Pain Assessment and Management in Surgical Cancer Patients: Pilot and Evaluation of a Continuing Education Program

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ABSTRACT

In a pilot study, a continuing education program on pain assessment and management was implemented and evaluated. Questionnaires were completed by the nurse participants at the beginning, the end, and 2 months after the end of the pilot program. After the pilot program, participants reported having engaged in qualitatively improved psychosocial pain-reducing interventions. Findings from the pilot study were used to develop a definitive program and questionnaires of a larger intervention study. This article illustrates the usefulness of initially conducting research on a small-scale basis.

Like medical and psychotherapeutic trials (Schwartz, Flamant, & Lellouch, 1980), continuing education studies may pass through several phases. In *phase I*, the plan for the program is tested with a small number of participants. If necessary, the plan for the program is adjusted on the basis of these experiences. In *phase II*, an indication of the effectiveness of the program is obtained, using a small group of participants, usually without a control group. Findings from this phase steer the decision whether or not to proceed to the next phase. In *phase III*, the program's effectiveness is investigated in a larger group of participants, using a design with a control group. After this phase, the decision is made whether or not to implement the program outside of research settings.

Phase III intervention studies are best known, whereas phase I/phase II studies are rarely reported in nursing. This is unfortunate, because starting a large-scale (often expensive) study is not advisable when there are insufficient indications that a program will work.

This article describes a phase I/phase II study, referred to as the pilot study, in which a program on pain assessment and management in surgical cancer patients was implemented and evaluated. This article demonstrates that it may be worthwhile to conduct research on a small-scale basis before starting a large intervention study. Therefore, methodological aspects and findings are emphasized.

BACKGROUND

Prior to the development of a pilot program on pain assessment and management, qualitative research among Dutch surgical cancer nurses and patients took place (Francke, 1991; Francke & Theeuwen, 1994). It was found that nurses usually did not assess pain systematically, sometimes felt powerless when giving psychosocial support, were unaware of the effectiveness of some nonpharmacological interventions and often gave too little pain medication. Patients appeared to be inhibited in expressing pain, which was sometimes reinforced by non-optimal interactions with nurses. The plan for the pilot program was developed using these findings.

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OBJECTIVES

The general objective of the pilot program was to improve nursing pain assessment and management practices by increasing knowledge and skills and by affecting attitudes. Implementation of the pilot program was intended to provide an idea of the extent to which the program was applicable and related to nurses' needs.

PILOT PROGRAM CHARACTERISTICS

The 13 nurses participating in the pilot program came from four Dutch general hospitals and one university hospital. Indirect recruitment of participants took place by nursing directors. Participants had to be active in surgical oncology departments of general hospitals and willing to participate in continuing education and research. The program educator had a professional background in nursing, psychotherapy and nursing education.

The pilot program consisted of six weekly 4-hour sessions and was held in a classroom of one of the participating hospitals. Major program components were the transfer of knowledge and skills and the mutual exchange of experiences concerning pain assessment and management. Main content themes were: What is Pain; Pain Assessment; Communication and Pain; Breathing and Pain; Massage and Pain; Pain Medication; and Working Together in the Interests of Surgical Cancer Patients in Pain.

The educational method used was "confluent education" (Brown, 1990; Francke & Erkens, 1994), a method strongly emphasizing the importance of the integration of the "learning of the head" with the "learning of the heart." Other characteristics of "confluent education" are the emphasis on creating readiness to learn and the emphasis on taking responsibility for applying what is learned.

At the beginning of each session, learner readiness evolved through a group conversation. The participants shared their experiences of the last week, with respect to what was learned in the previous session. They also shared what they wanted to learn in the current session. Based on this initial discussion the educator made a choice to continue learning either in a cognitive or more affective way.

An important advantage of starting in the affective domain is that this could create a "hunger for knowledge" (Francke & Erkens, 1994). Therefore, when participants did not show a preference, the educator started to work in the affective domain. This was done, for example, with questions such as "Do you have any experience with this theme?" and "Are you willing to share your experiences?" Subsequently, often a practical exercise or role play was performed. In the cognitive domain, a particular theme was often dealt with by a lecture or an audiovisual presentation. At the end of each session, the aspect of "taking responsibility" received attention. By looking back on that particular session and also by taking stock of what the participants intended to use, these evaluation moments were used to form a bridge between theory and practice and between the program and the hospital.

