Chapter 3

Daily pain assessment: value for nurses and patients

ABSTRACT

Objectives: To describe the feasibility of daily pain assessment from the nurses’ and patients’ perspective in multiple settings.

Methods: The study was part of a larger intervention study using a quasi-experimental non-equivalent control group design (the institutional cycles design). In total, 240 nurses and 345 patients participated. The outcomes studied were the professional compliance of nurses with daily pain assessment, and the value of daily pain assessment for both nurses and patients. Only patients from the intervention group were asked for their opinion about daily pain assessment.

Interventions: Twice-daily pain assessment by nurses using a numeric rating scale was one of the components of the Pain Monitoring Program, which further consisted of educating nurses about pain and pain management.

Results: The results showed that nurses’ compliance with daily pain assessment was high (73.9%) and that daily pain assessment was feasible and valued by nurses, however, differences between the three hospitals and two care settings (medical versus surgical wards) were found. Although patients had initially difficulty with expressing their pain by use of a number, almost all patients were able to give a pain score and a majority was positive about daily pain assessment.

Conclusions: From this study it can be concluded that daily pain assessment is practical and appreciated by nurses as well as patients.

INTRODUCTION

Systematic assessment of patients’ pain is the foundation upon which all pain related interventions should be based. The American Pain Society Quality of Care Committee advises practitioners to chart and to display patients’ self report of pain. Despite these guidelines and advices, research on clinical assessment of pain has shown that registration of pain by nurses is not part of the routine care in hospitals. A survey of oncology nursing conference attendees demonstrated that 45% of the nurses attending did not use a pain rating scale when assessing pain, and a review of 82 chart audits in one hospital revealed that 76% of the charts showed no evidence of nurses using a self-assessment tool or a flow sheet for measuring pain.

However, it has been reported that when nurses are instructed to monitor pain on a daily basis, they find it useful and applicable to nursing practice. Walker studied the use of pain assessment charts in the management of chronic cancer pain, and found that 89% of
the 37 nurses indicated that the chart was a valuable tool for pain assessment. De Wit and Van Dam\textsuperscript{18} questioned nurses ($N = 14$) in a cancer hospital about daily pain assessment six months after implementation of pain ratings. The majority of nurses were positive about daily pain assessment. By reviewing the nursing records, professional compliance was checked and turned out to be high, namely 88%. However in general, a professional compliance with pain assessment varies widely from 6\% to 91\%.\textsuperscript{19-21}

A widely used, unidimensional instrument for pain assessment is the numerical rating scale (NRS).\textsuperscript{22-26} With the NRS the patient can be asked to indicate how strong his/her present pain intensity is on a scale from 0 to 10, where 0 represents ‘no pain at all’ and 10 ‘the worst possible pain’. According to Chapman and Syrjala\textsuperscript{27} the NRS is easy to understand by most patients. In clinical trials, researchers prefer the NRS because it is easier to understand and to score than a visual analogue scale.\textsuperscript{28,29} Several researchers have studied patients’ difficulties with the use of the NRS, and the results are contradictory. In some studies, all or almost all patients with chronic pain\textsuperscript{24,26,31} or malignant pain\textsuperscript{32} were able to complete the NRS. But in a study of cognitively impaired nursing home patients, the NRS had a completion rate of 47\%.\textsuperscript{33} In a study of hospitalized cancer patients almost 30\% of patients experienced difficulty in giving a pain score.\textsuperscript{18}

The feasibility and the value of daily pain assessment has only been studied in small and homogeneous populations in a single setting, the implementation of daily pain assessment with one implementation protocol in multiple settings has not yet been studied.\textsuperscript{34} Furthermore, it is not clear how many patients experience difficulties with the NRS and what difficulties are experienced. In the study reported in this paper, we studied multiple settings (two general hospitals and one university hospital) with a heterogeneous population (three medical wards and six surgical wards). The following research questions are addressed:

1. What is the professional compliance of nurses with daily pain assessment?
2. What is the opinion of nurses about daily pain assessment, and what variables are related to their opinion?
3. What is the opinion of patients about daily pain assessment? Do they experience problems in giving a pain score and which variables are related to these problems?

To answer these questions both nurses and patients were studied.

