

CHAPTER 3

RESEARCH METHODOLOGY

Research Approach

This study employed the action research approach. As the researcher and the participating nurses needed to work together to bring changes to the nursing practice, the action research approach, which Towell and Harris (1979) stated as "...builds on peoples own motivation to change, gives authority to a change program, offers support and resources to those trying to develop new ways of working" (cited in Webb, 1989 p.403) was thought to be the ideal method.

Setting

The study was conducted in one of the orthopedic wards in Hospital University Science Malaysia (HUSM). HUSM is situated in a state in the northeast of Malaysia. It is a teaching hospital where medical and nursing students from the University Science Malaysia have clinical practice and also is a referral hospital that serves for those people staying in the east coast of Malaysia. The acute orthopedic ward has 24 beds. Sixteen beds were allocated for male patients and eight beds for female patients. The ward admitted about four to eight post-operative patients per operating day from the recovery room. The types of post-operative patients nursed in this ward were orthopedic, traumatic, plastic and orthopedic cancer patients. The plastic and orthopedic patients were transferred to the ward after 24 to 48 hours being nursed in the intensive care unit. Emergency trauma cases from the accident and emergency

unit were also admitted to the ward. A head nurse managed the ward and there were 12 nurses working in this ward although one of the 12 nurses was assigned to work in a different ward during the study period. Three to four nurses were rostered to work the morning shift, two to three nurses worked the evening shift and two nurses the night shift. More nurses were rostered in the morning shift as most of the workload, for example dressing; indenting medication, discharging patients and doctors rounds was during the morning shift. Nursing care in the evening and night shifts was focused on the care of postoperative patients. The orthopedic doctors were divided into two units with three to four specialists in each unit. The doctors did their patient rounds on Monday for Unit One doctors and Tuesday for unit Two doctors.

Participants

1. Nurses

Nurses who participated in the study were selected using convenient sampling with the following inclusion criteria:

- 1.1 Registered nurses
- 1.2 Permanent nurse of the ward
- 1.3 Willing to participate in the study

2. Patients

2.1 Patients were interviewed regarding their satisfaction with pain management before the study was begun. These patients were selected using convenient sampling with the following criteria:

2.1.1 Experiencing acute postoperative pain

2.1.2 Being cared for in the orthopedic ward for 24 to 72 hours after surgery

2.1.3 Not recruited by the Acute Pain Service (APS) team into their study

2.1.4 Willing to participate in the study

2.2 Patients were selected during the study process using convenient sampling.

The patients who were selected was transferred to the ward from operating theatre and met the same criteria as above.

The researcher's role

In this study, the researcher had to play a few roles in order to facilitate changes. Some of the roles were:

1. **Facilitator:** The researcher helped to facilitate the group to work together in understanding the situations and make the group aware of that they could improve their practice in pain assessment. As a facilitator, the research would help the nurses to use the Pain Assessment Protocol and guide them when they have any problems in implementing the protocol and the researcher also facilitate the group to understand the importance of improving their practice and to have rationale for their actions.

2. **Information seeker:** The group were not familiar with the resources available in the library of the University Sains Malaysia, the researcher would seek information for the group if they requires information to help them plan for changes during the implementation process. This helps the group to save time and able to concentrate on the process of implementing change.

3. **Nursing staff:** The researcher not only participate as an observer but also work as part of the nursing staff on the ward, sharing some of the workload with the nurses

especially when the ward were busy. The researcher would take part in caring for some of the postoperative patients transferred to the ward and would carry out the postoperative care to the patients example taking postoperative observations, providing analgesics to patients and other nursing activities. This provide the researcher the researcher the opportunity to understand better the nurses activities and obstacles they faced when they commented that some nursing activities could not be done as prescribed when the ward were busy.

Preparation Phase

The researcher met with the nursing administrator of HUSM to discuss the study. The head nurse of the acute orthopedic ward was then approached as suggested by the nursing administrator. Ways of improving pain assessment practice and documentation using the technical collaborative approach of action research was discussed with the head nurse. A letter was sent to the Director HUSM for permission to conduct this study. After the Director of HUSM granted permission, the study proposal was sent to the ethical committee for approval. The Head of Orthopedic department was informed of the study after approval from the ethical committee.

