



EXPECTATIONS OF SURGICAL WARD NURSES FOR A PAIN SPECIALIST NURSE

A Quantitative Study

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ABSTRACT

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This Bachelor's thesis was executed in co-operation of Pirkanmaa Hospital District (PHD) between autumns 2010 and 2011. The purpose of this thesis was to map the expectations of surgical ward nurses for a pain specialist nurse. The objective of this thesis was to provide Pirkanmaa Hospital District with information about the expectations of surgical ward nurses toward a pain specialist nurse.

Quantitative research method was chosen for this thesis. The theoretical section of this thesis discusses clinical expertise in nursing and clinical nursing expertise in postoperative pain management. The theory part of this thesis was conducted with a literature review.

The research section of this thesis maps the expectations of surgical ward nurses for pain specialist nurse. The data for the research section of the thesis was collected with a quantitative, structured questionnaire utilizing a Likert's scale of four agreement categories. The data was collected from registered nurses working in five different surgical wards in PHD during March 2011. Altogether 64 completed questionnaires were received. Questionnaire results were analyzed by using descriptive statistics.

The research results show that the surgical ward nurses appreciate and utilize the expertise of pain specialist nurse. Especially the education provided by the pain specialist nurse was viewed important amongst the respondents.

Key words: Clinical nurse specialist, postoperative pain management, acute pain services, postoperative pain

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Tämä opinnäytetyö on toteutettu yhteistyössä Pirkanmaan sairaanhoitopiirin (PSHP) kanssa syksyjen 2010 ja 2011 välillä. Opinnäytetyön tarkoituksena oli kartoittaa kirurgisten vuodeosastojen sairaanhoitajien odotuksia kipuhoitajatoiminnalle. Tavoitteena oli tuottaa tietoa Pirkanmaan sairaanhoitopiirille kipuhoitajatoiminnasta kirurgisten vuodeosastojen sairaanhoitajien kokemusten pohjalta.

Opinnäytetyö toteutettiin kvantitatiivisena tutkimuksena. Teoreettinen osa käsittelee sairaanhoitajan asiantuntijuutta sekä hoitotyön asiantuntijuutta postoperatiivisessa kivunhoidossa. Teoriaosa toteutettiin kirjallisuuskatsauksena.

Opinnäytetyön tutkimusosa kartoittaa kirurgisten vuodeosastojen sairaanhoitajien odotuksia kipuhoitajatoiminnalle. Tutkimusaineisto kerättiin kvantitatiivisella, strukturoidulla kyselylomakkeella 4-pisteistä Likertin asteikkoa hyödyntäen. Aineisto kerättiin Pirkanmaan sairaanhoitopiirissä viidellä eri kirurgisella vuodeosastolla työskenteleviltä sairaanhoitajilta maaliskuussa 2011. Täytettyjä kyselyitä kertyi 64 kappaletta. Kyselytulokset käsiteltiin tilastollisesti.

Kyselytulokset osoittavat, että kirurgisten vuodeosastojen sairaanhoitajat arvostavat ja hyödyntävät kipuhoitajan asiantuntijuutta leikkauspotilaiden kivunhoidossa. Vastaajat kokivat erityisen tärkeäksi kipuhoitajan tarjoaman koulutuksen.

Asiasanat: Asiantuntijasairanhoitaja, postoperatiivinen kivunhoito, acute pain service -toiminta, leikkauksen jälkeinen kipu

TABLE OF CONTENTS

1 INTRODUCTION.....	5
2 PURPOSE AND OBJECTIVE OF BACHELOR'S THESIS	7
3 THEORETICAL FRAMEWORK.....	8
3.1 Expertise in Nursing	8
3.1.1 Advanced Nursing Practice	8
3.1.2 Benner's From Novice to Expert-Model	10
3.1.3 Clinical Expertise in Nursing.....	12
3.2 Clinical Nursing Expertise in Postoperative Pain Management.....	17
3.2.1 Pain	17
3.2.2 Acute and Postoperative Pain	17
3.2.3 Quality Standards for Postoperative Pain Management.....	19
3.2.4 Acute Pain Services.....	24
3.2.5 Pain Specialist Nurse.....	26
4 METHODOLOGY.....	29
4.1 Literature review	29
4.2 Quantitative Research and Questionnaire.....	31
4.3 Research Process	32
4.4 Data Collection	34
4.5. Sample.....	34
4.6 Data analysis.....	34
5 ETHICAL CONSIDERATIONS	36
6 RELIABILITY AND VALIDITY	39
7 LIMITATIONS.....	40
8 RESULTS.....	41
8.1. Availability of APS & Pain Specialist Nurse.....	44
8.2 The Pain Specialist Nurse's Expertise.....	48
8.3 Educational Aspects.....	52
9 DISCUSSION.....	59
9.1 Acute Pain Services & Availability	59
9.2 Expertise of a Pain Specialist Nurse.....	61
9.3 Educational Aspects.....	63
10 CONCLUSIONS AND RECOMMENDATIONS	65
REFERENCES.....	67
APPENDICES	Virhe. Kirjanmerkkiä ei ole määritetty.

1 INTRODUCTION

Finnish health care is facing challenges and changes of many kinds created by, e.g. an aging population, increased demands and costs of health care and a shortage of proficient nursing personnel (Arminen et al. 2008, 24; Fagerström 2009, 269; Hopia, Räsänen, Lipponen, Liimatainen 2010, 53). A shortage of physicians has resulted in new and more clinically demanding activity models for nurses in many municipalities and organizations (Fagerström 2009, 269). Clinical expertise in nursing is one of the resolutions that aim to overcome these changes and challenges (Arminen et al. 2008, 24). Rose, All and Gresham (2002, 2) claim that nursing is a vital part of health care, and through the advanced practice roles nursing can provide its greatest influence on the areas of cost containment, performance improvement, access to care, and client satisfaction.

The role of a clinical expert is new and little studied in Finland. The clarification of clinical expert role and job description has been studied in the USA and UK, but confusions still exist about the clinical expert role (Bamford & Gibson 2000, 282). Clinical nursing experts work under various titles, e.g. clinical nurse specialist, advanced practice nurse, nurse practitioner, nurse consultant, advance nurse practitioner etc. (Daly & Carnwell 2003, 159; Zuzelo 2003, 361). Some of the terms mentioned above overlap both in clinical practice and in educational preparation, and especially the roles of clinical nurse specialist and nurse practitioner have been compared in literature (e.g. (Daly & Carnwell 2003, 159-167; Zuzelo 2003, 361-372). In this thesis the term 'clinical nurse specialist' is used to refer to a clinical expert in nursing. A prerequisite for a clinical expert both in Finland and abroad is a Bachelor's degree in nursing as a basic education and a Master's degree from a university or a university of applied sciences.

Postoperative pain management is a daily challenge in surgical wards. To ensure unanimous quality of postoperative pain management, quality standards and principles for postoperative pain management have been established. In order to reach these standards, Acute pain service teams (APS-teams) have been founded to guide, supervise and implement postoperative pain management. The core of APS is in the expert knowledge about pain management. Pain specialist nurses are a vital part of APS-teams as a partner of anaesthesiologist. (Warrén Stomberg & Haljamäe 2003, 211; Mann & Carr 2009, 81).

Pain specialist nurses are clinical nurse specialists with a specialty field of pain management. Other possible terms for pain specialist nurse can be found in the literature, and they include acute pain nurse and acute pain clinical nurse specialist. Pain specialist nurses' job descriptions have been researched earlier in Finland by Koivusalo (2005, 3). In the USA pain specialist nurse role has been studied, e.g. by Willens, DePascale & Penny (2010, 68). However, these researches were about pain specialist nurses' work and role in general. This thesis will have a more precise focus on pain specialist nurses' role in post-operative pain management and what nurses working with postoperative patients expect from the pain specialist nurses' role.

One ground for topic selection is authors' own interest in the topic. The authors find clinical expertise in nursing as an interesting option for professional development and recognize the universal role of pain management in nursing. The other ground is that the topic is working life-oriented. The topic was given by Pirkanmaa Hospital District (PHD), and this thesis was produced in the collaboration of PHD.

2 PURPOSE AND OBJECTIVE OF BACHELOR'S THESIS

The purpose of this Bachelor's thesis was to produce recommendations for the job description of pain specialist nurses working in PHD. In order to produce recommendations, a literature review was conducted and a quantitative questionnaire created. The literature review aimed to gather pre-existing research knowledge about clinical expertise in nursing and postoperative pain management. The quantitative questionnaire aims to map the expectations and opinions that nurses working in surgical units have about pain specialist nurses' work. The recommendations are based on the literature review and questionnaire results.

The objective of this thesis was to provide PHD information about the expectations that nurses in surgical units have toward pain specialist nurses' work. Based on the expectations, further research can be done in order to create a thorough job description for pain specialist nurses.

Research questions: 1. What is clinical expertise in nursing? 2. What is clinical nursing expertise in postoperative pain management? 3. What are the expectations for pain specialist nurses among nurses in surgical wards?

3 THEORETICAL FRAMEWORK

3.1 Expertise in Nursing

Expertise can be defined as a “special skill or knowledge that is acquired by training, study, or practice” (Collins Cobuild English Dictionary for Advanced Learners 2001). An Expert is “a person who has extensive skill or knowledge in a particular field”. A Specialist is defined as “a person who is an expert in a particular activity or subject”. (Collins New English Dictionary 2006.)

Nursing is “the practice or profession of caring for the sick and injured” (Collins New English Dictionary 2006). Nursing care involves promoting and maintaining health, preventing illnesses and alleviating suffering and is based on nursing science (Ethical Guidelines of Nursing, 1996).

3.1.1 Advanced Nursing Practice

In the United States of America, United Kingdom and Australia the term “advanced nursing practice” (ANP) is used to describe clinical expertise in nursing and the terms “advanced practice nurse” (APN) or “advanced practice registered nurse” (APRN) are used to describe clinical nursing experts (Elsom, Happell & Manias 2006, 56-59; Consensus Model for APRN Regulation: Licensure, Accreditation, Certification & Education 2008). All of the terms are umbrella terms including several advanced nursing practice roles and titles.

International Council of Nurses has created a definition of advanced nursing practice. Advanced nursing practice is defined as following:

A Nurse Practitioner/Advanced Practice Nurse is a registered nurse who has acquired the expert knowledge base, complex decision-making skills and clinical competencies for expanded practice, the characteristics of which are shaped by the context and/or country in which s/he is credentialed to practice. A master's degree is recommended for entry level. (International Council of Nurses, 2011.)

This definition is in accordance with findings made by Leppänen and Puupponen (2009, 39-40) and Delamaire & Lafortune (2010, 20-22) about the varying and evolving nature of advanced nursing practice.

A study by Delamaire & Lafortune (2010) describes advanced nursing practice in 12 developed countries, Finland among them. This study states that advanced nursing practice has the longest history in United States where the term nurse practitioner was used in 1965, also Canada and the United Kingdom have had advanced practice nursing for quite a long time. In Finland, indicated by Delamaire & Lafortune (2010, 20) there are no official titles for advanced practice nurses yet. Furthermore, despite the lack of titles for advanced practice nurses in Finland, collaboration and team work between nurses and physicians which is characteristic to advanced nursing practice has been a longstanding practice (Delamaire & Lafortune 2010, 20).

Leppänen and Puupponen (2009) have carried out a systematic literature review about advanced nursing practice and clinical nursing expertise. Based on their findings they conclude that advanced nursing practice is still a very unclear concept and definitions vary from country to country worldwide. They also bring up the idea that clinical nurse experts should not be seen as a homogenous group, but the variance in their job description according to an organization's needs should be acknowledged. (Leppänen & Puupponen 2009, 39-40.)

In Finland the legislation binds the health care professionals to continuously update and keep up their professional skills and development. The employer is obliged to provide the health care professionals with adequate education. (Laki terveydenhuollon ammattihenkilöistä 559/1994.) The law about specialized care also mentions that the hospital districts are responsible for providing education to health care professionals in order to maintain professional competence and continuing education as well as organizing research and development as a part of the function of hospital district (Erikoissairaanhoitolaki 1062/1989).

However, advanced nursing practice and clinical nursing expertise are not yet defined fully by legislation. Leppänen and Puupponen suggest that the job descriptions of advanced nursing practice demand to be defined by legislation to reach consistent guidelines for practice, qualifications as well as rights and responsibilities of advanced nursing practice roles. The job description of clinical nurse specialist should also be clearly defined in organizational level and the working tasks of clinical nurse specialists should emerge from the strategy and needs of organization. (Leppänen & Puupponen 2009, 41.)

3.1.2 Benner's From Novice to Expert-Model

Professor Patricia Benner has widely studied expertise and skill acquisition in nursing. Benner's (1984) novice-to-expert continuum has been used as a framework when trying to describe levels of clinical nursing expertise (Bobay, Gentile & Hagle 2009, 48). In her seminal work Benner (1984, 13) reports about the Dreyfus skill acquisition model which describes five levels of proficiency: novice, advanced beginner, competent, proficient and expert (Bobay et al. 2009, 48). Benner (1984, 294) states that expertise is "a hybrid of practical and theoretical knowledge". Experience is also emphasized as a salient part of expertise by Benner (1984, 32).