METHODS

Pain Monitoring Program

The study was part of a larger intervention study using a quasi-experimental non-
equivalent control group design (the institutional cycles design) in which a Pain Monitoring Program for nurses was implemented and in which the effectiveness of the Pain Monitoring Program was evaluated. Daily pain assessment by nurses using the NRS was one of the components of the Pain Monitoring Program that further consisted of educating nurses about pain and pain management. Educating nurses was necessary as research has shown that nurses have inadequate knowledge about pain evaluation techniques and pain treatment.\textsuperscript{35-38} The main purpose of the Pain Monitoring Program was to enhance nurses’ understanding of patients’ pain experience and to improve nurses’ knowledge about pain and pain treatment.

\textbf{Inclusion criteria}

This multicenter study was conducted in three hospitals in the Netherlands. In each hospital, three nursing wards participated, consisting of one medical and two surgical wards. Because all nurses from the nine wards were instructed to assess pain on a daily basis, they all were included in the study. Patients were included when they were in pain or when they had a prescription for analgesics. Patients were excluded if they were younger than 16 years, were admitted to the hospital for three days or less, or could not speak Dutch. Based on cause and duration of the pain, patients were grouped into the following categories: 1) acute malignant pain, 2) chronic malignant pain, 3) acute non-malignant pain, and 4) chronic non-malignant pain. Patients with pain longer than one month were defined as patients with chronic pain and patients with pain caused by cancer, metastases or cancer treatment were put in the malignant category. This distinction was made because we wanted to study differences between the four categories with regard to the research questions.

\textbf{Procedure}

Patients from the control group were given the usual nursing care and were interviewed twice about their pain experiences, at the beginning of their admission and before discharge. After the control group patients \((N = 358)\) were interviewed, nurses \((N = 216)\) were educated and trained how to conduct daily pain assessment and the numeric rating scale was implemented. Following the implementation of the Pain Monitoring Program, the intervention group patients \((N = 345)\) were interviewed about their pain and their pain scores were collected from the nursing records. Finally, six months after the implementation of the daily pain assessment, a questionnaire was sent to survey nurses’ opinion about the daily pain assessment in nursing practice. In this article, the patients in the intervention group, who have experienced daily pain assessment, and nurses who filled in the questionnaire, are described.
Ethical procedures

All patients gave oral informed consent, and the study was approved by the ethical committees of the three hospitals.

Nurses’ preparation

Before daily pain assessment was implemented, nurses followed a 3-hour educational program about pain, the assessment of pain and the use of a numeric rating scale, pharmacological and non-pharmacological pain management based on the literature. The content of the course is described in detail elsewhere. Nurses were instructed to assess pain twice a day, since pain may fluctuate during the day. Because daily pain assessment had to fit in easily in daily practice, the pain assessment took place during the control of vital signs (e.g. pulse, temperature) in the morning/afternoon and in the evening. Furthermore, nurses were instructed to give patients a short instruction letter at admission to the hospital explaining the purpose and use of the pain scale. Finally, nurses were instructed to chart the pain scores on the vital signs chart, so patient’s pain intensity, as well as the effectiveness of pain treatment, could be evaluated quickly.

Integrating a new routine into daily clinical practice takes time and effort. Therefore in each hospital a specially trained research assistant, who was also a nurse, was present on the wards. These research nurses were also responsible for including patients in the study and interviewing patients. Bedside teaching and regular follow-ups were part of the strategies to remind nurses about the need for twice daily pain assessment. Using reminders for nurses and asking the unit head nurses to pay attention to daily pain assessment at the end of the day shift, were other implementation strategies. Persistence and encouragement by both the research nurse and unit head nurse on the wards were necessary to ensure the implementation successful.

Nurses’ measures

Sociodemographic variables of the nurses including gender, age, years of working experience, educational level and care setting were collected. To establish the nurses’ professional compliance, the pain scores from the nursing records were collected. With these data, we were able to compute how often nurses assessed pain: the number of pain scores recorded on the vital signs chart was divided by the maximum number of pain scores possible. By means of a questionnaire, nurses’ opinion about daily pain assessment was evaluated. This 16-item questionnaire derived from De Wit and Van Dam covered the following issues: nurses’ attitude to daily pain assessment, the feasibility of daily pain assessment, problems in eliciting a pain score, timing of daily pain assessment, and the effect of daily pain assessment. Nurses could answer on a 5-point Likert Scale (strongly
agree, agree, not agree/not disagree, disagree, strongly disagree). The Likert Scale was later recoded into three categories: agree, neutral, and disagree. By means of open questions, nurses were asked to mention the advantages of and obstacles to daily pain assessment.

