Experiences of Pain in Elderly Patients Having Total Knee Arthroplasty

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EXPERIENCES OF PAIN IN ELDERLY PATIENTS HAVING 
TOTAL KNEE ARTHROPLASTY

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Patients experiencing postoperative pain are at an increased risk for developing life-threatening complications. Effective interventions for pain relief exist, but are underutilized. The reasons for the under use of interventions need to be identified so that changes in nursing practice can occur. The purpose of this study was to increase the understanding of the postoperative pain experience following total knee arthroplasty from elderly patients’ perspective. Hermeneutic phenomenology was used to guide this study. Fifteen patients, nine women and six men, who had total knee arthroplasty participated in this study. Ages ranged from 66 to 86 years. Purposeful suffering is the pattern that described the meaning of the participants’ postoperative pain experience. Purposeful suffering is an acceptance of the postoperative pain and a willingness to endure the pain in order to achieve better mobility with little or no pain. The common experiences of the participants emerged in three themes: anticipating pain, living the pain, and managing the pain. Participants believed that pain was a necessary experience following surgery. Participants trusted their nurses to know how to best care for them following surgery and relied on the nurses to manage their pain. Participants’ lack of knowledge about postoperative pain combined with their trust and reliance on nurses for pain management resulted in participants’ suffering with postoperative pain. The suffering was purposeful for the participants because they believed that the result of enduring the pain would be a healed knee. Nurses need to
evaluate patients’ beliefs about postoperative pain so that misconceptions can be resolved.

Understanding the experience of pain from the elderly patient’s perspective following total knee arthroplasty provided new insight into the postoperative pain experience.

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I. BACKGROUND OF THE STUDY

Statement of the Problem

Unrelieved postoperative pain is a clinical problem facing nurses today. Postoperative pain can cause suffering and increases the risk for developing postoperative complications. Postoperative complications associated with uncontrolled pain include deep vein thrombosis and atelectasis (Buck & Paice, 1994; Curtiss, 2001; Lotke, 1998). Early mobility is believed to be crucial in preventing these complications, making adequate pain control imperative (Messer, 1998; Nendick, 2000). Early mobility, shortened hospital stay, and reduced costs are some of the benefits of adequate pain management identified by the former Agency for Health Care Policy and Research (AHCPR) (AHCPR, 1992). Delayed healing and complications prolong hospital stays that often result in additional suffering and expense for patients and decreased profits for hospitals. Research is needed to determine ways to change practice and best meet patients’ needs in regard to pain.

Several national agencies have tried to address the problem of acute surgical pain (AHCPR, 1992; American Pain Society, 1995; Joint Commission on Accreditation of Healthcare Organizations [JCAHO], 2001). Despite the national attention over the last 10 years, surgical patients continue to report inadequate pain relief. Seventy-five percent of surgical patients report inadequate pain relief (Curtiss, 2001; Mayer, Torma, Byock, & Norris, 2001; Phillips, 2000).
Perioperative nurses have developed a mid-range theory that can be used as the basis for their nursing practice. This model, the Perioperative Patient Focused Model, was developed by AORN, the Association of periOperative Registered Nurses (AORN, 2000). In this model two patient outcomes are identified to correct the problem of pain, including “patient outcome 3.5, the patient demonstrates knowledge of pain management,” and “patient outcome 5.1, the patient demonstrates and/or reports adequate pain control throughout the perioperative period” (AORN, 2000, pp. 101 & 135). In order to meet these outcome criteria the nurse needs to have an understanding of what the pain experience is like for the patient, what interventions are most effective in controlling pain, and how patients prefer to have their pain treated. The Perioperative Patient Focused Model was used in this study to substantiate the need for understanding the pain experienced by patients having total knee arthroplasty.