According to Benner (1984, 13) not merely the experience but also the ability to use past experiences as a framework and transform them into an inner model on how to act, is important for professional development. Benner understands expertise as the highest level of professional development. In Benner's viewpoint theoretical knowledge and clinical experience are connected in expert nurse's mind. However, since theory is always only a rough presentation of clinical reality, experience brings certain refinement to theoretical thinking and therefore enables intuitive approach to work. Nurses who are in the beginning of their careers (i.e. novices or advanced beginners) tend to rely on rules and theoretical knowledge strictly in order to manage. (Benner 1984, 20-25, 31-38.)

The work of a nurse at the expert level can be characterized intuitive, fluent and flexible and the work does not merely rely on principles (Benner 1984, 20-25, 31-38). Expert practice requires increased intuitive links between recognizing the important issues or problems in a situation and ways of responding to them. For example, the links between the patient condition and proper action are so strong that the focus shifts to ways of responding rather than problems seen. At this level nurses remain open to how the situation may develop or change and "their actions reflect an attunement to the situation". (Benner, Tanner & Chesla 2009, 137-138.)

After publishing *From Novice to Expert* (1984) Benner has continued to study skill acquisition and developing expertise. In later studies published in *Expertise in Nursing Practice* (2009, 7-9) she, Tanner and Chesla studied skill and its acquisition and what the expert acquires when they reach expertise. They claim that it is probably more likely to produce skilled coping behaviour with adequate experience without any theoretical knowledge. As an example they give animals who achieve their coping skills by trial-and-error learning. When considering such a complex skill as nursing, Benner et al. (2009, 7-9) state that it is probably impossible to learn to master nursing merely by trial and error and imitation without obtaining and using scientific, theoretical knowledge.

Further in their study Benner et al. (2009, 9) state that a high level of skill in an unstructured domain seems to require concrete experience in real situations, and since any individual has probably had more experience with certain types of situations than with others, a person can simultaneously be an expert with some types of situations and less skilled with other types. Hence, expertise does not necessarily apply to whole skill domain but at least to an essential part of it. Therefore, there are, probably, no “expert nurses” who master everything in nursing, but many nurses do achieve expertise in the area of their specialization. They also note that in spite of extensive experience some nurses never seem to reach expert level even in the area of their specialization (Benner & et al. 2009, 9).

3.1.3 Clinical Expertise in Nursing

Korhonen (2009, 3) states that expertise in nursing requires one’s deepened knowledge about a specific field in nursing. The core of clinical nurse specialist (CNS) practice is evidence-based nursing in the field of specialty (Darmody 2006, 260-261). The advanced practice arises from both theoretical and practical knowledge gained from both baccalaureate program and working life. Clinical and classroom learning experiences from the field of specialty enable comparing advanced and special practice to one entity (Zuzelo 2003, 362).

In order to gain clinical competence and expertise in nursing, a professional nurse (Bachelor of Health Care) has to master certain core skill areas. The core skill areas can be divided into ethical competence, health promotion, decision-making, teaching and guidance, collaboration, research and development, leadership, multicultural nursing, clinical competence, social activity and medical management (Opetusministeriö 2006, 63-64).

Meretoja (2004) claims that self-assessment is an important tool to recognize the need for professional development and education. To assess nurse competence a Nurse Competence Scale (NCA) was developed. The tool consists of 73 items divided into seven different categories. The categories are helping role, teaching-coaching, diagnostic functions, managing situations, therapeutic interventions ensuring quality and work role. The tool can be used either by the professional nurses to self-evaluate their work or by the employers to evaluate their staff. On the organizational level, the tool can be used to evaluate level of expertise in care in the whole organization by quality assurance programs, work force planning and human resources management. (Meretoja 2004, 124-133.)

Bobay, Gentile and Hagle (2009) have studied the professional characteristics of nursing and whether the professional characteristics influence the development of clinical nursing expertise. It was found out that experience reinforces expertise significantly. On the contrary, in an earlier study made by Bobay (2004), the simple use of years of experience as the only method to evaluate the level of expertise in nursing was criticized. In this study, Bobay avoided categorizing nurses by experience and examined the nurses' clinical work by exploring the relationship between five components: experience, domain-specific knowledge, professionalism, life-long learning ability as well as problem-solving and creativity. It was discovered that experience had only little connection to nurses' performance in other categories. (Bobay 2004, 313-314.)

Daly & Carnwell (2003) researched levels of advanced nursing practice and aimed on differentiating between different levels of nursing practice. Terms "role extension", "role expansion" and "role development" were used in their study to describe the view points to advanced practice. Role extension means including a particular skill or area of practice into nursing. The skill is not usually considered part of nursing practice but a part of another profession, for instance medical profession. Role expansion adds special skills or areas of specialty to practice and allows the nurse to work as a specialist. The focus is preserved in nursing practice

although expanding the work role allows nurses to have more autonomy and accountability as well as responsibilities in their practice. Role development is characterized by aspects from both role extension and role expansion. Yet, role development gives the nurses possibility to use both medical and nursing information to develop the quality and holistic view of nursing practice. Role development would give the nurse the autonomy to carry out whole process of care by assessing the patient, formulating a diagnosis, prescribing treatments, managing and finally, discharging the patient. According to Daly & Carnwell, the nature of practice of clinical nurse specialist is role expansion.(Daly & Carnwell 2003,161-162.)

Delamaire and Lafortune (2010) view levels of advanced nursing practice divided in two: “a substitution of tasks” and “a supplementation of tasks”. Substitution of tasks means transferring physicians’ tasks to be carried out by nurses. Substitution of tasks is therefore similar to role extension. The ultimate goal of substitution of tasks is to reduce the workload of physicians and the nurses right to prescribe medicines can be used as an example of substitution of tasks or role extension. Supplementation of tasks means applying clinical nursing expertise in new services that aim on enhancing the quality of care and continuity of care. These tasks have not been previously performed by physicians but require nursing expertise to provide high quality care. Supplementation of tasks can be compared with both role expansion and role development. (Delamaire & Lafortune 2010, 22; Daly & Carnwell 2003, 161-162.)

Clinical nurse specialist's role is described by working with patients with a diagnosed medical problem. The CNS manages these patients and consults the nurses within their area of specialist practice. (Roberts-Davis & Read 2001, 41.) The skills of clinical nurse specialist are distinctive to their field of specialty. Close collaboration with a physician is also characteristic to the work of CNS. (Daly & Carnwell 2003,163-164.) The work of clinical nurse specialist can be perceived through role dimensions or subroles which are direct patient care, education, consultation, research and development, and in some cases, administration (Darmody 2005, 261).

Darmody (2005) and Zuzelo (2003) have made similar findings regarding the job contents of CNS. Both used the three spheres of influences determined by National Association of Clinical Nurse Specialist's Statement on Clinical Nurse Specialist Practice and Education as a framework of their studies. These spheres are: patients and clients, nurses and nursing as well as organizational. Concurrently, the clinical nurse specialists aim to improve clinical outcomes on these spheres by using their influence on all the spheres. (Darmody 2005, 261-263; Zuzelo 2003, 366.)

Improving clinical outcomes and care can be seen as a comprehensive goal. Additionally, Zuzelo and Darmody mention cost-effective outcomes of care and continuous assessing, planning and evaluating nursing care. To initiate change and improve the outcomes, skill competencies unique to specialty field and sphere of influence have to be developed in CNS's thinking (Zuzelo 2003, 364).

Equally important, Graham, Fielding, Rooke & Keen (2006) made similar findings as Zuzelo and Darmody, but named "the spheres of influence" as "roles". They perceive clinical nurse specialist through the roles of "care-giver", "information giver" and "initiator of change". These roles can be compared with the spheres of influence.

The “care giver”-role or patient and client sphere include both direct nursing care and consultation and collaboration with other nurses at the bedside, teaching and implementing nursing process. However, Graham et al. group patient empowerment and education as well as nurse education as part of CNS’s “information giver”-role. Alternatively, Zuzelo and Darmody perceive nurse education as part of nurse and nursing sphere. The CNS practice in nursing sphere includes enabling evidence-based practice, consulting i.e. answering the nurse’s questions about care or new nursing intervention as well as planning, implementing and evaluating education and competence as well as identifying the learning needs of nurses working in the organization. According to Darmody, CNS’s can give orientation to newly employed nurses. The third sphere, organisation or “initiator of change”-role include development of organization by implementing new innovations, evidence-based practice models and research to practice and continuous improvement throughout the organization. (Darmody 2006, 260-267; Graham et al.982-984;Zuzelo 2003,369-371.)

The area and extent of specialty field vary according to the type of expertise (Korhonen 2009, 3.) and the needs of organization the clinical nurse specialist works for (Graham 2006, 982). The field of expertise or domains of clinical activity can be characterized as condition-specific, area-specific or client group-specific. Condition-specific domains have their focus on patients with particular diagnosis or treatment, for instance, breast cancer patients, stoma care or diabetic care. Area-specific domain focuses on expertise demanded in a particular unit, such as intensive therapy unit, neonatal unit or coronary care unit. Client-group specific domain focuses on special client groups for example, children or the elderly. The client-group specific domain can be combined together with the condition-specific domain, for instance, paediatric diabetic care as specialty field. (Roberts-Davies & Read 2001, 35.)

3.2 Clinical Nursing Expertise in Postoperative Pain Management

3.2.1 Pain

Pain has several definitions because of its multiform nature. International Association for the Study of Pain (1994) defines pain as “an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage” (Salanterä, Hagelberg, Kauppila & Närhi 2006, 7). In nursing, pain has also been defined as follows “Pain is whatever the experiencing individual says it is and exists whenever they say it does” (McCaffery & Pasero 1999, according to Salanterä et al. 2006, 7).

According to Carr, Layzell and Christensen (2009, 5) pain can be seen as a multidimensional experience which reflects emotional, sensory and cognitive elements. The experience of pain is complex and influenced by several factors such as previous pain experiences, emotion, mood, culture, age and situation (Carr, Layzell and Christensen 2009, 5). Therefore, pain is always subjective.

3.2.2 Acute and Postoperative Pain

Acute pain commonly occurs in the postoperative period and is associated with an injury such as a trauma or burn or with a surgical intervention (Courtenay & Carey 2008, 2002; Mann & Carr 2009, 77). The intensity of postoperative pain varies but its duration is usually limited. The extent, duration and characteristics of postoperative pain vary according to the type of surgery. (Hamunen & Kalso 2009, 281; Kalso, Elomaa, Estlander & Granström 2009, 105.)

In spite of the unpleasant nature of pain, acute pain has a vital protective function for the body. Acute pain warns about tissue damage and prevents further damage from occurring with the help of withdrawal reflex and other protective mechanisms.

After the immediate protective mechanisms the effects of acute pain are mainly harmful. (Kalso et al. 2009, 105-106.) However, acute pain is somehow meaningful for the patient because the reason for it is known and it is assumed to subside with appropriate treatment (Sailo & Vartti 2000, 34).

Mann and Carr (2009, 77, 79-80) report about the complications, risks and other negative effects of inadequately treated acute pain. If postoperative pain is acute and uncontrolled, the patient is unlikely to move, thus avoiding inducing further pain. This combined with the stress response to surgery or trauma may have several undesired side effects or complications of which some are potentially very severe.

Postoperative acute pain may cause compromised respiratory function and avoidance of coughing and deep breathing. Gastrointestinal function can be compromised as well. Pain can be linked with tachycardia and hypertension, too. Pain and stress together increase platelet adhesion, which may increase the risk of developing deep vein thrombosis or pulmonary embolism. Uncontrolled postoperative pain causes also sleep disturbances, and may contribute to postoperative nausea and vomiting. Because of these complications quality of life diminishes and postoperative recovery slows down. Undertreated pain may also bring increased financial burden both to society and patient because of expensive increased utilisation of health care services. (Mann & Carr 2009, 77, 79-80.)

The importance of timely and proper management of postoperative pain is emphasised. (Sailo & Vartti 2000, 34; Hamunen & Kalso 2009, 278; Mann & Carr 2009, 77, 79-80) In addition to ethical reasons, acute pain must be treated because of its harmful physiological and psychological effects on the patient, and to prevent acute pain from becoming chronic and to prevent postoperative morbidity (Werner & Nielsen 2007, 135; Hamunen & Kalso 2009, 278). Effective pain management postoperatively decreases the cardiovascular, thromboembolic and respiratory complications and promotes recovery (Werner & Nielsen 2007, 135; Hamunen & Kalso 2009, 278).

3.2.3 Quality Standards for Postoperative Pain Management

Advanced pain treatment modalities enable effective post-operative pain management. However, providing postoperative pain management of uniform quality to patients both in in- and outpatient's units is a nowadays' challenge. Patient's have a right to expect sufficient pain management in postoperative period. (Salomäki & Rosenberg 2006, 851.)

According to Hamunen and Kalso (2009, 292) postoperative pain management starts already at preoperative pre-visit when anaesthesiologist plans the pain management postoperatively. The type and extent of surgery as well as patient's anamnesis and history are helpful in planning an effective, individual pain relief regimen for postoperative period.