Patients' measures

Patients' characteristics including gender, age, days of admission to hospital, type and duration of pain, diseases and treatment, were obtained from the medical records. During the first interview, patients were asked for their pain experiences and pain treatment, during the second interview patients were also asked for their opinion about the daily pain assessment. Patients were asked: “How do you feel about being asked by nurses about your pain?”, “How do you feel about having to express your pain in a number from 0 to 10?”, and “You are asked about your pain twice a day. What do you think about that?”.

RESULTS

Nurses' characteristics

Ninety percent of the nurses \((N = 227)\) filled in the questionnaire that evaluated the use of daily pain assessment in nursing practice. Table 1 presents the sociodemographic characteristics of the nurses: most nurses were female (83.7%), a majority had followed in service education (67.9%), and the mean age was 31.6 \((SD = 9.5)\) years.

Patients' characteristics

In total, 369 patients were eligible for participation in the study, of whom only 24 (6.5%) declined participation. Patients who declined participation were significantly older than those who participated \((P < 0.001)\), and females refused to participate more often than males \((P < 0.05)\). Thirty patients (8.7%) dropped out between the first and second interview. Patients who dropped out were significantly older than patients who completed the study \((P < 0.05)\).

A total of 315 patients (85.4%) were interviewed for a second time after being asked for their pain intensity score for at least three days: 56.2% of these patients were female. The mean age was 58.6 years \((SD = 17.3)\) and 50.8% of the patients had cancer. The majority of patients had acute pain: 28.8% had acute malignant pain and 28.9% had acute non-malignant pain, 14.6% of the patients had chronic malignant pain and 27.6% had chronic non-malignant pain. An overview of the sociodemographic and medical characteristics of the patients is given in Table 2.
Table 1  Sociodemographic characteristics of the nurses

<table>
<thead>
<tr>
<th>Total</th>
<th>227</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (N, %)</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>37 (16.3)</td>
</tr>
<tr>
<td>Female</td>
<td>190 (83.7)</td>
</tr>
<tr>
<td>Age (mean in years, SD)</td>
<td>31.6 (9.5)</td>
</tr>
<tr>
<td>Working experience (mean in years, SD)</td>
<td>8.0 (8.1)</td>
</tr>
<tr>
<td>Educational level (N, %)</td>
<td></td>
</tr>
<tr>
<td>Student nurse</td>
<td>48 (21.1)</td>
</tr>
<tr>
<td>In service education</td>
<td>154 (67.9)</td>
</tr>
<tr>
<td>Other education</td>
<td>23 (10.1)</td>
</tr>
<tr>
<td>No response</td>
<td>2 (0.9)</td>
</tr>
<tr>
<td>Hospital (N, %)</td>
<td></td>
</tr>
<tr>
<td>Hospital A</td>
<td>76 (33.4)</td>
</tr>
<tr>
<td>Hospital B</td>
<td>83 (36.6)</td>
</tr>
<tr>
<td>Hospital C</td>
<td>68 (30.0)</td>
</tr>
<tr>
<td>Care setting (N, %)</td>
<td></td>
</tr>
<tr>
<td>Medical wards</td>
<td>73 (32.2)</td>
</tr>
<tr>
<td>Surgical wards</td>
<td>154 (67.8)</td>
</tr>
</tbody>
</table>

Nurses’ professional compliance

Nurses were instructed to assess pain twice a day and record the pain scores on the vital signs chart. In total, 73.9% of all possible pain scores were collected and 86.6% was collected at least once a day. Nurses enquired patients’ pain in the morning in 85.1% of the cases and in the evening in 63.6% of the cases (Table 3). Nurses from the medical wards were more compliant in the evening than those from the surgical wards (70.7% and 59.8%, respectively) (P < 0.001), but in the morning there were no differences between the wards in professional compliance (85.4% and 85.1%, respectively). The percentage of professional compliance in hospital A was statistically lower than in the other two hospitals (P < 0.001).