Total knee arthroplasty is one of the most common surgeries performed in the United States with 211,000 being performed on patients 65 years of age or older in 2000 (CDC, 2003). Ginsberg (2001) identified that patients undergoing knee surgery experience moderate to severe postoperative pain that sometimes interferes with and delays recovery. The research that has been done regarding pain management after total joint surgery has focused on the effectiveness of analgesia (Colwell & Morris, 1995; Flory, Fankhauser, & McShane, 2001; Singelyn & Gouverneur, 1999) and has evaluated scales used to measure pain (Briggs & Closs, 1999). No qualitative studies could be found that examined pain from the patient’s perspective.
As a result of the degenerative effects of osteoarthritis, total knee arthroplasty is often required to relieve pain and restore function. Osteoarthritis is an insidious, slowly progressive disease that affects almost all people at some time in their life and may result in reduced quality of life and loss of independence (Gabel, 1999). Osteoarthritis is a common cause of disability in older adults (Mahomed, Lin, Levesque, Lan, & Bogoch, 2000). Loeser (2000) stated that close to 100% of the population have histologic changes of degeneration in their knee cartilage by age 60 years. Furthermore, the number of people with arthritis disability will double by the year 2020 due to the aging of the population (Bradley & Crotty, 1995). The number of patients who will require surgery to treat arthritis also will increase. Thus, it is imperative that effective interventions for the treatment of pain following surgery are identified and implemented.

Osteoarthritis causes the normal, smooth gliding surface of the joint cartilage to become rough and develop fissures, which may lead to the pain caused by bone on bone grinding (Loeser, 2000). Total knee arthroplasty is performed to treat this pain as well as to restore functional ability of the knee. Achieving the best possible patient outcomes following surgery requires attention to all areas of care including pain management.

The inability to control postoperative pain for a majority of patients is a reality despite the available pharmacology and technology. With current knowledge of interventions to control pain the majority of patients should have little to no postoperative pain. Controlling postoperative pain is an essential component in facilitating healing and preventing complications. Understanding what patients experience during their recovery from surgery will provide insight into the problem of unresolved pain.
Nurses are the health care providers who assess pain, decide on interventions, and evaluate the interventions used for patients experiencing acute pain in the hospital. Inadequate pain control has been demonstrated by the number of patients who continue to experience uncontrolled moderate to severe pain following surgery (Celia, 2000; Closs, Fairtlough, Tierney, & Currie, 1993; Feldt & Oh, 2000; Kemper, 2002; Miller, Moore, Schofield, & Ng’andu, 1996). Having an understanding of the experience of postoperative pain from the patient’s perspective may help nurses change their practice. Identifying what is important to patients in receiving care, as well as identifying interventions that are effective or ineffective, will provide nurses with a better understanding of the postoperative pain experience. Having an understanding of what is most effective in relieving pain and also is acceptable to patients will enable nurses to plan effective care.

Purpose of the Research

This study was designed to gain an increased understanding of the experience of postoperative pain in elderly patients undergoing total knee arthroplasty. Doing this in a holistic way from the patient's point of view was expected to illuminate the oversights in care that have occurred and result in less than optimal pain control. The results were expected to inform practice so that changes could address the deficits in care resulting in better pain management for this group of postsurgical patients.

Research Question

The research question was: What is the experience of postoperative pain following total knee arthroplasty in elderly patients?
Definition of Terms

1. Elderly was defined as 65 years of age or older (United States Department of Health and Human Services, Centers of Disease Control and Prevention, 2003).

2. Postoperative pain was defined as the discomfort felt following total knee arthroplasty and was described by each participant.

3. Total knee arthroplasty was the replacement of the entire knee joint.

Assumptions

My understanding of the experience of postoperative pain following total knee arthroplasty was based on clinical practice on an orthopedic unit, review of the literature, and limited interviews with patients in a pilot study. Assumptions based on this understanding were as follows:

1. Patients are able to communicate their experiences of pain.

2. Preoperative patient preparation may influence how patients evaluate their postoperative pain care.

3. The pain experience is unique to the individual.

4. Postoperative pain management can be improved for a majority of patients having total knee arthroplasty.

5. Past pain experiences may influence the patient’s perception of his or her current experience.

6. Some patients may have an altered perception of their experiences due to the side effects of medications.
Summary

The experience of postoperative pain is not well understood. Despite the availability of many effective interventions, the majority of postoperative patients continue to experience moderate to severe postoperative pain.