Tables 1 and 2 present the Quality Standards and required actions for post-operative pain management (Salomäki T. & Rosenberg T. 2006, 851) and Principles of post-operative pain management (Hamunen & Kalso 2009, 293). There is congruence between Actions in table 1 and Principles in table 2 despite different authors. Both Salomäki & Rosenberg and Hamunen & Kalso view regular evaluation of the postoperative pain as the basis for postoperative pain management. Intensity of pain should preferably be estimated as no pain or mild pain (VAS [visual analogue scale] 3 or less) by the patient. Moderate and severe pain is medicated according to physician's orders and the effect of medication is followed and documented carefully. (Salomäki & Rosenberg 2006, 851; Kassara et al. 2006, 360)

Hamunen and Kalso emphasize in Principles of Post-operative pain management the pharmacological aspect of pain management. Salomäki and Rosenberg also bring up organizational aspects for effective pain management. In addition to pharmacological pain management, multimodal analgesia forms are emphasized by both authors. By multimodal analgesia is meant, e.g. combining per orally administered pain medication to special techniques in pain management such as epidural infusion, patient controlled analgesia (PCA), nerve blocks or another forms of regional anaesthesia depending on the type and extent of surgery. Also Salomäki and Rosenberg mention use of specialized techniques as an action to reach the quality standard of experience pain being mild and VAS less than 3 at all times. (Hamunen & Kalso 2009, 282).

Organizational structures, possibilities for consultations, multiprofessional approach, education, knowhow and quality follow ups are listed by Salomäki and Rosenberg as ways to achieve uniform quality in pain management. Warren Stomberg and Haljamäe (2003, 217-221) have investigated the impact of quality assurance and audit documentation on clinical outcome. They have come to the conclusion that quality assurance programs help to reach the clinical practice guidelines of postoperative pain management by improving pain management routines, patient experience and satisfaction of the postoperative period and pain alleviation as well as the attitudes of personnel to postoperative pain management. Documentation of the clinical outcome and feedback from personnel in surgical wards also helps to evaluate the effectiveness of organizational structures for postoperative pain management i.e. acute pain services (Warrén Stomberg, Haljamäe 2003, 217-221).

All in all, effective, quality postoperative pain management consists of individually planned post-operative pain management regimen, involvement of the patient in the postoperative pain management, effective organizational structure and consultation possibilities to pain specialist nurses and anaesthesiologists as well as education both to patients preoperatively and nurses about postoperative pain management. Quality standards set to postoperative pain management facilitate adapting a unanimous practice for postoperative pain management throughout different hospitals in Finland. (Salomäki & Rosenberg 2006, 851; Hamunen & Kalso 2009, 282; Warren Stomberg & Haljamäe 2003 .)

TABLE 1. Quality Standards and required actions for post-operative pain management (Salomäki T. & Rosenberg T. 2006, 851).

Quality standard	Action
Intensity of pain is not experienced as stronger as mild throughout postoperative period	Prediction and regular assessment of pain
Intensity of pain estimated by the VAS-measurement is 3 or less at all times	Possibilities for consultation
All the pain estimated as stronger than 3, must be treated immediately.	Effective organisational structure for managing postoperative pain as in addition to special techniques in pain management such as epidural infusion, PCA, nerve blocks and multimodal therapies, especially after extensive surgeries
Pain has minimal effect on daily activities and sleeping	
Complicated patient cases	Consultations Special techniques Transferring the patient to ICU, PACU or, in case of day surgery, to in-ward
Agony, fear and discomfort are minimised	Pain intensity, VAS less than 3 Pre- and postoperative education Possibility to contact hospital for home (day-surgery) Caring, good basic care
Side effects of pain are minimal (nausea, extreme fatigue, itching, low blood pressure, vertigo)	Prediction Detection Treatment
Prevention of complications: respiratory failure, nerve injuries, inflammations, bleeding, toxicity	Good education Monitoring Organization
Pain management of uniform quality: regarding different types of diseases, operative treatments, different hospitals and wards as well as outpatient units.	Knowhow Multiprofessional approach, education, quality follow-ups

TABLE 2. Principles of postoperative pain management (Hamunen, Kalso 2009, 293)

1. Postoperative pain management is planned in preoperative appointment
 2. Postoperative pain is evaluated and documented regularly (Use of VAS, NRS or verbal rating)
 3. Multimodal analgesia is used in pain management
 4. Anti-inflammatory medication or paracetamol is used as a baseline medication if there are no contraindications. Medication is administered as long as there is a need and no harmful side-effects
 5. Opioid is administered intravenously or intramuscularly if needed
 6. Regional anaesthesia methods are used according to the type of surgery
 7. Medicines are given per os as soon as possible (also strong opioids)
 8. When using special techniques, continuous monitoring and documentation are ensured
 9. Patients with chronic pain have a regular pain medication already at preoperative phase.
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3.2.4 Acute Pain Services

The concept of the acute pain services originated in the United States in the mid-1980s because there was a hypothesis that postoperative pain treatment needed a better organization (Bäckström & Rawal 2008, 40). The organization of acute pain services were then introduced both in the USA and Europe in the 80s (Werner & Nielsen 2007, 135). Acute pain services (APS) are viewed as a key factor in ensuring quality postoperative pain management in hospitals (Salomäki & Rosenberg 2006, 851).

Warrén Stomberg and Haljamäe (2003, 211) argue that for postoperative pain management in clinical practice, nurse-based anaesthesiologist-supervised APS-team seems to be the most suitable organizational model. Nurse-based model is supported by other authors as well, for its cost-effective and efficient nature. Furthermore, since routine postoperative care is nurse-based, this model may be adopted by most surgical departments. (Shapiro & al 2004, 416; Werner & Nielsen 2007, 136.)

Warrén Stomberg and Haljamäe (2003, 211) claim that the aims of pain management guidelines can be best achieved by a multidisciplinary APS-team because with acute pain services the optimal use of existing knowledge and techniques of pain management can be best achieved. According to Mann and Carr (2009, 81) an APS-team comprises an anaesthesiologist and pain specialist nurse and sometimes a pharmacist. Surgical ward nurses collaborate with the APS-team but do not belong to it (Mann & Carr 2009, 81). However, Warrén Stomberg and Haljamäe (2009, 211) state that an anaesthesiologist, pain specialist nurse(s), pharmacist, surgeon and designated surgical ward nurses participate in the acute pain service team.

APS-team is responsible for the daily management of postoperative pain or trauma and for ensuring that adequate monitoring is available for the chosen pain relieving technique, for example epidural analgesia or PCA. Thus, implementation and supervision of epidural analgesia and other highly specialized techniques are particularly important tasks of APS-teams. (Werner & Nielsen 2007, 316; Mann & Carr 2009, 81). Thus, it is the introduction of acute pain services that has permitted an increase in the amount and sophistication of postoperative pain relief methods which include, among other things, patient controlled analgesia (PCA) and epidural analgesia in surgical wards as well (Werner & Nielsen 2007, 136; Taylor & Stanbury 2009, 188). Other responsibilities of APS-teams include education on analgesic techniques and other pain-related topics, and some teams undertake research related to pain, as well. APS-teams also audit the service continuously in order to evaluate the effectiveness of any new initiatives. (Werner & Nielsen 2007, 316; Mann & Carr 2009, 81.)

Within the APS-team the duties of different team members are divided as follows: the anaesthesiologist is the team leader and an educator, coordinator and prescribes medications and postoperative pain management techniques. The pain specialist nurse(s) educates both the patients and surgical ward nurses, supports the monitoring and documentation of postoperative pain and its management, and co-ordinates between the wards and APS-team. Pharmacist is an educational resource related to analgesic medications. Surgeon is formally responsible for the supervision of the monitoring and/or documentation on surgical wards. Designated surgical ward nurses are responsible for maintaining adopted postoperative pain management techniques on the wards and monitoring outcome variables and providing feedback to pain specialist nurse or anaesthesiologist. (Warrén Stomberg Haljamäe 2009, 211.)

The role of surgical ward nurses is critical to the success of the aims of acute pain services and to the quality of postoperative pain management (Warrén Stomberg & Haljamäe 2003, 213; Mann & Carr 2009, 81). Therefore, it is of a great importance that surgical ward nurses achieve an acceptable level of knowledge in pain assessment, monitoring and techniques (Warrén Stomberg & Haljamäe 2003, 213). In addition, only a few APS-teams can offer 24-hour services, and especially from the patient's point of view, the quality of postoperative pain management should be consistent even outside the office hours (Mann & Carr 2009, 81).

3.2.5 Pain Specialist Nurse

The role of the pain specialist nurse is salient in the APS-team and in postoperative pain management. The pain specialist nurse is expected to possess a special interest and knowledge in acute pain and its management and is usually positioned in the anaesthesia department or post-anaesthesia care unit (Warrén Stomberg & Haljamäe 2009, 213.) According to Warrén Stomberg and Haljamäe (2009, 213) the combination of advanced practical and theoretical knowledge, expert clinical and teaching skills and research abilities enable the acute pain nurse to take the role of a key leader of surgical ward nurses in the postoperative pain management practice. A close collaboration with the anaesthesiologists supports this function.

Willens, DePascale and Penny (2010, 68) present six performance domains that exist in pain management nursing: 1) assessment, monitoring and evaluation of pain; 2) pharmacologic pain management; 3) non-pharmacologic pain management; 4) therapeutic communication and counselling; 5) patient and family teaching; and 6) collaborative and organizational activities. These domains can be found in the work contents of a pain specialist nurse. The role description of a pain specialist nurse was also studied by Kitowski and McNeil (2002) and similar tasks or duties were found in their study as well.

The first performance domain includes assessing the characteristics of the patient's pain and observing the patient's vital signs, and possible side effects or complications related to pain relief methods. A pain specialist nurse also reassesses and evaluates whether the experienced pain decreases with the use of pain relief. (Kitowski & McNeil 2002, 23; Willens, DePascale & Penny 2010, 71.)

A pain specialist nurses' expertise is well seen in the domain of pharmacologic pain management. This domain includes among other things titration of analgesics based on patient assessment and reassessment within order or parameter limits. Pain specialist nurses manage functions of the device needed to implement PCA, epidural or nerve blockade analgesia. They also evaluate the functionality and practicality of this device and other related material (e.g. epidural catheters and tapes). The patient's renal and hepatic laboratory values are also taken into consideration when implementing and fine-tuning pharmacologic analgesia. (Tornivuori & Viitanen 2000, 22; Kitowski & McNeil 2002, 71.)

Pain specialist nurses collaborate and convey information between surgical wards and the APS team. A major task of the pain specialist nurse is that they visit regularly patients with special pain management methods, such as PCA, epidural analgesia or other regional catheter techniques (e.g. brachial plexus block) on surgical wards (Kitowski & McNeil 2002, 23; Bäckström & Rawal 2008, 41). A pain specialist nurse also mediates information between the patient and anaesthesiologist. For the pain specialist nurse the patient is an important co-operation partner, since by interviewing, listening to and observing the patient the pain specialist nurse obtains essential information for the individual pain management regimen of the patient. Other possible collaborative partners could be representatives from medical, equipment and material companies. (Tornivuori & Viitanen 2000, 22; Willens, DePascale & Penny 2010, 68.)

Education and guidance of surgical ward staff is of great importance in the work of a pain specialist nurse. Pain specialist nurses organize education of various kinds on surgical wards. Pain specialist nurses give bedside education about the special pain management methods (e.g. PCA, epidural analgesia and nerve blockades) for surgical ward nurses. They also give regularly education for all the ward members about postoperative pain management related topics. Surgical ward nurses also consult pain specialist nurses about issues in pain management. (Tornivuori & Viitanen 2000, 22-23; Bäckström & Rawal 2008, 41.)

Expert nurses sharing their knowledge and experience about pain management with less experienced nurses is seen as an ideal way to educate and mediate information (Richards & Hubbert 2007, 24). Since the aim of postoperative pain management is continuous quality improvement, the adequacy of acute pain services must be recurrently evaluated, and the pain specialist nurse plays a major role in that. A pain specialist nurse develops strategic approaches to postoperative pain management including evaluation of current practice and patient outcomes, implementing interventions, such as educational programs and different options for pain management and evaluating the impact of interventions. (Warrén Stomberg & Haljamäe 2009, 213.)

4 METHODOLOGY

A quantitative research method was chosen for this thesis. Quantitative research involves the systematic collection of numerical information, often under conditions of control, and that information is analyzed using statistical procedures (Polit & Hungler 1995, 15). This thesis consists of two parts; the theoretical part, which is based on literature review and the quantitative research part which was conducted with a structured questionnaire.

4.1 Literature review

A review of research literature aims to discover and ascertain what is already known and not known in the literature about a research problem (Polit & Hungler 1995, 70; Fain 2009, 53). Hence, a literature review about clinical expertise in nursing and clinical nursing expertise in postoperative pain management was considered to be an appropriate method to solve the first two research questions. The findings of the literature review were used as a theoretical framework and theoretical basis for the quantitative questionnaire.