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Study Objective

Effects of the pilot program were evaluated by the nurse participants. The intention was to obtain indications of the program's effectiveness for making a grounded decision whether to initiate a controlled intervention study for a larger group of nurses as well as for patients.

Research Questions

The following questions were formulated:

1. Does the pilot program affect frequencies, duration and quality of nurses' psychosocial pain-reducing interventions?
2. Does the pilot program affect nurses' pain assessments, supplementary nonpharmacological interventions and knowledge and attitude concerning pain management?

With respect to question 1 it was expected, on the basis of studies on the effects of training in psychosocial skills (Grond & Visser, 1979; Pool, 1983), that participants would report more frequent psychosocial interventions after the program, but that changes in scores would be fairly small. Frequencies of psychosocial nursing interventions are in general high (Maes,

1988), and a continuing education program would probably have a minor effect on this outcome. Larger positive effects were expected with respect to duration and quality of psychosocial interventions. It may be assumed from earlier research (Maes, 1988) that nursing psychosocial interventions, such as brief conversations at a patient's bedside, are usually rather frequent, but at the same time quite short. For this reason, lengthening of duration would be interpreted as a positive effect.

With respect to question 2, participants were expected to report more frequent pain assessments and nonpharmacologic interventions. It was also expected that participants would show positive changes in knowledge and attitude regarding pain management.

METHODS

Due to the exploratory nature of this pilot study a pretest-posttest design without a control group was used. There were three measurement periods: at the start of the pilot program (M1); at the end of the pilot program (M2); and 2 months after the pilot program (M3).

In M2, effects of the program were measured in ten of the thirteen participants. Two participants were ineligible for evaluation because they did not finish the program (due to personal reasons). One participant was ineligible because she did not entirely satisfy the inclusion criteria. In M3, effects were measured in nine participants; one of the participants did not send in the questionnaires in that period.

Participants reacted on the first adapted version of the Therapeutic Behavior Scale (Francke, 1991). This questionnaire is an adaptation of the Therapeutic Behavior Scale (Therapeutisch Gedragsschaal), constructed and examined for validity and reliability by Pool (1983). The first adapted version consisted of 30 items and measured frequencies, duration, and quality of the provision of information, psychosocial support and stimulation of autonomy. These interventions can indirectly have a pain-reducing effect (Pool, 1983; Shade, 1992) and are thus indicated as psychosocial pain-reducing interventions.

On Pool's original scale respondents had to rate how often they performed a particular intervention, by reacting with "very often," "often," "sometimes," "rarely" or "never." Since a response shift may occur as a consequence of participating in a program, positive effects may not always be manifested in the scores (Sprangers, 1988). To reduce this type of interference, the first adapted version of the Therapeutic Behavior Scale asked for precise frequencies. This is illustrated in the Figure.

Participants also filled in a conceptual self-report questionnaire, developed for the purpose of this study. The 15 questions of the conceptual questionnaire were based on relevant pain literature (McCaffery & Beebe, 1989; NVBP, 1990) and concerned nurses' pain assessments, supplementary nonpharmacologic interventions, and knowledge and attitudes concerning pain management. Based on the reactions of respondents in the pilot study, this questionnaire would be further developed. After that, in the large-scale intervention study, validity and reliability would be assessed.

Considering the small sample and the exploratory character of this pilot study, only descriptive statistics have been used for analyzing the data from the questionnaires.

EFFECTS OF THE PILOT PROGRAM

By reacting on the conceptual self-report questionnaire, respondents showed positive effects on their pain assessment practices, nonpharmacologic interventions like relaxation, distraction and massage, attitudes and knowledge. However, since this questionnaire was in a preliminary state, it does not seem useful to discuss the scores in great detail. For this reason, attention will be centered on the effects on psychosocial pain-reducing interventions measured by the first adapted version of the Therapeutic Behavior Scale.