Ethical Considerations

Nurses in the ward were approached and asked if they were willing to participate. The purpose of the study, the role of the participating nurses, the assurance of the confidentiality of the nurses who participated, and the right of the participating nurses to withdraw from the study were explained to the nurses before

they gave consent. After the nurses understood, verbal consent was obtained from each participant.

Patients who were admitted to the ward after their operations were approached and the purpose of the study, the assurance of their confidentiality, and the right to participate and withdraw from the study anytime they wanted were explained to the patients. The study purpose was also explained to some of the patients' relatives who accompanied them during their stay in the ward. When the patients understood, verbal consent was obtained. Patients who were still drowsy when they were transferred to the ward were not approached immediately after the transfer. When the effect of the anesthesia wore off, they were approached and the same explanation was given and consent obtained before they were recruited into the study.

The Study Phase

The study process was divided into four phases, the reconnaissance phase, planning phase, action and observation phase and the reflection phase.

1. The reconnaissance phase

Following approval from the ethical committee, the researcher had an informal discussion with the ward sister and nurses to get information about the current practice in pain management and also to seek understanding of the clinical nursing practice, nursing management and atmosphere of the ward. Interviews were conducted with nurses using open-ended questionnaires (see appendix A) to determine their experience in caring for post-operative patients and their pain management experience. Participant observation was also done at this time to get

more information about the nursing practice and nursing management, and interactions among nurses, patients, doctors and relatives. Patients' notes and nursing reports were also reviewed for information regarding post-operative pain management. Ten patients were interviewed to get information about their satisfaction with the current practice of pain management.

2. The Planning Phase

2.1 Development of Pain Assessment Protocol

2.1.1 Developing a pain assessment tool

Issues identified from participant observation, nursing interviews and review of the nursing documents and charts during the reconnaissance phase were discussed with the nurses to raise their awareness that their current practice could be improved. To improve pain assessment practice, the development of a Pain Assessment Protocol was required to guide the nurses in their practice. The development of the Pain Assessment Protocol was started with developing a pain assessment tool.

Findings from the literature review of pain intensity rating tools (Appendix B), pain assessment chart (Appendix C), pain assessment tool (Appendix D), vital signs chart (Appendix E), the Short-Form McGill Pain Questionnaire (Appendix F), and the nursing chart used in the care of postoperative patients (Appendices G, H, I and J) were presented to the nurses and a discussion on the development of a pain assessment tool was held. A one-page tentative assessment tool with Numerical Rating Scale and Face Rating Scale (Fig.2) was developed with the consideration that the tool would be easy to use, simple and did not require too much

time for the nurses to record, as desired by the nurses. The one-page pain assessment tool consisted the patient's name, diagnosis, date of admission, date of surgery, registration number, age and type of surgery. There were also columns for nurses to record date of assessment, time of assessment, pain intensity, blood pressure, pulse, respiration, time and dose of analgesics given, nurse's comments, and nurse's initials.

2.1.2 Using the pain assessment tool

The following strategies were used to ease the implementation of pain assessment protocol throughout the periods of three months after group discussion.

Starting small: It was planned that initially the researcher and one of the participating nurses would use the pain assessment tool on one post-operative patient, followed by two other nurses who were rostered for the evening and night shifts and then later another two nurses were recruited, bringing the total number of nurses to five.

Raising awareness: Nurses were asked about the pain management provided by the APS team and the used of pain intensity scale to assess patients pain. Nurses were asked about their experience using the pain intensity scale to assess for postoperative pain and if it was possible to use for all postoperative patients beside the selected patients under the APS team. The pain assessment tool was to be kept in the patient's folder for other participating nurses to continue using. This also helps to raise awareness among the some of the doctors who commented that the use of pain assessment tool would help in the pain management of postoperative patients. The planning of the participant nurses to work on different shift also helped to raise awareness among other nurses who were not participating in the study and this

provide support for the implementing process when they realized that the use of pain assessment tool did not impinge on their routine care for their postoperative patients.

