk of developing UPP [OR 4,08 (IC 95%= 2,56-6,48)]. On the contrary, clinical judgement is not a good predictor of the risk of UPP [OR 1,69 (IC 95%= 0,76-3,75)].

Comment: The authors have made an exhaustive bibliographical search and a rigorous assessment of the enclosed articles, so the study offers enough internal validity. The type of analysis made (meta-analysis), together with the large number of articles reviewed - investigations that have been made in all contexts and care levels in different countries and organisations - grant it sufficient external validity criteria to assume that the data can be extrapolated. The analysed study's relevance rests on various aspects. It shows that when a duly validated EVRUPP is used as a criterion in the allocation of preventive resources, it produces an increase in its efficacy. It allows the establishment of objective differences among the scales demonstrating that the Braden scale produces better results. Clinical judgment does not have sufficient risk prediction capability.

Keywords

Critical review, systematic review, clinical judgment, risk assessment scales, pressure ulcers.

QUESTION

In patients at risk of developing pressure ulcers, does the use⁵⁷ of a validated assessment scale predict the risk more effectively than clinical judgment does?

SELECTED ARTICLE

Pancorbo-Hidalgo PL, García-Fernández F P, López-Medina IM, Álvarez-Nieto C. Risk assessment scales for pressure ulcer prevention: a systematic review. *Journal of Advanced Nursing* 2006; 54 (1): 94-110.

DESIGN OF THE STUDY

Systematic review.

PLACE WHERE CARRIED OUT

Jaén, Spain.

OBJECTIVES

- To determine the effectiveness of the use of pressure ulcer risk-assessment scales (EVRUPP) in clinical practice for the prevention of these lesions, measured in terms of: a) reduction of the incidence of UPP, b) more effective use of means of prevention of UPP.
- To determine the degree of validation of the different EVRUPP in the bibliography.
- To determine the usefulness of EVRUPP as indicators of the risk of onset of UPP in a patient.

METHODOLOGY

Systematic literature review through a search in 14 bibliographic data bases using the following descriptors: “*pressure ulcer*” or “*decubital ulcer*” and “*risk assessment*”. Selection of clinical trials or of prospective validation studies in Spanish, English, French and Portuguese. For the critical assessment of the studies the *Critical Appraisal Skills Programme (CASP)* guide was used for the clinical trials, and the *Clinical Practice Guide for the Assessment and Prevention of Pressure Ulcers (Rycroft-Malone & McInness 2000)* for the prospective cohort study. Each study was independently assessed by two investigators. In case of discrepancies about the consideration of its validity, it was examined by a third investigator, who decided whether to accept it or not.

⁵⁸ The *odds ratio* risk indicator was computed from the data provided in the original studies calculating the weighted mean values according to the inverse of the variance. A meta-analysis was also carried out, of the effect-

magnitude indicators using the random effects model.

MAIN RESULTS

Clinical effectiveness

The systematic use of an assessment scale for the risk of UPP and the assignment of pressure relief cushions as a function of risk, significantly decrease the incidence of UPP. Besides, they produce a higher number of preventive interventions and these are more precocious.

Validity of the EVRUPP

In the weighted mean, the Braden scale (66,7% effectiveness) is the one which offers better values of the group of indicators, whereas the Norton and Waterlow scales do not surpass the indicators obtained through the nurses' clinical judgement. The Waterlow scale stands out for its high sensitivity (it is capable of detecting the majority of patients who develop UPP), but at the expense of a very reduced specificity.

Nurses' clinical judgment

This shows some moderate sensitivity values (around 50%), a variable specificity and some high percentages of positive predictive values, which in part are due to the high incidence of UPP that took place in the studies.

Risk indicators

The Braden scale is the one that better predicts the risk of developing UPP [OR 4,08 (IC 95%= 2,56-6,48)]. On the contrary, the clinical judgement is not a good predictor of UPP risk [OR 1,69 (IC 95%= 0,76-3,75)].

CONCLUSIONS

The use of an EVRUPP validated as a criterion in the assignment of preventive resources (pressure management surfaces) produces an increase in efficacy and the use of more preventive and precocious interventions on the patients. The Braden and Norton scales are better than the nurses' clinical judgment in predicting the risk of a patient of developing UPP. The weighted analysis and the meta-analysis of validation studies offer adequate evidence for recommending the Braden scale, as the one that offers the best sensitivity/specificity balance, and the highest capability for prediction of patients who can develop UPP. Currently there is no evidence that the nurses' clinical judgment by itself is capable of predicting the risk of developing UPP for all the patients.

COMMENT

Pressure ulcers represent a public health problem with grave repercussions in such areas as loss of health; increase of mortality risk; higher economic costs incurred and ethical and legal implications that might be entailed.