The inclusion criteria for the articles included in the literature review were that they either discuss clinical expertise in nursing in a wider context or discuss clinical nursing expertise in postoperative pain management. The articles must have been published after the year 2000, in addition, relevant articles published after September 2011, were not included in the research. Research articles were searched from several electronic databases. Electronic review of literature was complemented by hand-searching related articles, journals and books. Both English and Finnish articles were included. Table 3 lists all the databases and search words used for the literature review.

Table 3. Databases and search words used in literature review.

English databases	Search words and search word combinations
Academic Search Elite (EBSCOhost) CINAHL (EBSCOhost) Medic PubMed ScienceDirect (Elsevier)	“clinical nurse specialist” “clinical nurse specialist AND expertise” “clinical nurse specialist AND advanced nursing practice” “clinical nurse specialist AND postoperative pain management” “clinical nurse specialist AND pain management” “acute pain service AND clinical nurse specialist” “postoperative AND pain” “expertise AND postoperative pain management”
Finnish databases	Search words and search word combinations
Aleksi Arto	“asiantuntijasairaanhoitaja” “asiantuntija AND sairaanhoitaja” ”hoitotyön asiantuntijuus” “sairaanhoitaja AND postoperatiivinen kipu”

4.2 Quantitative Research and Questionnaire

Evaluation research is one type of quantitative research which aims on finding out the effectiveness of program, practice, procedure or policy. This study has the characteristics of evaluation research since the authors were investigating an already existing practice and the expectations of the surgical nurses about the practice. Evaluation research is also seen as a way to develop practice in both national and local level and give idea which way the practice should be directed.

(Polit & Hungler 1995, 189.)

In order to solve the last research question “What are the expectations for pain specialist nurses among nurses in surgical wards?” it was considered appropriate to create a quantitative, structured questionnaire. Structured approach to collect self-report data is appropriate when researchers know in advance what they need to know and can frame appropriate questions to obtain the needed information (Polit & Beck 2010, 343). The questionnaire consists of a Likert's scale and statements regarding the work of pain specialist nurses. This kind of questionnaire was considered appropriate to map expectations of a large number of nurses working in five different surgical units.

A Likert's scale is a scaling technique which consists of several declarative statements that express a viewpoint on a topic (Polit & Beck 2010, 346). For this study, a Likert's scale with four agreement categories (option of 'uncertain' omitted) was considered appropriate in order to force the participants to make a choice (Fain 2009, 132), so that there would be enough data to be analyzed.

The questionnaire statements were created based on the literature review findings and expert opinions and suggestions of an anaesthesiologist and a tutoring pain specialist nurse working in Pirkanmaa hospital district. The contents of the questionnaire were discussed and approved in a meeting with the working life partner before the execution of the questionnaire.

In the questionnaire there were 13 statements regarding the work of pain specialist nurse. The questionnaire had also two background variables about the respondents' continuous work experience in their current ward, and the current ward they work for. There were four structured response categories regarding the respondents' work experience in the questionnaire. The questionnaire and covering letter are presented in appendices (appendix 1).

4.3 Research Process

The research process was started in a meeting with the working life partner in October 2010 where the purpose and object of the study was discussed. Together with the working life partner the authors decided that the study would map the expectations for a pain specialist nurse among the nurses working in surgical wards. It was agreed with the working life partner that a quantitative research approach would be ideal to solve the research problem.

The authors started the process by making a study plan which was approved by the working life partner. After completing the study plan, the authors, based on their findings for literature review and the expert opinions of an anaesthesiologist and a pain specialist nurse created the actual questionnaire as well as the covering letter.

The authors applied for research permit from Pirkanmaa Hospital District in January 2011. The research plan, questionnaire and covering letter were evaluated and approved by the educational nursing director.

After receiving the research permit from the Pirkanmaa Hospital District in February 2011, the authors contacted the ward managers of the participant wards via e-mail and telephone. It was agreed to visit the wards and present the questionnaire and research to the wards and leave the questionnaires to be filled in. The presentations about the study were held in March 2011 and the wards were given a two weeks' time to return the questionnaires since the wards work in three shifts, so that as many nurses as possible could fill in the questionnaire.

The data obtained from the questionnaires was transferred to electronic form by using the SPSS program for statistics in March 2011. The authors started the actual data analysis in August 2011 after consulting a statistician about their findings.

The literature review was ongoing from October 2010 to October 2011. Most of the actual literature review was done from January 2011 to March 2011 when authors coded the data they had obtained by literature review. From March 2011 on the literature review was complemented and completed.

The thesis was submitted for evaluation to university of applied sciences and working life partner in October 2011. The language was evaluated by an English teacher in September 2011.

4.4 Data Collection

Data for the research part of this thesis was collected with the structured questionnaire. Data collection and sampling plan were finalized in January-February 2011. Data collection took place in the five participative surgical wards between 8th and 25th March in 2011.

In order to reach the target response rate of 60 completed questionnaires, each ward was given 20 questionnaires. Altogether 100 questionnaires were given to the participating wards.

4.5. Sample

The participants for the study were pointed out by the working life partner. Five different surgical wards of Pirkanmaa Hospital District agreed to participate in the study. The participating five surgical wards were of several surgical specialities. With the working life partner it was decided that the questionnaire would be directed only for registered nurses working full- time in the ward.

4.6 Data analysis

The authors used descriptive statistics in SPSS software when analyzing the data. With descriptive statistics it is possible to describe and summarize data and to compare and determine relationships (Polit 1996, 9-10). This kind of approach for data analysis was considered appropriate since the authors aimed to map the expectations of a great number of surgical ward nurses with different backgrounds (i.e. ward and work experience).

The questionnaires were numbered and read through by the authors and after that the data was transferred from the completed questionnaires to digital form in SPSS. The authors coded the answers from 0-4, giving each number an explanation: 0= no answer, 1 = totally disagree, 2 = disagree, 3 = agree and 4 = totally agree. Since almost every statement got blank answers, the authors created a category of "no answer" in order to process blank answers. The authors chose also to create a category of "information missing" in order to deal with the questionnaires where background information was missing.

The level of the collected data concerning the pain specialist nurse statements is ordinal. The level of the collected data concerning the background variables is nominal.

5 ETHICAL CONSIDERATIONS

Studies that research and evaluate already existing practices and policies face an ethical challenge of evaluating some one's work, the successfulness and effectiveness of it. Personal work and practice being evaluated is a sensitive issue. This requires the researcher take into consideration certain ethical principles when carrying out research and presenting study results in public (Polit & Hungler 1995, 189.)

An ethical principle of research is not to harm also known as "Principle of Beneficence". "To harm" can be viewed in many ways. It can mean physical, psychological or social consequences caused by the study. Participants should not be exposed to any kind of harm before, during or after the conduction of study. (Polit & Hungler 1995, 119-121.)

Other principles handling study ethics are "The Principle of Respect for Human Dignity" and "The Principle of Justice". By Principle of Respect is meant that the participants can voluntarily decide whether to participate in a study or not to participate. Neither should the study cause the participants any harm or threat. "The Principle of Respect" also emphasizes person's "Right to Full Disclosure" i.e. that the research is described to prospective participants fully. This means that the covering letter has to mention both risks and benefits, the voluntary nature of study and the right to refuse from participating to study as well as the responsibilities of the researchers. (Polit & Hungler 1995, 122-124.)

“The Principle of Justice” consists of two rights: “The Right to Fair Treatment” and “The Right to Privacy”. Fair treatment means that the participants and those who choose not to participate are treated equally despite their decision about participation. Researchers are also bind to protect the privacy of participants by the “Right to Privacy”. Either this means anonymity guaranteed by the researcher or a promise of confidentiality given by the researcher. Anonymity exists when no one, including the researcher, can link the answer and participant together. The promise of confidentiality is used when the researcher can identify the participant with the answer e.g. in studies with face-to-face interviews. (Polit & Hungler 1995, 122-124.)

The information for this thesis was gathered by questionnaires which nurses working in surgical wards responded anonymously. Anonymity was maintained in the sense that it is impossible for the authors to link the respondent and the filled questionnaire form. Although the authors know the participant wards, the information about the participant wards was not published in publicly presented results of the thesis.

A covering letter discussing the issues of voluntary participation, anonymity and confidentiality was attached to each questionnaire form. The covering letter also included the authors’ contact information for any questions regarding the study. Each covering letter was signed in blue ink by both authors. In addition to covering letter the authors also visited the wards to inform the prospective participants about their study.

The purpose of the covering letter was to provide the participants with adequate information about the study before making decision about participating in this study. The filled and returned questionnaires were therefore considered to be informed decisions to participate in this study.

All the data obtained from completed questionnaires was coded, each questionnaire was given a number and the data was fed to computer. Computer has been used to analyze the data ever since. The collected data was processed with strict confidentiality in order to assure anonymity for the respondents. After the completion of the thesis the completed questionnaires were destroyed properly. A permission to conduct this study was obtained from PHD. After receiving the permit, the authors contacted the wards about their study and distributed the questionnaires to wards.

Bias can be defined as any influence that distorts the results of a study and undermines validity (Polit & Beck 2012, 720). From the authors' point of view researcher bias has been minimized since both authors have independently and together done data search and continuously evaluated the research findings. Moreover, expert opinions have been utilized, and the authors had the possibility to use the opinions of an opponent and thesis supervisor in order to reduce bias.

6 RELIABILITY AND VALIDITY

Reliability can be defined as the degree of consistency or dependability with which an instrument measures an attribute (Polit & Beck 2012, 741). Validity is the degree to which an instrument measures what it is supposed to measure. Reliability and validity are not totally independent qualities of an instrument, thus an instrument that is unreliable cannot be valid. (Polit & Beck 2010, 377.)

In order to increase the reliability and validity of both this thesis and the questionnaire, a tutoring pain specialist nurse gave their expert opinions on the questionnaire contents. Also an anaesthesiologist gave suggestions and expert opinions on the questionnaire contents. The contents of the questionnaire were also discussed and approved in a working life meeting before the authors applied for research permit. The questionnaire and its covering letter were also submitted when applying research permit. The questionnaire and the covering letter were approved by the educational nursing director. Hence, the authors view that the questionnaire they created was both reliable and valid since it was commented on and approved by different experts and quarters.

With the working life partner it was agreed that the target response rate would be 60 completed questionnaires for reliable and valid study results. The final response rate of the study was 64 completed questionnaires, thus the target response rate was exceeded.

7 LIMITATIONS

This study has several limitations. Many of the articles that met the inclusion criteria for the literature review, and were then used in the theoretical framework were written in English and published abroad. Thus, the theoretical framework of this thesis might lack Finnish perspective to the issues dealt in the theory part a little. However, for the authors, articles published in English were convenient since there was a lack of academic Finnish articles discussing clinical nursing expertise and postoperative pain management. Furthermore, this thesis was written in English.

Another limitation to this study was that the questionnaire target group (surgical ward nurses) was somewhat unequally represented. Even though this study got rather good response rate (64%), the number of completed questionnaires was somewhat unequally distributed between the different surgical wards and between nurses with different work experience. Thus, when analyzing the research results according to work experience and ward, it must be taken into consideration that respondents with different backgrounds (ward and years of work experience) were varyingly represented.

In the questionnaire the respondents were asked about their continuous work experience in their current ward. Thus, even if the respondent chose the option of “less than a year”, their overall work experience could be more than, for example, twenty years. Moreover, the authors did not have sophisticated skills in statistical data analysis, which might also cause some limitations to this study.

8 RESULTS

The results of the structured questionnaire are presented mostly in tables. In the questionnaire the respondents were asked about their background information: current ward and their continuous work experience in their current ward. The questionnaire had 13 statements regarding pain specialist nurse's work and the APS organization

The results of the questionnaire statements are presented in three separate sections. The 13 questionnaire statements were divided into three sections according to their contents.

The numerical data collected with the questionnaires are presented both in absolute numbers (n) and percentages (%). In the tables the category of "no answer" means that the respondent had not answered to that statement. In the tables with the category of "information missing" it is meant that the respondent had not filled in their background information.

Altogether 100 questionnaires were given to the participating wards. Each of the five wards received 20 questionnaires. Altogether 64 completed questionnaires were returned, therefore the response rate was 64%. The number of the completed questionnaires varied among the wards. Ward I returned 8 completed questionnaires out of 20, ward II 10, ward III 13, ward IV 14 and ward V 17 questionnaires. In two of the completed questionnaires the background information was missing. (table 4.)

TABLE 4. The number of completed questionnaires in each ward

WARD	n	%
Background information missing	2	3,1
Ward I	8	12,5
Ward II	10	15,6
Ward III	13	20,3
Ward IV	14	21,9
Ward V	17	26,6
Total	64	100,0

The respondents' continuous work experience in their current ward varied from the experience of less than a year to work experience of more than 10 years. Out of all (64) respondents, ten had worked less than a year in their current ward. Twenty-one respondents had work experience from 1 to 5 years in their current ward and nine respondents had continuous work experience from 6 to 10 years. Twenty-two of the respondents had continuous work experience of more than 10 years in their current ward. Amongst the participating wards there can be seen some variation concerning the respondents' work experience. (table 5.)