Being there: The researcher spent six to eight hours in the ward working with the nurses while doing participant observation and participate in the care of postoperative patients when the nurses were busy. The hours spent with the nurses helped the researcher to be accepted as one of the nurse working together with them and was able to share experiences with the nurses about problems faced in trying to change practices. At one point, nurses suggested to the researcher to helped them in convincing their nursing administrators the need for changes in some of their nursing practice besides the practice of pain assessment.

3. The action and observation phase

This phase took two months. The implementations of the action and observation phase were conducted in two cycles. The first cycle was the initial use of the pain assessment tool with the Numerical Rating Scale (NRS) and the Face Rating Scale (FRS). Three participant nurses used the pain assessment tool with the NRS and the FRS on postoperative patients who were transferred to the ward after their operation. Nurses approached the patients and the purpose of the study was explained to them to get their consent for participation in the study. The pain assessment was explained to the patients and they were asked to give a score to their pain. The assessment was done simultaneously with the observation of the vital signs for postoperative care. Nurses recorded their assessment on the pain assessment tool. The first cycle of the implementation phase using the pain assessment tool with the NRS and FRS was conducted for one month. Information regarding the implementation process was

gathered from participant observation and interviews of nurses and patients. The information gathered was used to revised plan for improvement of the pain assessment tool. The second cycle of the implementation of the action and observation phase was conducted for another one month and the same approach of recruiting patients was used. During the second cycle two more nurses volunteered to participate in the study. The new nurses were scheduled to work with one of the nurses who participated in the study during the first cycle. They were informed of the process of using the pain assessment tool.

4. The reflection phase.

In this phase, participants experienced in using the pain assessment tool were recalled. Discussions were held to discuss problems encountered during the implementation process in order to revise plans for improvement of the pain assessment tool to be implemented in the next cycle. Besides discussions of problems encountered, issues of what help them during their implementation of the pain assessment tool were also discussed and also used in the planning for the next cycle. Figure 3 represents the action research cycle for the development of the Pain Assessment Protocol.