Frequencies of Psychosocial Pain-Reducing Interventions

The majority of respondents in M2 and M3 showed an increase in reported frequencies of psychosocial pain-reducing interventions (Table). As expected, changes were rather moderate: in M2 as well as in M3, the average increase in reported frequencies was less than 0.2 on a scale of 1 to 5. Our expectation that as a consequence of the program the reported frequencies would increase somewhat, was therefore supported.

Duration of Psychosocial Pain-Reducing Interventions

A measure of change in duration of psychosocial pain-reducing interventions was constructed as follows: the number of items (of a total of 30 items) on which a respondent reported spending less time was subtracted from the number of items on which a respondent responded spending more time. In period M2, as well as in period M3, the average score was +12. On the basis of the individual scores it appeared that all 10 respondents (Table) reported spending more time on psychosocial pain-reducing interventions after the pilot program than before. Thus our

TABLE
Effects of the Pilot Program on Nurses' Psychosocial Pain-Reducing Interventions by Periods and Number of Respondents

	Psychosocial Pain-Reducing Interventions											
	Frequencies				Duration				Quality			
Period	**M2**		**M3**		**M2**		**M3**		**M2**	**M3**		
Effects	yes	no	yes	no	yes	no	yes	no	–	yes	no	
Number of respondents	7	3	6	3	10	0	9	0		9	0	
Total number of respondents	**10**		**9**		**10**		**9**			**9**		

FIGURE
Adapted Version of the Therapeutic Behavior Scale

To inform patients about what they can do to avoid (worse) pain.

A. The average number of times I practice this intervention is:
- ___ × in a working day (8 hrs)
- ___ × in 5 working days
- ___ × in 25 working days
- ___ × in 50 working days
- ____ never (check)

Also different from the original scale was that the adapted version asked for duration and quality.

B. Each time I practice this intervention I spend:
- [ ] less time than before the program
- [ ] the same amount of time as before the program
- [ ] more time than before the program

C. Is the way you practice now different from the way you did before the program?
- [ ] yes
- [ ] no

If yes, briefly describe the change

expectation of positive effects on reported duration was supported.

Quality of Psychosocial Pain-Reducing Interventions

Information regarding quality was only requested in period M3; respondents' reactions in M2 concerning frequencies and duration had indicated a need to assess quality as well. Changes which indicated a quality increase were reported by all respondents in M3 (Table): on average in 9 of the 30 items. Changes which would indicate a quality decrease were not reported. The researcher's evaluations, whether reported changes indicated a quality increase or decrease, were compared with an external researcher's independent assessments. Their evaluations agreed in 100% of the cases. In conclusion, our expectation that the reported quality of psychosocial interventions would increase was also supported. "Being more patient-oriented" was the most frequent written description when changes occurred. The following remark from one of the respondents gives an illustration of what is meant by a more patient-oriented approach.

> That I now ask patients what they would like to know, what their questions are, and that I then try to tune into these questions the best I can. Often these questions concern something like: "I'm afraid it will be very painful, and what do I have to do then?"

IMPORTANCE OF THE PILOT STUDY

The pilot study steered the decision to continue the project. As presented above, nurse participants reported positive effects, particularly on the duration and quality of their psychosocial pain-reducing interventions. On the basis of these results, it seemed justified to continue the project with a controlled intervention study in which a larger group of nurses and patients were involved.

The pilot study also provided information about the extent to which the questionnaires were feasible and usable. With regard to the first adapted version of the Therapeutic Behavior Scale, respondents had little difficulty interpreting the questions and answer categories. Accordingly, the second adjusted version, which would be used in the large-scale research study, is almost similar to the first adjusted version. The conceptual self-report questionnaire with 15 questions concerning nurses' pain assessments, nonpharmacologic pain-reducing interventions, knowledge and attitudes were also comprehensible, but seemed to be somewhat incomplete to get a valid picture. For this reason, in the definitive questionnaires used in the controlled intervention study, other items are also integrated, e.g., items derived from the recent questionnaires of Dalton (1989) and McCaffery et al. (1990).

Furthermore, the pilot gave insight into which aspects of the program needed adjustments. The educator felt that she had a rather isolated job. Especially when working in the affective domain, she experienced a need for closer professional cooperation and

feedback. On the basis of these experiences, it was decided to involve two educators in the definitive program of the large intervention study.