The professional compliance did not vary according to the patient’s category of pain. Nurses asked for the pain score from patients with acute malignant pain in 72.1% of the cases, from patients with chronic malignant pain 74.6% of the cases, from patients with acute non-malignant pain 75.5% of the cases, and from patients with chronic non-malignant pain in 73% of the cases.
Table 2  Sociodemographic and medical characteristics of the patients

<table>
<thead>
<tr>
<th>Total</th>
<th>315</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (N, %)</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>138 (43.8)</td>
</tr>
<tr>
<td>Female</td>
<td>177 (56.2)</td>
</tr>
<tr>
<td>Age (mean in years, SD)</td>
<td>58.6 (17.3)</td>
</tr>
<tr>
<td>Admission to hospital (mean in days, SD)</td>
<td>7.8 (13.9)</td>
</tr>
<tr>
<td>Pain category (based on type/duration)</td>
<td></td>
</tr>
<tr>
<td>Acute malignant pain</td>
<td>91 (28.8)</td>
</tr>
<tr>
<td>Chronic malignant pain</td>
<td>46 (14.6)</td>
</tr>
<tr>
<td>Acute non-malignant pain</td>
<td>91 (28.9)</td>
</tr>
<tr>
<td>Chronic non-malignant pain</td>
<td>87 (27.6)</td>
</tr>
<tr>
<td>Diseases (N, %)*</td>
<td></td>
</tr>
<tr>
<td>Neoplasms</td>
<td>160 (50.8)</td>
</tr>
<tr>
<td>Diseases of the circulatory system</td>
<td>24 (7.6)</td>
</tr>
<tr>
<td>Diseases of the digestive system</td>
<td>75 (23.8)</td>
</tr>
<tr>
<td>Diseases of the genitourinary system</td>
<td>31 (9.8)</td>
</tr>
<tr>
<td>Diseases of the musculoskeletal system and connective tissue</td>
<td>10 (3.2)</td>
</tr>
<tr>
<td>Other diseases (e.g. diseases of the respiratory system; diseases of the sense organs)</td>
<td>109 (34.6)</td>
</tr>
<tr>
<td>Treatment (N, %)*</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>15 (4.8)</td>
</tr>
<tr>
<td>Medication (excl. analgesics)</td>
<td>83 (26.3)</td>
</tr>
<tr>
<td>Surgery</td>
<td>186 (59.0)</td>
</tr>
<tr>
<td>Radiotherapy</td>
<td>13 (4.1)</td>
</tr>
<tr>
<td>Chemotherapy</td>
<td>24 (7.6)</td>
</tr>
<tr>
<td>Hormonal therapy</td>
<td>32 (10.2)</td>
</tr>
<tr>
<td>Other</td>
<td>82 (26.0)</td>
</tr>
</tbody>
</table>

* Percentage > 100%

Nurses’ opinion about daily pain assessment

It appeared that nurses had a positive attitude towards daily pain assessment: 69.6% of the nurses stated that daily pain assessment was important, 66.5% always performed the pain assessment, and 58.1% wanted to continue with daily pain assessment in future. A majority of nurses reported that daily pain assessment was feasible in clinical practice: 70.9% stated that daily pain assessment fitted in easily with the nurses’ daily routine, according to 50.7% of the nurses pain assessment did not take additional time, and 57.7% of the nurses thought it was useful to record pain scores in diagram on the vital signs chart.
Table 3  Nurses’ professional compliance with daily assessment of pain

<table>
<thead>
<tr>
<th></th>
<th>Hospital A</th>
<th>Hospital B</th>
<th>Hospital C</th>
<th>Total</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morning</td>
<td>79.0%</td>
<td>89.0%</td>
<td>87.8%</td>
<td>85.1%</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Evening</td>
<td>46.4%</td>
<td>78.9%</td>
<td>64.5%</td>
<td>63.6%</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Total</td>
<td>62.3%</td>
<td>83.8%</td>
<td>75.5%</td>
<td>73.9%</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>

However, only 14.5% of the nurses reported that it was, in their opinion, easy for patients to give a pain score, and 36.1% reported that the pain score given by the patient did not differ from what they considered it to be. Nurses did not have a problem with eliciting a pain score: 63.8% did not agree with the statement that it is difficult to ask for a pain score when they expect patients to be in pain, and 62.1% disagreed with the statement that it is bothersome to ask for a pain score when patients do not have pain. Timing of daily pain assessment was appropriate: almost half of the nurses considered asking twice a day for pain intensity to be appropriate (44.9%) and preferred asking for present pain intensity instead of asking for average pain intensity during the past 24 hours (47.1%). Although 64.3% reported that physicians did not make adequate use of pain assessment, 33.9% of the nurses reported that pain was more often discussed during the round with the physicians than it used to be. Furthermore, 41% of the nurses thought pain was more often discussed during the change of shifts and 43.2% thought pain was more often reported in the nursing records.