TABLE 5. The respondents' continuous work experience in each ward

	Information missing	Less than a year	1-5 years	6-10 years	More than 10 years	Total
Information missing	2	0	0	0	0	2
Ward I	0	3	3	0	2	8
Ward II	0	1	5	1	3	10
Ward III	0	4	3	2	4	13
Ward IV	0	2	6	1	5	14
Ward V	0	0	4	5	8	17
Total	2	10	21	9	22	64

8.1. Availability of APS & Pain Specialist Nurse

As seen in table 6 the majority (73.5 %, 47/64) of the respondents took a positive stand on statement 1 “*I know the contact information of a pain specialist nurse.*”. Moreover, most of the respondents (38/64, 59.4%) who had taken a positive stand on this statement, had chosen the option of “totally agree”. Altogether 18.8 % (12/64) respondents were of the opinion that they do not know the contact information of a pain specialist nurse. Eight (12.5%) of them disagreed and four (6.3%) totally disagreed with statement 1. This statement was left blank in five questionnaires (7,8%). (table 6.)

TABLE 6. Statement 1 “I know the contact information of a pain specialist nurse.”

	n	%
No answer	5	7,8
Totally disagree	4	6,3
Disagree	8	12,5
Agree	9	14,1
Totally agree	38	59,4
Total	64	100,0

As it can be seen in appendix 2: table 1 regardless of the continuous work experience in their current ward, either a half or more than a half of the respondents viewed that they know the contact information of a pain specialist nurse. Half (5/10) of the respondents with continuous work experience of less than a year in their current ward viewed that they know the contact information, whereas almost a half (4/10) of them viewed that they do not know the contact information (appendix 2: table 1). When comparing different wards, most of the respondents in each ward viewed that they know the contact information of pain specialist nurse (appendix 2: table 2).

Majority (49/64, 76,6%) of the respondents totally agreed with statement 2.1 *“In my opinion, a pain specialist nurse is reachable during office hours.”* (table 7). Twelve respondents (18,8%) agreed with the statement. None of the respondents chose the option of “disagree” when answering this statement. Only one respondent (1,6%) totally disagreed with this statement. Two respondents failed to answer the statement. (table 7.)

TABLE 7. Results of statement 2.1 *“In my opinion, a pain specialist nurse is reachable during office hours.”*

	n	%
No answer	2	3,1
Totally disagree	1	1,6
Disagree	0	0
Agree	12	18,8
Totally agree	49	76,6
Total	64	100,0

It can be seen in appendix 2: table 3 that regardless of the respondents' work experience, the majority of respondents were of the opinion that pain specialist nurse is available during office hours. For example, all respondents with work experience of more than ten years (n=22) took a positive stand (either agree or totally agree) to statement 2.1. One respondent with work experience from 6 to 10 years totally disagreed. (appendix 2: table 3.) As it can be seen in appendix 2: table 4, the majority of the respondents in each of the five surgical wards either agreed or totally agreed that the pain specialist nurse is reachable during office hours.

Table 8 displays the results of statement 2.2 in detail. It can be seen that altogether half (32/64, 50%) of the respondents took a negative stand on statement 2.2 "*In my opinion, a pain specialist nurse is available outside office hours*". 23,4% (15/64) of the respondents disagreed and 26,6% (17/64) totally disagreed with this statement. In contrast, altogether 37,5 % (24/64) of the respondents took a positive stand (either agree or totally disagree) on this statement. Eight respondents (12,5%) did not answer the statement.

TABLE 8. Statement 2.2 "*In my opinion, a pain specialist nurse is available outside office hours*".

	n	%
No answer	8	12,5
Totally disagree	17	26,6
Disagree	15	23,4
Agree	17	26,6
Totally agree	7	10,9
Total	64	100,0

As seen in appendix 2: table 5, regardless of the respondents' work experience, most respondents were of the opinion that pain specialist nurse is not reachable outside office hours. The majority of respondents who took a negative stand (disagree or totally disagree) on statement 2.2 "*In my opinion, a pain specialist nurse is reachable outside office hours.*" had work experience of more than ten years or work experience of one to five years. Conversely, half (5/10) of the respondents with continuous work experience of less than a year in their current ward were of the opinion that pain specialist nurse is reachable outside office hours. Appendix 2: table 5 shows the results of statement 2.2 in detail according to respondents' work experience.

Appendix 2: table 6 shows that approximately half or more of the respondents in each ward took a negative stand (either disagree or totally disagree) on statement 2.2. In ward IV, half (7/14) of the respondents took a negative stand on this statement and half (7/14) a positive stand. The results of statement 2.2 according to respondents' ward are presented in detail in appendix 2: table 6.

8.2 The Pain Specialist Nurse's Expertise

The results of statement 3 are presented in detail in table 9. Majority 78,2 % (50/64) of the respondents took a positive stand (agree or totally agree) on statement 3 *“The participation of a pain specialist nurse in the care of surgical patients enables effective and quality postoperative pain management”*. The option of “totally agree” was chosen by the 43,8 % (n=28) of respondents. A negative stand (disagree or totally disagree) was taken by 7,9% (n=5) respondents of which only one respondent totally disagreed with this statement. Altogether nine respondents (14,1%) chose not to answer this statement.

TABLE 9. Statement 3 “The participation of the pain specialist nurse in the care of surgical patients enables effective and quality postoperative pain management”

	n	%
No answer	9	14,1
Totally disagree	1	1,6
Disagree	4	6,3
Agree	22	34,4
Totally agree	28	43,8
Total	64	100,0

As seen in appendix 2: table 7, regardless of the length of the respondents' work experience, most respondents were of the opinion that the participation of a pain specialist nurse in the care of a surgical patient enables effective and quality postoperative pain management. When looking at the results to statement 3 according to the respondents' ward, most of the respondents in every ward formed a positive opinion to this statement (appendix 2 table 8).

Table 10 displays the results of statement 4.1 “*A pain specialist nurse’s expertise is useful in the care of a PCA patient.*”. Altogether 90,7% (58/64) of the respondents viewed that pain specialist nurse’s expertise is useful in the care of a PCA patient. A total of 64,1% (41/64) agreed totally and 26,6% (17/64) agreed with statement 4.1. Conversely, a total of 9,4% (6/64) respondents took a negative stand on this statement. 7,8% (5/64) disagreed and 1,6% (1/64) totally disagreed. This statement was answered by all the respondents.

TABLE 10. Results of statement 4.1 “A pain specialist nurse’s expertise is useful in the care of a PCA patient.”

	n	%
No answer	0	0
Totally disagree	1	1,6
Disagree	5	7,8
Agree	17	26,6
Totally agree	41	64,1
Total	64	100,0

Appendix 2: table 9 displays the results of statement 4.1 in detail according to work experience. As it can be seen, the majority of the respondents in every group of work experience were of the opinion that a pain specialist nurse’s expertise is useful when caring for a PCA patient. For example, all (10/10) the respondents with continuous work experience of less than a year in the current ward took a positive stand (either agree or disagree) on this statement. Again, as appendix 2: table 10 shows, the majority of the respondents in spite of their ward were of the opinion that a pain specialist nurse’s expertise is useful in the care of a PCA patient.

As table 11 displays, altogether 89,1% (57/64) of the respondents took a positive stand on statement 4.2 “A pain specialist nurse’s expertise is useful in the care of patients with epidural.”. Most of them (57,8% or 37) chose the option of “totally agree”. 11% (7/64) respondents formed a negative opinion on the statement, 9,4% (6/64) disagreed and 1,6% (1/64) totally disagreed. This statement was answered by all the respondents, too.

TABLE 11. Results of statement 4.2 “A pain specialist nurse’s expertise is useful in the care of patients with epidural.”

	n	%
No answer	0	0
Totally disagree	1	1,6
Disagree	6	9,4
Agree	20	31,3
Totally agree	37	57,8
Total	64	100,0

As appendix 2: table 11 shows, the majority of respondents in every category of work experience viewed that a pain specialist nurse’s experience is useful in the care of a patient with epidural. For example, 21 respondents with work experience of more than ten years (n=22) took a positive stand (either agree or totally agree) on this statement (appendix 2: table 11). When looking at the results from the ward perspective, the majority of the respondents in different wards were of the opinion that a pain specialist nurse’s expertise is useful in the care of a patient with epidural. For example, in ward III all the respondents (13/13) either agreed or totally agreed with this statement. (appendix 2: table 12.)

Statement 4.3 “A pain specialist nurse’s expertise is useful in the care of a patient with a brachial plexus block.” was agreed or totally agreed by 70,3% (45/64) of the respondents. 37,5% (24/64) totally agreed and almost as many (32,8 % or 21/64) agreed. Negative stand was taken by altogether 21,9% (14/64) of the respondents. 18,8% (12/64) disagreed and 3,1% (2/64) totally disagreed with the statement. Five respondents (7,8%) failed to answer the statement. (table 12.) As appendix 2: table 13 shows, this statement was also agreed by most of the respondents in spite of their work experience.

TABLE 12. Results of statement 4.3 “A pain specialist nurse’s expertise is useful in the care of a patient with brachial plexus block.”

	n	%
No answer	5	7,8
Totally disagree	2	3,1
Disagree	12	18,8
Agree	21	32,8
Totally agree	24	37,5
Total	64	100,0

Appendix 2: table 14 shows that in each ward, either a half of the respondents or more took a positive stand on statement 4.3. When looking at the results ward by ward, there can be seen slightly more dispersion in the results than when looking at the results according to work experience (appendix 2: table 13). For example, in ward II half (5/10) of the respondents took a positive stand on this statement and the other half either disagreed (n=2) or did not answer the statement (n=3) (appendix 2: table 14).

8.3 Educational Aspects

As seen in table 13, the majority of respondents (87,5%, 56/64) took a positive stand (either agree or totally agree) on statement 5 *“I would like to have more education about postoperative pain management from a pain specialist nurse.”* More than half (53,1%, 34/64) of all respondents chose the option of “totally agree”. Altogether five respondents either disagreed (4/64) or totally disagreed (1/64) with this statement. Three respondents did not answer to this statement. (table 13.)

TABLE 13. Statement 5 “I would like to have more education about postoperative pain management from a pain specialist nurse.”

	n	%
No answer	3	4,7
Totally disagree	1	1,6
Disagree	4	6,3
Agree	22	34,4
Totally agree	34	53,1
Total	64	100,0

As appendix 2: table 15 shows, regardless of the respondents’ work experience, most of the respondents viewed that they would have liked to have more education about postoperative pain management from a pain specialist nurse. The majority of the respondents took unanimously a positive stand on statement 5 in spite of their ward (appendix 2: table16).

As seen in table 14, the same number (12/64, 18,8%) of respondents disagreed and agreed with statement 6 *“I would like to learn to fill the PCA cassette.”* Still, most of the respondents took a positive stand on this statement since the majority (25/64, 39,1 %) of the respondents chose the option of “totally agree”. The number of respondents who totally disagreed with this statement was 15 (23,4%). This statement was answered by all the respondents. (table 14.)

TABLE 14. Statement 6 “I would like to learn to fill the PCA cassette.”

	n	%
No answer	0	0
Totally disagree	15	23,4
Disagree	12	18,8
Agree	12	18,8
Totally agree	25	39,1
Total	64	100,0

More than half (13/22) of the respondents with work experience of more than ten years formed a negative opinion on statement 6 *“I would like to learn to fill the PCA cassette.”* Conversely, the majority of respondents who had work experience of less than ten years took a positive stand (either agree or totally agree) to this statement, and were thus willing to learn to fill the PCA cassette. (appendix 2: table 17.)

When looking at the results of statement 6 ward by ward, it can be seen that most (11/17) respondents in ward V took a negative stand. Nine of them chose the option of “totally disagree”. Half (4/8) of the respondents in ward I were of the opinion that they would like to learn to fill the PCA cassette and the other half (4/8) disagreed with this statement. In wards II, III and IV most of the respondents were of the opinion that they would like to learn to fill the PCA cassette. (appendix 2: table 18.)

As displayed in table 15, a majority of 89,1% (57/64) took a positive stand on statement 7.1 *“It would be good to have more education about analgesics.”* Almost the same number of respondents agreed (28/64, 43,8%) and totally agreed (29/64, 45,3%) with this statement. Conversely, 5/64 (7,8%) of respondents disagreed with this statement and one (1,6%) of respondents totally disagreed with this statement. This statement was left unanswered by one respondent (1,6%). (table 15.)

TABLE 15. Statement 7.1 “It would be good to have more education about analgesics.”

	n	%
No answer	1	1,6
Totally disagree	1	1,6
Disagree	5	7,8
Agree	28	43,8
Totally agree	29	45,3
Total	64	100,0

Regardless of the respondents' length of work experience, most of the respondents viewed that it would be good to have more education about analgesics (appendix 2: table 19). When comparing the wards with each other, it can be seen that most of the respondents in every ward had formed a positive opinion on statement 7.1. For example, in ward V all (14/14) of the respondents were of the opinion that it would be good to have more education about analgesics. (appendix 2: table 20.)