In the group evaluation during the last session, nurse participants suggested changing the duration of the program. On the one hand they thought a 4-hour session was too long for remaining attentive. On the other hand, participants considered six sessions too short; they were eager to learn more about the subject of pain assessment and management. Therefore, it was decided that the definitive program would consist of eight sessions, lasting 3 hours each. Participants also advised to implement the definitive program in nursing teams. This would make it easier to share learning experiences with close colleagues and to apply new knowledge and skills in practice. This advice was followed as well.

On the basis of participants' reactions it was also decided for the definitive program to pay even more attention to learner readiness regarding delicate subject matters. Some participants expressed difficulty with practicing certain nonpharmacologic techniques. For instance, during foot massage practice, some participants seemed to have a certain fear of touching and made comments such as, "That is not my sort of thing." Therefore, it seemed a good idea to have participants in the definitive program get better acquainted with massage, and to allow the extent to which massage is practiced depend on participants' readiness.

CONCLUSION

As is inherent to the nature of this type of study, the pilot study presented has provided an indication, but no "hard" evidence, of program effectiveness. The controlled follow-up study will have to show whether the program has a positive impact on nurse and patient outcomes.

Nevertheless, it should already be clear how useful pilot studies are. For instance, justification of a large intervention study could be provided to nursing directors, funders, and policy-makers by presenting the indication of effects gained in the pilot study. Furthermore, questionnaires could be further developed and the program plan perfected by the reactions of participants in the pilot study. Building on the results of a pilot study may reduce the chance of a large and consequently expensive and labor intensive study being prematurely halted or having unfounded outcomes.

REFERENCES

Brown, G.I. (1990). *Human teaching for human learning: An introduction to confluent education.* New York: The Gestalt Journal.

Dalton, J.A. (1989). Nurses' perceptions of their pain assessment skills, pain management practices, and attitudes toward pain. *Oncology Nursing Forum, 16*(2), 225-231.

Francke, A.L. (1991). *Verpleegkundigen, chirurgische kankerpatiënten en pijn.* Unpublished report. Rotterdam: Helen Dowling Institute.

Francke, A.L., & Erkens, M.J.M. (1994). Confluent education: An integrative approach for (nursing continuing) education. *Journal of Advanced Nursing, 19,* 354-361.

Francke, A.L., & Theeuwen, I. (1994). Inhibition in expressing pain. A qualitative study among Dutch surgical cancer patients. *Cancer Nursing, 17*(3), 193-199.

Grond P.J.N., & Visser A.Ph. (1979). Therapeutisch gedrag van verpleegkundigen en het effect van een gesprekstraining. *Tijdschrift voor Ziekenverpleging,* 32, 307-315.

Maes, H. (1988). *De communicatie tussen patiënt en student-verpleegkundige: Een exploratief onderzoek.* Unpublished doctoral dissertation. Louvain: Catholic University.

McCaffery, M., & Beebe, A. (1989). *Pain. Clinical manual for nursing practice.* St. Louis: C.V. Mosby.

McCaffery, M., Ferrell, B.R., O'Neil Page, E., Lester, M., & Ferrell B. (1990). Nurses' knowledge of opiate analgesics and addiction. *Cancer Nursing, 13*(1), 21-27.

Nederlandse Vereniging ter Bestudering van Pijn (NVBP, 1990). J.A. Schulkes- Van der Pol, (ed.). Pijn en pijnbehandeling bij de patiënt met kanker. Amsterdam: PAL.

Pool, J.J. (1983). *Sociaal-therapeutisch gedrag van verpleegkundigen.* Dissertation. Amsterdam: Free University.

Schwartz, D., Flamant, R., & Lellouch, J. (1980). *Clinical trials.* London: Academic Press.

Shade, P. (1992). Patient-controlled analgesia: Can client education improve outcomes? *Journal of Advanced Nursing 17,* 408-413.

Sprangers, M. (1988). *Response shift and the retrospective pretest. On the usefulness of retrospective pretest-posttest designs in detecting training related response shift.* Dissertation. The Hague, The Netherlands: Institute for Education Research SVO.