Better insight in patients’ pain, better pain management and more attention being paid to patients’ pain were reported spontaneously as the most important advantages of daily pain assessment by approximately 50% of the nurses. Besides these advantages, around 30% of the nurses mentioned obstacles to proper assessment such as: pain assessment was too time consuming, patients found it difficult to give a pain score, and physicians did not pay enough attention to patients’ pain scores.

Nurses from medical wards had a significantly more positive attitude towards daily pain assessment compared to their colleagues from surgical wards ($P < 0.001$), were significantly more positive about the feasibility of daily pain assessment ($P < 0.001$), experienced less problems with eliciting a pain score ($P < 0.001$), were more positive about the timing of daily pain assessment ($P < 0.001$), and more positive about the effects of daily pain assessment ($P < 0.001$).

Further, a statistically significant difference was found between the three hospitals: nurses from hospital B had a less positive attitude towards pain assessment compared to hospital C ($P < 0.001$), and were less positive about the feasibility of daily pain assessment


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(P < 0.001) compared to nurses from hospitals A and C. Nurses from hospital C were significantly more positive about the effect of daily pain assessment than nurses from the other two hospitals (P < 0.001). It is remarkable that nurses from hospital B, who were less positive about daily pain assessment, had the highest professional compliance with filling in the pain score of the three hospitals.

Besides care setting and hospital as factors that influenced nurses’ opinion about daily pain assessment, age of nurses also had impact on their opinion: older nurses were more positive about timing of daily pain assessment than younger nurses (P < 0.001). Nurses’ educational level did not have any impact.

Patients’ opinion about daily pain assessment

About 75% of the patients were positive about daily pain assessment and expressed the opinion that assessing pain twice a day was frequent enough. In agreement with nurses, 41.3% of the patients reported that it was difficult to give a pain score. By means of an open question, patients were asked to explain their difficulties. Of the 162 patients reporting difficulties, 37.5% of the patients had problems with the scale itself. The problems seem to be related to the distance between numbers and to the use of the term ‘school marks’. In the original instruction the term ‘school marks’ was employed to explain the use of the numbers in the NRS. In schools in the Netherlands, a system of school marks is used where 10 means ‘excellent’ and 0 means ‘very bad’. With the NRS it is the other way around, 0 means ‘no pain at all’ and 10 means ‘the worst pain possible’. This led to confusion for some patients as they associated 0 with ‘worst pain possible’ and 10 with ‘no pain at all’. Patients (20.4%) also reported problems with translating a feeling like pain into a number. Problems with the subjectivity and personal experience of pain was mentioned by 13.6% of the patients, 10.7% mentioned problems with variations in pain during the day, and the remaining 17.8% was due to missing data or patients who could not answer the question.

Female patients stated significantly more often than male patients that it was difficult for them to give a pain score (P < 0.01). Patients with non-malignant pain experienced significantly more problems than patients with malignant pain (P < 0.01), and patients from hospital B reported significantly more problems than patients from hospitals A and C (P < 0.001). Age, education, pain duration, care setting and pain intensity had no significant impact on experienced problems.
DISCUSSION AND CONCLUSIONS

Feedback from patients about their pain intensity is the backbone of pain assessment. Although nurses are aware that patients are the most accurate judge of pain intensity, they do not frequently use pain ratings in daily practice.