A majority of 60/64 (93,7%) respondents took a positive stand on statement 7.2 *"It would be good to have more education about special techniques of pain management (PCA, epidural, brachial plexus block)."* . The option of "totally agree" was chosen by 65,6% (42/64) of the respondents and "agree" by 28,6% (18/64) of the respondents. Altogether four (6,3%) respondents formed a negative opinion on this statement, three (4,7%) disagreed and one (1,6%) totally disagreed with this statement. All the respondents (100%, 64/64) answered to this statement. (table 16.)

TABLE 16. Statement 7.2 "It would be good to have more education about special techniques of pain management (PCA, epidural, brachial plexus block)."

	f	%
No answer	0	0
Totally disagree	1	1,6
Disagree	3	4,7
Agree	18	28,1
Totally agree	42	65,6
Total	64	100,0

All (10/10) respondents with work experience of less than a year and (21/21) one to five years had taken a positive stand to statement 7.2. Also most of the respondents with work experience of more than five years viewed that it would have been good to have more education on analgesics. (appendix 2: table 21.) All respondents in wards I, II and IV were of the opinion that it would be good to have more education about analgesics. Also in wards III and V, the majority of respondents took a positive stand on the statement. (appendix 2: table 22.)

As seen in table 17 almost the same number of respondents agreed (22/64, 34,4%) and disagreed (21/64, 32,8%) with statement 7.3 *"It would be good to have more education about pain assessment and pain scales."* However, the majority of respondents took a positive stand on this statement since the option of "totally agree" was chosen by 14/64 (21,9%) of respondents. One respondent (1,6%) did not answer to this statement. (table 17.)

TABLE 17. Statement 7.3 *"It would be good to have more education about pain assessment and pain scales."*

	n	%
No answer	1	1,6
Totally disagree	6	9,4
Disagree	21	32,8
Agree	22	34,4
Totally agree	14	21,9
Total	64	100,0

Most (7/9) of the respondents with work experience of six to ten years took a negative stand on statement 7.3. Respondents with work experience of less than a year, half (5/10) of them took a positive stand on this statement, and almost a half (4/10) of them took a negative side on this statement. The majority of respondents with work experience either of one to five years or more than ten years were of the opinion that it would be good to have more education on pain assessment and pain scales. (appendix 2: table 23.) In wards I (6/10) and III (7/9) the majority of the respondents took a negative stand on statement 7.3, whereas in wards II, IV and V the majority of respondents viewed that it would be good to have more education on pain assessment and pain scales. (appendix 2: table 24.)

As table 18 shows the majority of respondents (87,5%, 56/64) took a positive stand on statement 7.4 *“It would be good to have more education about observation of a patient during PCA, brachial plexus block and epidural treatment.”* The option of “agree” was the most popular (29/64, 45,3%). The option of “totally agree” was chosen almost as many times as “agree” (27/64, 42,2%). Six respondents (9,4%) disagreed with the statement and one respondent (1,6%) totally disagreed with this statement. One respondent (1,6%) did not answer to this statement. (table 18.)

TABLE 18. Statement 7.4 “It would be good to have more education about observation of a patient during PCA, brachial plexus block and epidural treatment.”

	n	%
No answer	1	1,6
Totally disagree	1	1,6
Disagree	6	9,4
Agree	29	45,3
Totally agree	27	42,2
Total	64	100,0

Regardless of the length of the respondents' work experience, most of the respondents were of the opinion that it would be good to have more education about the observation of a patient during PCA, brachial plexus block and epidural treatment (appendix 2: table 25). As seen in appendix 2: table 26, the majority of respondents in every ward took a positive stand (agree or totally agree) on this statement.

9 DISCUSSION

9.1 Acute Pain Services & Availability

The results show that majority, 73,5%, of responded surgical nurses know the contact information of a pain specialist nurse. Conversely, 26,5% of respondents stated that they do not know the contact information. Since majority agreed or totally agreed to statement “*I know the contact information of a pain specialist nurse*”, it can be interpreted that APS-organization and pain specialist nurses’ services are well known among surgical nurses.

A negative stand taken by 26,5 % of respondents could also be explained by a slight misunderstanding. Statement 1 can give a respondent an idea that they should know the contact information by heart in order to take a positive stand. A different view, taken by the authors, is that this statement should measure the surgical nurse’s knowledge of the existence of APS-organisation and the ability to find the contact information of pain specialist nurse when their services are needed.

The negative stand to statement one also can result from work experience, almost half of the respondents with working experience of less than year stated that they did not know the contact information. Whereas the nurses with more than one year of working experience from their current ward took in general a more positive stand to statement 1. Nurses with less than a year’s work experience are relatively new in organization, so they have not necessarily had time to come across with acute pain services and the need to contact them.

Statement 2.1 *“In my opinion, a pain specialist nurse is reachable during office hours”*, 95,4% of participants took a positive stand (4,7% took a negative stand). However, statement 2.2 *In my opinion, a pain specialist nurse is reachable outside office hours”* got more variance in answers, 37,5% agreed or totally agreed but a half of the respondents (50%) disagreed or totally disagreed. It should also be mentioned that 12,5% of respondents left this statement blank and since the option “do not know” was omitted, leaving this statement blank can be interpreted as a sign of not knowing whether to agree or disagree.

The availability of acute pain services is essential for the functionality and effectiveness of organization. Nevertheless, it is rare that 24-hour acute pain services can be offered in any hospital. Still the unanimous quality of pain management should be maintained throughout the postoperative period no matter the time of the day. (Mann & Carr 2009, 81.) The results from this questionnaire show an excellent availability of acute pain services during office hours. Even though, the availability outside office hours was thought to be weaker, it can be explained by the fact that expert services can mostly be provided only during office hours.

The quality standards of postoperative pain management (Salomäki & Rosenberg 2006, 851) emphasize the significance of functional organization as a part of effective postoperative care. In brief, the questionnaire results show that the surgical wards and APS-organization communicate well during office hours and the contact information is known by majority of nurses.

9.2 Expertise of a Pain Specialist Nurse

Statements 3, 4.1, 4.2 and 4.3 map the surgical nurses' expectations and opinions about expertise of pain specialist nurse. The statements handle pain specialist nurses' participation to care on a general level and pain specialist nurses' expertise in special techniques of pain management in more detail. The statements of this part also emerge from two of the role dimensions of clinical nurse specialist: direct patient care and consultation (Darmody 2005, 261).

Statement 3 *"The participation of a pain specialist in the care of surgical patients enables effective and quality postoperative pain management"* is intended to map the overall opinion the surgical nurses have about pain specialist nurses' work in postoperative pain management. Majority of nurses, 78,2 % of respondents saw pain specialist nurses' participation as a positive thing. Only 7,9 % of respondents did not agree with the statement, and 14,1% of respondents chose to not to answer this question.

Again, leaving this statement blank can be caused by the authors' choice of omitting the option of "do not know". As a result those who chose not to answer might have not formed an opinion about pain specialist nurses' work yet. However, work experience seemed not to have any effect on leaving this statement unanswered, though authors' first thought that nurses with less work experience might find it difficult to answer this question.

Statements 4.1, 4.2 and 4.3 had focus on pain specialist nurse's expertise in the care of patients with special pain management techniques as epidural analgesia, PCA and brachial plexus block. A positive trend was seen in the answers about the pain specialist nurse's participation in the care of patients with PCA and epidural analgesia. 90,7 % of respondents felt that the expertise of pain specialist nurse is useful when caring for PCA-patients and 89% of respondents when caring for patients with epidural analgesia.

More variance was seen in the statement 4.3 about a pain specialist nurse's participation in care of the patients with brachial plexus block. 70,3 % of respondents took a positive stand and 21,9 % of respondents a negative stand. However, it must be noted that brachial plexus block is used only in postoperative pain management of patients with hand surgery and this kind of patients are not cared in all of the participant wards.

Surprisingly, despite working experience, all the respondents are unanimous about the importance of pain specialist nurses' participation in the care of patients and the expert knowledge they have about special techniques of pain management. The authors had an idea that nurses with more experience might find the participation of a pain specialist nurse less important in patient care. Since patients with epidurals, PCAs and brachial plexus blocks are routinely cared in regular wards, the nurses with a lot of experience might be more skilful in mastering the specialized techniques. However, the questionnaire findings do not support this kind of idea.

Questionnaire results show that pain specialist nurses' expertise in postoperative pain management is valued in patient care by the surgical nurses. On the contrary, it can also be considered that expertise is expected from pain specialist nurses in postoperative pain management both in direct care-giving and consultation situations.

9.3 Educational Aspects

The surgical wards were asked about education given by a pain specialist nurse and APS-team in statements 5, 6, 7.1, 7.2, 7.3 and 7.4. By the statement 5 authors wished to find out if the nurses in surgical wards want to receive education given by pain specialist nurse. Statements 7.1, 7.2, 7.3 and 7.4 take a closer look at possible contents of education and educational needs in surgical wards. The statement 6 maps the surgical nurses' willingness to learn to fill a PCA-cassette. The current practice is that PCA-cassettes are taken to post-anaesthesia care unit to be filled. This statement intends therefore measure what kind of attitudes there are towards changing the current practice. The statements mentioned previously are derived from the educational role that is part of clinical nurse specialist's work (Darmody 2005, 261).

Generally, respondents wished to get more education from a pain specialist nurse, 87,5% of respondents took a positive stand on the statement 5. When asked about the contents of education, the most wanted topic was education about special techniques of pain management. The second popular topic was observation of patients when special techniques are used and the third popular topic was analgesics. Education about pain scales and pain assessment was a less popular topic and got more varied response, 56,3 % of respondents took a positive stand and 42,2 % of respondents a negative stand.

The statement 6 divided opinions of respondents. 57,9% took a positive stand and 42,2% a negative stand. With this statement there was some variance in the results between the respondents with different work experience and on different wards. The respondents with work experience of more than ten years were the only work experience group where the majority did not want to learn to fill in a PCA cassette, whereas the majority of respondents with work experience of less than ten years were willing to learn to fill in a PCA cassette. This kind of result was somehow expected by the authors, however, the number of respondents in each work experience category was still so small, that no general conclusions can be drawn from the results.

Ward specific differences could also be seen since the majority of respondents in ward V did not want to learn to fill in a PCA cassette, and in ward I half of the respondents wanted to learn and the other half did not. This kind of variance between the wards could be maybe explained by how frequently different wards have patients with PCA patients. Thus, it could be perhaps interpreted that in wards where PCA patients are cared more often, the eagerness to learn to fill in PCA cassette is greater.

10 CONCLUSIONS AND RECOMMENDATIONS

In general, the questionnaire results show that the surgical ward nurses appreciate highly the education and expertise offered by the pain specialist nurse. It could be stated that they also expect and wish the pain specialist nurse to provide education about postoperative pain management and special pain relief techniques for them. This kind of way of thinking can be supported by other research findings (Breivik 2002, 528-538) as well.

The work of pain specialist nurse can be perceived through the role dimensions or spheres of influence of clinical specialist nurse (Darmody 2006, 260-267; Zuzelo 2003, 369-371). The questionnaire results in this thesis demonstrate well the nurse and nursing sphere of influence. The nurses and nursing sphere includes both consultation possibilities and education which were emerging themes in questionnaire results. The questionnaire results can also be illustrated with the role dimensions of direct patient care, education and consultation.

In order to provide effective and quality postoperative pain management, special pain relief techniques (PCA; epidural analgesia and brachial plexus block) ought to be implemented when appropriate also on surgical wards. Providing special pain relief methods on wards requires the surgical nurses to be competent and confident enough in caring patients with that kind of postoperative pain management regimen (Breivik 2002, 528-538). Adequate competence level is then enabled by the organizational model of acute pain services and pain specialist nurse that provide, among other things, consultation and education about special pain relief methods. Hence, the consultation possibilities and routine rounds by a pain specialist nurse guarantee the expert part in care of postoperative patients. All in all, the quality of postoperative pain management must be unanimous at all times and it is essential that surgical nurses are able to implement care and learn from pain specialist nurses' expertise. (Mann & Carr 2009, 81.)

The findings of this thesis can be applied in the development process of a job description of a pain specialist nurse. Especially these results describe the work of a pain specialist nurse from the point of view of the nurses in surgical wards. Future research topics could delve into a pain specialist nurse's role in care of chronic pain patients or patient experiences of a pain specialist nurse's participation in care. A more careful look could also be taken into a pain specialist nurse's work and role in APS-organization from an anaesthesiologist's point of view.