Until recent times in our country only a small interest has been shown by organizations and professionals in fathoming the problem of pressure ulcers. The recent Quality Plan of the National Health System (1) for the first time establishes strategies toward improving patient safety during his hospital stay, describing pressure ulcers as a process that disturbs that safety and that requires to be minimized.

Nobody disputes that the best strategy against this problem is its prevention, considering that it becomes avoidable by adequate actions, in up to 95% of all cases. All clinical practice guides and updated protocols, that are capable of being reviewed on the prevention of pressure ulcers, start from the assessment of the risk of developing them, using in a systematic way an instrument of risk assessment (EVRUPP), without diminishing the professional's clinical judgement, against which they do not compete. The possible benefits of using an EVRUPP, ⁵⁰ about which nobody seems to doubt, warrant some questioning that could overcome generalisations, errors or doubts: do all the EVRUPP fulfil the purpose for which they were created?; do evidences exist that determine their clinical effectiveness, their validity, their capability to measure risk?; is it possible to compare these predictive values with the nurses' clinical judgement?, etc.

The study under review tries to answer these questions.

Regarding the internal validity of the study analysed we find that the authors have made an exhaustive search, and although limited to four languages, it seems reasonable to think that few articles may have escaped their analysis. On the other hand, the system used for the assessment of the articles (peer review and utilisation of systems validated for critical analysis) grants credibility to the study.

In addition, the meta-analysis has been made considering the weighted mean values according to the inverse of the variance; these allow the adjustment of obtained results as a function of the sample,

because it is not the same that a work shows a 95% sensitivity with a 50-patient sample, as one having an 80% sensitivity but with a 1,000 patient sample, and this system allows to compensate and adjust these possible lags, which supports the confidence in the results obtained by the authors.

All that, together with the high number of articles reviewed, investigations that have been made in all contexts and care levels in different countries and organisations, grant sufficient external validity criteria to assume that the data can be extrapolated.

The relevance of the analysed work rests on various aspects. The first one is that it provides data that show that when a duly validated pressure ulcer risk assessment scale is used as a criterion for the⁵¹ assignment of preventive resources (pressure management surfaces), it increases its efficacy, which together with the execution of more preventive and more precocious interventions on the patients decreases the incidence of the onset of these lesions. This fact by itself amply justifies the need to include in the nursing assessment the use of an EVRUPP in all care levels.

The second relevant aspect of the study is that it permits the establishment of objective differences among the scales. Thus, the Braden scale is the one that has been subjected to a more complete validation process, in number of studies as well as in different care facilities (acute care hospitals, residences or chronic care centres and home care). Not only the data from validation studies but also those of risk factor studies indicate that this scale offers the best balance; likewise, the inter-observer reliability is high resulting in consistent results, when they are used in different care facilities. Therefore, it provides the clinician an adequate evidence at the time of deciding which tool to use for determining the risk, eliminating subjective criteria (preferences, opinions, etc.). It is interesting that the authors mention a scale developed and valid in Spain, the EMINA scale, which although not included in the meta-analysis due to the fact that at the moment of making the review only one validation had been published, it offers good indicators of reliability (71,9%) and of risk prediction [OR 8,24, IC 95% (4,10-16,54)] that have been later confirmed in another study (2), that places it within similar values with the Braden scale, and better than Norton or Waterlow.

Finally, the third relevant aspect is the comparison of the scales with the clinical judgement. Clinical judgement does not have enough risk prediction capability, since the 95% confidence interval of the *odds ratio* includes the value of 1. As recognised by the authors, “The studies that treat it do not offer,

however, data on the experience or training level of the nurses who applied it, which is an important aspect, since the capability for issuing an accurate clinical judgement is higher in those nurses with a longer professional experience and with a higher training than in beginning nurses. Precisely in order to avoid the problem of lack of experience the EVRUPP were developed, in such a way that ⁵⁹ any nurse who knows how to use it use can make accurate estimates about a patient's risk of developing UPP". The insufficient capability of nurses for predicting the development of UPP and assign preventive resources on the sole basis of their clinical judgement, has also been recently emphasised by other authors (3).

On this basis we can conclude:

- That we have adequate evidence (certainty A) to recommend the Braden scale as the most adequate for assessing the risk of developing UPP, by having the highest prediction capability and the best sensitivity/specificity compared to the rest of the scales.
- That we have adequate evidence (certainty A) to recommend the use of the Braden scale versus the nurses' clinical judgement, since the latter is not capable by itself of predicting the risk of developing UPP in all patients.
- That we have adequate evidence (certainty A) for recommending the use of a validated EVRUPP as a criterion for assignment of preventive resources.

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INFORMATION FOR AUTHORS

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