Nurses’ compliance and opinion

The present study shows that it is possible to implement daily pain assessment in clinical practice. During a period of six months, the nurses’ overall professional compliance was 73.9%. Nurses more consistently assessed pain in the morning (85.1%) than in the evening (63.6%). Professional compliance was 86.6% for once daily assessment of pain. These results are in accordance with the professional compliance of 90% reported by Bookbinder et al.19

Nurses had a positive attitude towards daily pain assessment and the majority wanted to continue assessing pain on a daily basis, thus daily pain assessment was valued positively by nurses. Furthermore, daily pain assessment proved to be feasible: daily pain assessment easily fitted in with nurses’ daily routine and did not take additional time, as nurses incorporated this task into the control of vital signs. Asking patients about their pain was not difficult for nurses, whether patients were in pain or not. Almost half of the nurses preferred asking for the present pain intensity twice a day. Finally, improvement of communication with colleagues and physicians was reported by 40% of the nurses. Other advantages reported by nurses are: better insight in patient’s pain, better pain management, and paying more attention to patient’s pain. However, nurses reported a few obstacles with daily pain assessment. In the opinion of nurses, it is not easy for patients to give a pain score, which is substantiated by 41.3% of the patients. A second obstacle is the lack of attention of physicians to patients’ pain scores. Because this was a study conducted with nurses, physicians were not trained like nurses and were not directly involved in the implementation process. This may explain why physicians did not make optimal use of daily pain assessment. Francke et al.,43 also found a limited interest amongst physicians in the outcomes of nurses’ pain assessments and recommended to make clear arrangements between nurses and physicians on how pain scores are to be used in an interdisciplinary pain policy. Therefore, we suggest to educate and instruct physicians too in the use of pain assessment.41,44

Because this was a multicenter study in three hospitals on nine nursing wards, we were able to examine differences between care settings (surgical versus medical wards) and hospitals. Nurses from the surgical wards were less compliant in the evening and were less positive about daily pain assessment compared to nurses from medical wards. This is in
agreement with Francke et al., 45 who also reported that, in comparison with nurses on medical cancer wards, surgical cancer nurses participated less in educational activities on pain-related topics and were less involved in specific pain policies. In a study of Rawal et al.,36 the use of a visual analogue scale in different care settings ranged from 7% (surgical gynecology) to 29% (medical gynecology).

It appears that surgical nurses have a different attitude towards pain and pain assessment than medical nurses. This can be related to differences in the prevalence of pain and differences in pain duration between the two care settings. On surgical wards, almost all patients have acute postoperative pain which will decrease after a few days. On medical wards, less patients are in pain and the majority of patients with pain have chronic pain. Patients with acute pain46 give more behavioral cues when they are in pain than patients with chronic pain.12 Thus, nurses on surgical wards might feel less compelled to ask patients about their pain, as they feel they already know which patients are in pain. More research is needed to study the differences between medical and surgical settings. It might be that different educational programs for nurses working on surgical and medical wards should be developed.

A paradoxical finding was the higher professional compliance of nurses in hospital B with daily pain assessment and their less positive attitude toward daily pain assessment compared with the nurses from the other two hospitals. During the study there was a reduction in staff in the evening shift, which meant that the second assessment was an extra burden for nurses working during the evening shift and probably led to decreased motivation. This suggests that it is very important to appraise beforehand the characteristics and resources of a potential hospital or nursing ward and the characteristics and requirements of the proposed innovation, as this might affect successful implementation.47 In retrospect, it would have been better to discontinue the pain assessment in the evening in hospital B.

Patients' opinions

The third research question was: what is the opinion of patients about daily pain assessment and what are the difficulties patients experience with giving a pain score? In general, patients value being asked about their pain twice a day. Although only one patient failed to give a pain score during the interview, more than 40% of the patients expressed some difficulties with giving a pain score. These data are consistent with previous research from Paice and Cohen,32 De Wit and Van Dam,18 Jensen et al.,34 and Kremer31 et al. concerning the patient’s problems to complete the NRS. The present study differs from the results mentioned above in that it also examined the difficulties patients experienced with completing the NRS as well as the factors influencing these difficulties. Primarily, patients
mentioned problems with the scale itself, namely that they were uncertain about the distance between numbers and confused about the term 'school marks' in the instruction. Based upon these findings a more elaborate instruction program for patients has been developed taking into account the problems patients have with giving a pain score. Jensen et al. found that age was not correlated with inability to complete the NRS. In this study, the difficulties of patients were independent of age, education, pain duration, pain intensity and care setting, but were related to the type of pain (non-malignant versus malignant pain) and the gender of the patient. More research is needed to identify factors which inhibit the use of a pain score by patients.

In summary, it can be concluded from this multicenter study, that daily pain assessment is feasible in clinical practice and is valued by both patients and nurses. When one decides to implement daily pain assessment, it is necessary to attune the implementation protocol to the needs of the specific setting.

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