REFERENCES

- Arminen, S., Kallakorpi, S., Kotila, J., Martin, J., Nurminen, M., Rauta, S., Ritmala-Castren, M. & Savolainen, T. 2008. Kliininen asiantuntijuus organisaation menestystekijäksi – Mitä siihen tarvitaan? *Sairaanhoitaja* 81 (5), 24-26.
- Bamford, O. & Gibson, F. 2000. The Clinical Nurse Specialist: perceptions of practicing CNSs of their role and development needs. *Journal of Clinical Nursing* 9, 282-292.
- Benner, P. 1984. *From Novice to Expert. Excellence and Power in Clinical Nursing Practice*. Menlo Park, California: Addison-Wesley Publishing Company, Nursing Division.
- Benner, P.E., Tanner, C.A. & Chesla, C.A. 2009. *Expertise in Nursing Practice: Caring, Clinical Judgment and Ethics*. 2nd edition. Springer Publishing Company.
- Bobay, K.L. 2004. Does experience really matter? *Nursing Science Quarterly* 17 (4), 313-316.
- Breivik, H. 2002. How to implement an acute pain service. *Best Practice and Research Clinical Anaesthesiology*. 16 (4), 527-547.
- Bäckström, R. & Rawal, N. 2008. Acute Pain Service – What it is and why it is and what is next? *European Journal of Pain Supplements* 2, 40-43.
- Carr, E., Layzell, M. & Christensen, M. 2009. *Advancing Nursing Practice In Pain Management*. Wiley-Blackwell.
- Collins Cobuild English Dictionary for Advanced Learners. 2001. 3rd edition. Westerhill Road, Bishopbriggs, Glasgow: HarperCollins Publishers.
- Collins New English Dictionary. 1997. HarperCollins Publishers.
- Consensus Model for APRN Regulation: Licensure, Accreditation, Certification & Education. 2008. APRN Consensus Work Group & National Council of State Boards of Nursing APRN Advisory Committee. Read 6.3.2011. https://www.ncsbn.org/Consensus_Model_for_APRN_Regulation_July_2008.pdf
- Courtenay, M. & Carey, N. 2008. The impact and effectiveness of nurse-led care in the management of acute and chronic pain: a review of the literature. *Journal of Clinical Nursing*. Pain review. 2001-2013. Blackwell Publishing Ltd.
- Daly, W.M. & Carnwell, R. 2003. Nursing roles and levels of practice: a framework for differentiating between elementary, specialist and advancing nursing practice. *Journal of Clinical Nursing* 12, 158–167.

Darmody, J.V. 2005. Observing the work of the Clinical Nurse Specialist. A Pilot study. *Clinical Nurse Specialist* 19 (5), 260-268.

Delamaire, M-L. & Lafortune, G. 2010. Nurses in Advanced Roles: A Description and Evaluation of Experiences in 12 Developed Countries. OECD Health Working Paper no.54. Read 5.10.2011. <http://www.oecd.org/els/health/workingpapers>

Elsom, S., Happell, B. & Manias, E. 2006. The clinical nurse specialist and nurse practitioner roles: room for both or take your pick? *Australian Journal of Advanced Nursing* 24 (2), 56-59.

Erikoissairaanhoitolaki 1.12.1989/1062

Fagerström, L. 2009. Developing the scope of practice and education for advanced practice nurses. *International Nursing Review* 56, 269-272.

Fain, J.A. 2009. Reading, Understanding and Applying Nursing Research. 3rd edition. Philadelphia: F.A. Davis Company.

Finnish Nurses Association. 1996. Ethical Guidelines of Nursing. Read 6.2.2011. http://www.sairaanhoitajaliitto.fi/sairaanhoitajan_tyo_ja_hoitotyon/sairaanhoitajan_tyo/sairaanhoitajan_eettiset_ohjeet/ethical_guidelines_of_nursing/

Graham, I. Fielding, C. Rooke, D. & Keen, S. 2006. Practice development 'without walls' and the quandary of corporate practice. *Journal of Clinical Nursing* 15, 980-988.

Hamunen, K. & Kalso, E. 2009. Vamman ja leikkauksen jälkeinen kipu. In Kalso, E., Haanpää, M. & Vainio, A. (eds.) 2009. *Kipu*. Helsinki: Kustannus Oy Duodecim.

Hopia, H., Räsänen, M., Lipponen, V. & Liimatainen, L. 2010. Uusi urapolku hoitotyön kliiniseen asiantuntijuuteen. *Sairaanhoitaja* 83 (8), 53-56.

International Council of Nurses. 2011. Definition and Characteristics of the Role. Read 5.10.2011 [http:// icn-apnetwork.org](http://icn-apnetwork.org)

Kalso, E., Elomaa, M., Estlander, A-M. & Granström, V. Akuutti ja krooninen kipu. 2009. In Kalso, E., Haanpää, M. & Vainio, A. (eds.) 2009. *Kipu*. Helsinki: Kustannus Oy Duodecim.

Kassara H., Paloposki S., Holmia S., Murtonen I., Lipponen V., Ketola M-L. & Hietanen H. 2006. Hoitotyön osaaminen. Helsinki: Werner Söderström osakeyhtiö, p. 350-362.

Kitowski, T. & McNeil, H. 2002. Evaluation of an Acute Pain Service. *Journal of PeriAnesthesia Nursing* 17 (1), 21-29.

Koivusalo, A-M. 2005. Kipusairaanhoidajina työskentelevien sairaanhoitajien toimenkuvat. Kysely keväällä 2005. Suomen kivuntutkimusyhdistyksen toimeksianto.

Korhonen, A. 2009. Asiantuntijuuden hyödyntämisestä osaamista ja voimaa hoitotyöhön. Tutkiva Hoitotyö 2/2009, 3.

Laki terveydenhuollon ammattihenkilöistä 28.6.1994/559

Leppänen, N. & Puupponen, A. 2009. Hoitotyön asiantuntija- käsitteen määrittelyä: systemaattinen kirjallisuuskatsaus. Jyväskylä: Keski-Suomen sairaanhoitopiiri

Mann, E.M. & Carr, E.C.J. 2009. Pain. Creative Approaches To Effective Management. 2nd revised edition. Palgrave Macmillan.

Meretoja, R. Isoaho, H. & Leino-Kilpi, H. 2004. Nurse Competence Scale: development and psychometric testing. Journal of Advanced Nursing 47 (2), 124–133.

Opetusministeriö. 2006. Ammattikorkeakoulusta terveydenhuoltoon. Koulutuksesta valmistuvien ammatillinen osaaminen, keskeiset opinnot ja vähimmäisopinnot. Opetusministeriön työryhmämuistioita ja selvityksiä 2006:24. <http://www.miniedu.fi/julkaisut/index.html>. Read 6.2.2011.

Polit, D.F. 1996. Data Analysis & Statistics for Nursing Research. Connecticut: Appleton & Lange.

Polit, D.F. & Beck, C.T. 2010. Nursing Research. Appraising Evidence for Nursing Practice. 7th edition. Philadelphia: Wolters Kluwer | Lippincott Williams & Wilkins.

Polit, D.F. & Beck, C.T. 2012. Nursing Research. Generating and Assessing Evidence for Nursing Practice. 9th edition. Philadelphia: Wolters Kluwer | Lippincott Williams & Wilkins.

Polit, D.F. & Hungler, B.P. 1995. Nursing Research. Principles and Methods. 5th edition. Philadelphia: J.B. Lippincott Company.

Roberts-Davies, M. & Read, S. 2001. Clinical role clarification: using the Delphi method to establish similarities and differences between Nurse Practitioners and Clinical Nurse Specialists. Journal of Clinical Nursing 10, 33-43.

Rose, S.B., All, A.C. & Gresham, D. 2002. Role Preservation of the Clinical Nurse Specialist and the Nurse Practitioner. Internet Journal of Advanced Nursing Practice 5 (2), 10-24.

Richards, J. & Hubbert, A.O. 2007. Experiences of Expert Nurses in Caring for Patients with Postoperative Pain. Pain Management Nursing 8 (1), 17-24.

Sailo, E. & Vartti, A-M. (eds.) 2000. Kivunhoito. Tampere: Tammer-Paino Oy.

Salanterä, S. Hagelberg, N. Kauppila, M. & Närhi, M. 2006. Kivun hoitotyö. 1. painos. Helsinki: WSOY oppimateriaalit Oy.

Salomäki, T. & Rosenberg, T. 2006. Leikkauksen jälkeinen kivunhoito. In Rosenberg, T., Alahuhta, S., Lindgren, L., Olkkola, K. & Takkunen, O. (eds.) 2006. Anestesiologia ja tehohoito. 2nd, revised edition. Helsinki: Kustannusosakeyhtiö Oy Duodecim.

Shapiro A., Zohar, E., Kantor, M. Memrod, J.& Fredman, B. 2004. Eshtablishing a Nurse-Based, Anaesthesiologist-Supervised Inpatient Acute Pain Service: Experience of 4,617 Patients. *Journal of Clinical Anaesthesia* 16, 415-420.

Taylor, A. & Stanbury, L. 2009. A review of postoperative pain management and the challenges. *Current Anaesthesia and Critical Care* 20, 188-194.

Tornivuori A. & Viitanen O. 2000. Leikkauksen jälkeinen kivunhoito asiantuntijasairaanhoidajan näkökulmasta Meilahden sairaalassa (HYKS). *Kipuviesti* 21-24.

Warrén Stomberg, M. & Haljamäe, H.2003. Acute Pain Services. *Current Anaesthesia & Critical Care* 14, 211-215.

Warrén Stomberg, M. & Haljamäe, H. 2003. Post-operative pain management – impact of quality assurance and audit documentation on clinical outcome. *Current Anaesthesia & Critical Care* 14, 217-221.

Werner, M.U. & Nielsen P.R. 2007. The acute pain service: Present and future role. *Current Anaesthesia & Critical Care* 18, 135-139.

Willens, J.S. DePascale, C. & Penny J. 2010. Role Delineation Study for the American Society for Pain Management Nursing. *Pain Management Nursing*. 11 (2), 68-75.

Zuzelo, P. R. 2003. Clinical Nurse Specialist Practice - Spheres of Influence. *AORN Journal*. 77 (2), 361- 372. *Current Anaesthesia & Critical Care* 14, 211-215.

APPENDIX 1: 1(3)

**Hyvä kirurgisen vuodeosaston sairaanhoitaja,**

Teemme opinnäytetyömme Tampereen ammattikorkeakoulussa yhteistyössä Pirkanmaan sairaanhoitopiirin kanssa. Opinnäytetyön tarkoituksena on kartoittaa kirurgisten vuodeosastojen sairaanhoitajien odotuksia ja mielipiteitä kipuhoidajatoiminnasta postoperatiivisessa kivunhoidossa.

Tutkimus toteutetaan oheisella kyselylomakkeella, jossa on kipuhoidajatoimintaa koskevia väittämiä vastausvaihtoehtoineen. Kyselyyn vastaaminen on täysin vapaaehtoista, mutta vastauksesi on todella arvokas kipuhoidajatoiminnan kehittämisen ja tutkimuksen onnistumisen kannalta. Vastaaminen vie vain hetken. Kyselyyn vastataan nimettömästi ja kaikki vastaukset käsitellään ehdottoman luottamuksellisesti. Vastaajaa ei voida tunnistaa vastauksesta eikä julkaistavista tuloksista.

Tutkimukseen osallistuu viisi kirurgista vuodeosastoa, joilla kysely toteutetaan maaliskuussa 2011. Tutkimustuloksia käytetään kipuhoidajatoiminnan kehittämiseen ja kipuhoidajan työnkuvan tarkentamiseen. Tutkimustulokset julkaistaan marraskuussa 2011 valmistuvassa opinnäytetyössämme sekä esitetään anestesiaosastolla marraskuussa 2011. Lisäksi tulokset esitellään ”TAMK tutkii ja kehittää” – päivänä järjestettävässä seminaarissa loppuvuodesta 2011. Tulokset raportoidaan myös tutkimukseen osallistuneille osastoille.

Vastaamme mielellämme tutkimukseen liittyviin kysymyksiin.

Kiitämme avustasi jo etukäteen!

Ystävällisesti,

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KIPUHOITAJAKYSELY

2 (3)

Tällä lomakkeella on väitteitä kipuhoidajatoimintaan liittyen. Vastausvaihtoehdot ovat 1-4, 1=täysin eri mieltä, 2=jokseenkin eri mieltä, 3=jokseenkin samaa mieltä, 4=täysin samaa mieltä

Valitse mielipidettäsi parhaiten kuvaava vaihtoehto kunkin väittämän kohdalla

1. Tiedän kipuhoidajan yhteystiedot.	1	2	3	4
2. Mielestäni kipuhoidaja on tavoitettavissa:				
2.1 virka-aikana	1	2	3	4
2.2 päivystysaikana	1	2	3	4
3. Kipuhoidajan osallistuminen leikkauspotilaan hoitoon mahdollistaa tehokkaan ja laadukkaan postoperatiivisen kivunhoidon.	1	2	3	4
4. Kipuhoidajan asiantuntijuudesta on hyötyä:				
4.1 PCA-potilaiden hoidossa	1	2	3	4
4.2 Epiduraalipotilaiden hoidossa	1	2	3	4
4.3 Kestoplexuspotilaiden hoidossa	1	2	3	4
5. Toivoisin kipuhoidajan antavan lisäkoulutusta postoperatiivisesta kivunhoidosta.	1	2	3	4
6. Olen halukas oppimaan PCA-kasetin täyttämisen.	1	2	3	4
7. Osastotunteja olisi hyvä pitää...				
7.1 Kipulääkkeistä	1	2	3	4
7.2 Kivunhoidon erikoistekniikoista (PCA, epiduraali, kestoplexus)	1	2	3	4
7.3 Kivun arvioinnista /kipumittarien käytöstä	1	2	3	4
7.4 Potilaan tarkkailusta PCA-, kestoplexus- tai epiduraalikivunhoidon aikana	1	2	3	4

TAUSTATIEDOT

Osasto: _____

Yhtäjaksoinen työkokemus nykyiseltä osastolta:

- Alle 1 vuosi
- 1-5 vuotta
- 6-10 vuotta
- Enemmän kuin kymmenen vuotta

APPENDIX 2: 1 (13)

STATEMENT 1 "I know the contact information of a pain specialist nurse."