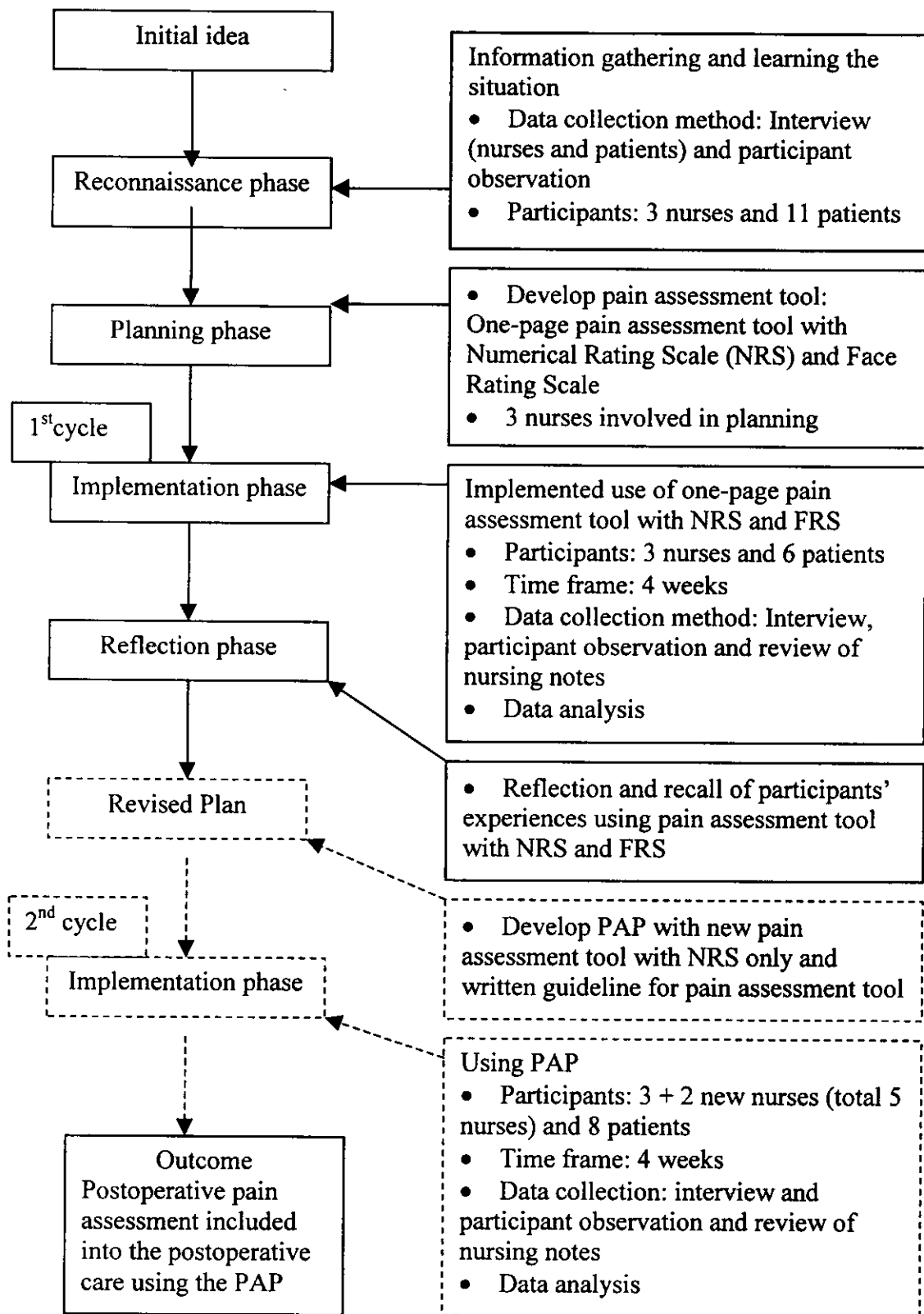


Figure 3. Action research cycle

Data Collection

Data in this study were collected using the following methods:

1. An interview that lasted 30 minutes to one hour. The interviews were focused on the nurses' experience of their current practice of pain assessment and after using the Pain Assessment Protocol. The interviews were recorded and written transcriptions were made. During the implementation of the Pain Assessment Protocol, interview was done at intervals. The first interview was when the participating nurses had completed assessing one patient, followed by a second interview after assessment of the second patient and a third interview after the nurses completed assessment of their fourth patients. The interviews were conducted with each nurse until there were no more new concerns mentioned by the nurses and the nurses themselves stated that they were confident in using the Pain Assessment Protocol and felt satisfied themselves with the protocol and could incorporate the assessment into their postoperative care.

2. Participatory observation was used to collect data before and during the use of the Pain Assessment Protocol. The researcher spent about six to eight hours per day for two weeks to understand the situation before the implementation of the study and another 3 months during the study process.

3. The researcher kept a reflective diary to write down her experiences during the study process.

4. A chart audit of nursing reports and patients' notes was undertaken to get more data regarding pain management and nursing intervention.

5. Patients were interviewed for 20 to 30 minutes to evaluate their satisfaction with the practice of pain management using selected questionnaires modified from the Patient Outcome Questionnaires of the American Pain Society Quality of Care Committee (1995) see Appendix K.

Data Analysis

Data collected from the interviews were transcribed. The transcribed interviews were then translated into English as the interviews were done in Bahasa Malaysia. The content of the transcribed interviews was coded and comparative analysis of the content was conducted to develop themes. The identified themes were then used to plan and develop the Pain Assessment Protocol that consisted of a pain assessment tool and a guideline for pain assessment and documentation. Simple statistics using frequency was used to describe the nurses' characteristics and patients' satisfaction with pain management.