TABLE 1. Results of statement 1 according to the respondents' work experience

	Continuous work experience in the current ward					Total
	Information missing	Less than a year	1-5 years	6-10 years	More than 10 years	
No answer	0	1	2	0	2	5
Totally disagree	1	1	0	1	1	4
Disagree	0	3	4	1	0	8
Agree	0	4	3	0	2	9
Totally agree	1	1	12	7	17	38
Total	2	10	21	9	22	64

TABLE 2. Results of statement 1 according to respondents' ward.

	Ward						Total
	Information missing	Ward I	Ward II	Ward III	Ward IV	Ward V	
No answer	0	0	1	1	3	0	5
Totally disagree	1	1	0	0	0	2	4
Disagree	0	1	1	2	1	3	8
Agree	0	2	0	2	5	0	9
Totally agree	1	4	8	8	5	12	38
Total	2	8	10	13	14	17	64

(continues)

2 (13)

STATEMENT 2.1 “In my opinion, a pain specialist nurse is reachable during office hours.”

TABLE 3.

Results of statement 2.1 according to the respondents' work experience

	Continuous work experience in the current ward					Total
	Information missing	Less than a year	1-5 years	6-10 years	More than 10 years	
No answer	0	1	1	0	0	2
Totally disagree	0	0	0	1	0	1
Disagree	0	0	0	0	0	0
Agree	0	1	5	1	5	12
Totally agree	2	8	15	7	17	49
Total	2	10	21	9	22	64

TABLE 4. Results of statement 2.1 according to respondents' ward

	Ward						Total
	Information missing	Ward I	Ward II	Ward III	Ward IV	Ward V	
No answer	0	0	0	1	1	0	2
Totally disagree	0	0	0	0	0	1	1
Disagree	0	0	0	0	0	0	0
Agree	0	2	1	4	3	2	12
Totally agree	2	6	9	8	10	14	49
Total	2	8	10	13	14	17	64

3 (13)

STATEMENT 2.2 "In my opinion, a pain specialist nurse is reachable outside office hours."

TABLE 5.

Results of statement 2.2 according to the respondents' work experience

	Continuous work experience in the current ward					Total
	Information missing	Less than a year	1-5 years	6-10 years	More than 10 years	
No answer	1	2	0	4	1	8
Totally disagree	0	3	5	2	7	17
Disagree	0	0	7	1	7	15
Agree	0	5	6	2	4	17
Totally agree	1	0	3	0	3	7
Total	2	10	21	9	22	64

TABLE 6. Results of statement 2.2 according to the respondents' ward

	Ward						Total
	Information missing	Ward I	Ward II	Ward III	Ward IV	Ward V	
No answer	1	1	1	3	0	2	8
Totally disagree	0	2	4	3	1	7	17
Disagree	0	1	1	3	6	4	15
Agree	0	4	3	2	5	3	17
Totally agree	1	0	1	2	2	1	7
Total	2	8	10	13	14	17	64

4 (13)

STATEMENT 3 “The participation of a pain specialist nurse in the care of surgical patients enables effective and quality postoperative pain management.”

TABLE 7.

Results of statement 3 according to the respondents' work experience

	Continuous work experience in the current ward					Total
	Information missing	Less than a year	1-5 years	6-10 years	More than 10 years	
No answer	0	3	3	0	3	9
Totally disagree	0	0	0	1	0	1
Disagree	0	2	0	0	2	4
Agree	1	0	11	5	5	22
Totally agree	1	5	7	3	12	28
Total	2	10	21	9	22	64

TABLE 8.

Results of statement 3 according to the respondents' ward.

	Ward						Total
	Information missing	Ward I	Ward II	Ward III	Ward IV	Ward V	
No answer	0	0	2	3	3	1	9
Totally disagree	0	0	0	0	0	1	1
Disagree	0	1	0	0	1	2	4
Agree	1	4	5	3	5	4	22
Totally agree	1	3	3	7	5	9	28
Total	2	8	10	13	14	17	64

5 (13)

STATEMENT 4.1 “A pain specialist nurse’s expertise is useful in the care of a PCA patient.”

TABLE 9.
Results of statement 4.1 according to the respondents’ work experience

	Continuous work experience in current ward					Total
	Information missing	Less than a year	1-5 years	6-10 years	More than 10 years	
No answer	0	0	0	0	0	0
Totally disagree	0	0	0	1	0	1
Disagree	0	0	2	2	1	5
Agree	1	1	8	2	5	17
Totally agree	1	9	11	4	16	41
Total	2	10	21	9	22	64

TABLE 10. Results of statement 4.1 according to the respondents’ ward

	Ward						Total
	Information missing	Ward I	Ward II	Ward III	Ward IV	Ward V	
No answer	0	0	0	0	0	0	0
Totally disagree	0	0	0	0	0	1	1
Disagree	0	2	1	0	1	1	5
Agree	1	0	4	4	4	4	17
Totally agree	1	6	5	9	9	11	41
Total	2	8	10	13	14	17	64

6 (13)

STATEMENT 4.2 “A pain specialist nurse’s expertise is useful in the care of a patient with epidural.”

TABLE 11.

Results of statement 4.2 according to the respondents’ work experience

	Continuous work experience in the current ward					Total
	Information missing	Less than a year	1-5 years	6-10 years	More than 10 years	
No answer	0	0	0	0	0	0
Totally disagree	0	0	0	1	0	1
Disagree	0	2	2	1	1	6
Agree	1	4	8	2	5	20
Totally agree	1	4	11	5	16	37
Total	2	10	21	9	22	64

TABLE 12. Results of statement 4.2 according to the respondents ward

	Ward						Total
	Information missing	Ward I	Ward II	Ward III	Ward IV	Ward V	
No answer	0	0	0	0	0	0	0
Totally disagree	0	0	0	0	0	1	1
Disagree	0	1	2	0	2	1	6
Agree	1	2	3	5	5	4	20
Totally agree	1	5	5	8	7	11	37
Total	2	8	10	13	14	17	64

7 (13)

STATEMENT 4.3 “A pain specialist nurse’s expertise is useful in the care of a patient with brachial plexus block.”

TABLE 13.

Results of statement 4.3 according to the respondents’ work experience

	Continuous work experience in the current ward					Total
	Information missing	Less than a year	1-5 years	6-10 years	More than 10 years	
No answer	0	1	2	0	2	5
Totally disagree	0	0	0	1	1	2
Disagree	0	2	6	2	2	12
Agree	1	4	7	4	5	21
Totally agree	1	3	6	2	12	24
Total	2	10	21	9	22	64

TABLE 14. Results of statement 4.3 according to the respondents’ ward

	Ward						Total
	Information missing	Ward I	Ward II	Ward III	Ward IV	Ward V	
No answer	0	0	3	2	0	0	5
Totally disagree	0	0	0	1	0	1	2
Disagree	0	2	2	2	1	5	12
Agree	1	3	4	4	6	3	21
Totally agree	1	3	1	4	7	8	24
Total	2	8	10	13	14	17	64

8 (13)

STATEMENT 5 “I would like to have more education about postoperative pain management from a pain specialist nurse.”

TABLE 15.

Results of statement 5 according to the respondents' work experience

	Continuous work experience in the current ward					Total
	Information missing	Less than a year	1-5 years	6-10 years	More than 10 years	
No answer	0	1	0	0	2	3
Totally disagree	0	0	0	1	0	1
Disagree	0	0	2	0	2	4
Agree	1	1	9	3	8	22
Totally agree	1	8	10	5	10	34
Total	2	10	21	9	22	64

TABLE 16.

Results of statement 5 according to the respondents' ward

	Ward						Total
	Information missing	Ward I	Ward II	Ward III	Ward IV	Ward V	
No answer	0	0	1	1	0	1	3
Totally disagree	0	0	0	0	0	1	1
Disagree	0	0	1	0	1	2	4
Agree	1	2	3	5	6	5	22
Totally agree	1	6	5	7	7	8	34
Total	2	8	10	13	14	17	64

STATEMENT 6 "I would like to learn to fill in the PCA cassette."

TABLE 17.

Results of statement 6 according to the respondents' work experience

	Continuous work experience in the current ward					Total
	Information missing	Less than a year	1-5 years	6-10 years	More than 10 years	
No answer	0	0	0	0	0	0
Totally disagree	0	1	3	2	9	15
Disagree	1	2	5	0	4	12
Agree	0	3	2	4	3	12
Totally agree	1	4	11	3	6	25
Total	2	10	21	9	22	64

TABLE 18. Results of statement 6 according to the respondents' ward.

	Ward						Total
	Information missing	Ward I	Ward II	Ward III	Ward IV	Ward V	
No answer	0	0	0	0	0	0	0
Totally disagree	0	0	2	3	1	9	15
Disagree	1	4	1	1	3	2	12
Agree	0	0	3	6	1	2	12
Totally agree	1	4	4	3	9	4	25
Total	2	8	10	13	14	17	64

10 (13)

STATEMENT 7.1 "It would be good to have more education about analgesics."

TABLE 19.

Results of statement 7.1 according to the respondents' work experience

	Continuous work experience in the current ward					Total
	Information missing	Less than a year	1-5 years	6-10 years	More than 10 years	
No answer	0	1	0	0	0	1
Totally disagree	0	0	0	1	0	1
Disagree	0	1	1	1	2	5
Agree	1	5	12	3	7	28
Totally agree	1	3	8	4	13	29
Total	2	10	21	9	22	64

TABLE 20. Results of statement 7.1 according to the respondents' ward

	Ward						Total
	Information missing	Ward I	Ward II	Ward III	Ward IV	Ward V	
No answer	0	0	0	1	0	0	1
Totally disagree	0	0	0	0	0	1	1
Disagree	0	1	1	0	0	3	5
Agree	1	4	5	8	7	3	28
Totally agree	1	3	4	4	7	10	29
Total	2	8	10	13	14	17	64

11 (13)

STATEMENT 7.2 “It would be good to have more education about special techniques of pain management (PCA, epidural, brachial plexus block).”

TABLE 21.

Results of statement 7.2 according to the respondents' work experience

	Continuous work experience in the current ward					Total
	Information missing	Less than a year	1-5 years	6-10 years	More than 10 years	
No answer	0	0	0	0	0	0
Totally disagree	0	0	0	1	0	1
disagree	0	0	0	1	2	3
agree	0	3	7	2	6	18
totally agree	2	7	14	5	14	42
Total	2	10	21	9	22	64

TABLE 22. Results of statement 7.2 according to the respondents' ward.

	Ward						Total
	Information missing	Ward I	Ward II	Ward III	Ward IV	Ward V	
No answer	0	0	0	0	0	0	0
Totally disagree	0	0	0	0	0	1	1
disagree	0	0	0	1	0	2	3
Agree	0	2	4	5	4	3	18
Totally agree	2	6	6	7	10	11	42
Total	2	8	10	13	14	17	64

12 (13)

STATEMENT 7.3 "It would be good to have more education about pain assessment and pain scales."

TABLE 23.

Results of statement 7.3 according to the respondents' work experience.

	Continuous work experience in the current ward					Total
	Information missing	Less than a year	1-5 years	6-10 years	More than 10 years	
No answer	0	1	0	0	0	1
Totally disagree	0	1	0	1	4	6
Disagree	1	3	8	6	3	21
Agree	1	3	9	2	7	22
Totally agree	0	2	4	0	8	14
Total	2	10	21	9	22	64

TABLE 24. Results of statement 7.3 according to the respondents' ward

	Ward						Total
	Information missing	Ward I	Ward II	Ward III	Ward IV	Ward V	
No answer	0	0	0	1	0	0	1
Totally disagree	0	1	1	0	2	2	6
Disagree	1	5	1	7	3	4	21
Agree	1	1	6	4	4	6	22
Totally agree	0	1	2	1	5	5	14
Total	2	8	10	13	14	17	64

13 (13)

STATEMENT 7.4 “It would be good to have more education about observation of a patient during PCA, brachial plexus block and epidural treatment.”

TABLE 25.

Results of statement 7.4 according to the respondents' work experience

	Continuous work experience in the current ward					Total
	Information missing	Less than a year	1-5 years	6-10 years	More than 10 years	
No answer	0	1	0	0	0	1
Totally disagree	0	0	0	0	1	1
Disagree	0	1	3	1	1	6
Agree	1	4	10	5	9	29
Totally agree	1	4	8	3	11	27
Total	2	10	21	9	22	64

TABLE 26. Results of statement 7.4 according to the respondents' ward

	Ward						Total
	Information missing	Ward I	Ward II	Ward III	Ward IV	Ward V	
No answer	0	0	0	1	0	0	1
Totally disagree	0	0	0	0	1	0	1
Disagree	0	1	1	1	2	1	6
Agree	1	3	5	9	4	7	29
Totally agree	1	4	4	2	7	9	27
Total	2	8	10	13	14	17	64