This study explored the pain experience of patients having total knee arthroplasty. This is a common surgery that is predicted to increase in frequency as the population ages. Elderly patients have been identified as a group that has been understudied in regard to pain management. An understanding of the pain experience following total knee arthroplasty can be utilized in planning care for future patients undergoing this type of surgery.
II. LITERATURE REVIEW

The purpose of this study was to develop an understanding of the experiences of pain in elderly patients who have had total knee arthroplasty. My understanding of pain following total knee arthroplasty was based on my clinical experience, a preliminary study of pain following total knee arthroplasty, and a review of the literature. My clinical experience identified that pain following surgery is often poorly managed. This also has been validated in the literature. This chapter will describe what was known at the beginning of this study about acute surgical pain management in elderly patients, pain following total joint arthroplasty, and factors identified as contributing to poor pain management. Lastly, gaps in the literature will be addressed.

Postoperative Pain Management in Elderly Patients

Elderly patients have been identified as high risk for being undertreated for pain (AHCPR, 1992; Loeser, 2000). Pain management in elderly patients was one of seven priorities identified by the National Association of Orthopedic Nurses (Sedlak, Ross, Arslanian, & Taggart, 1998). The management of pain also was the most frequently documented topic under the theme “symptom management” in a study by Hughes, Hodgson, Muller, Robinson, and McCorkle (2000). The researchers evaluated the charting of advanced practice nurses to determine the informational needs of elderly patients who had received surgical treatment for cancer. A study by Sloss et al. (2000) described pain management associated with hospitalization and surgery as problematic in the vulnerable elderly, and needing to be changed in order to improve outcomes. An expert medical panel identified these conditions along with 19 other problems. The
specifics of what needs to change related to surgical care or pain management was not
identified.

Some research has been conducted focusing on the elderly who have had
orthopedic surgery (Closs et al., 1993; Crutchfield, Zimmerman, Nieveen, Barnason, &
Pozehl, 1996). Pain control and interventions used to treat pain in elderly patients having
orthopedic surgery or suffering from orthopedic trauma was the focus of a study
conducted by Closs et al. Pain in this hospitalized elderly population was not managed
well, with bed rest and medications being the only identified interventions used to treat
the pain. A study conducted by Crutchfield et al. described how pain changes overtime
following total knee arthroplasty. The words that patients used to describe the pain
changed over time; however, changes in intensity of the pain were not significant as
measured by the McGill Pain Questionnaire. The change in words used to describe the
pain suggests that the type of pain the patient experienced changed following surgery.
This finding needs to be validated with further research.

Several quantitative studies (Celia, 2000; Closs et al., 1993; Feldt & Oh, 2000;
Kemper, 2002; Miller et al., 1996) have attempted to uncover problems related to the
management of surgical pain in the elderly patients. Only one qualitative study was found
that specifically examined acute surgical pain in the elderly (Zalon, 1997). These studies
examined the numbers of patients experiencing pain, the intensity of pain experienced,
and the interventions used to manage pain.

Uncontrolled acute postoperative pain in elderly patients was identified as a
problem in several studies. Kemper (2002) found that 66% of participants rated their pain
at 5 or above on a 0 to 10 scale on their first postoperative day. By the third postoperative
day, 42% of patients continued to have pain at the level of 5 or above. Miller et al. (1996)
reported that 62% of patients who were able to rate their pain reported their pain as
greater than 5 on a 0 to 10 scale. However, 41% of the patients were unable to rate their
pain. Feldt and Oh (2000) reported that 61% of the participants in their study had
moderate pain with movement following surgery for a hip fracture. Closs et al. (1993)
found that 100% of elderly patients who had orthopedic surgery reported pain on the third
postoperative day. Forty-one percent of the sample described their pain as moderate to
severe. In addition to surgical site pain, patients reported back and joint pain. Factors
aggravating or alleviating the pain were not identified. The only finding is one of under
treatment of pain. A majority of patients in these studies experienced at least moderate
pain following their surgery.

In a study of patients following coronary artery bypass surgery, Celia (2000)
compared the amount of pain medication administered with the patient’s age. Three age
groups were studied: 60 and younger, 61 to 69, and 70 years and older. Analysis of
variance showed that those age 60 years or younger received significantly more
medication than those older than 60 years (F=25.83, p=.00). In addition, 99% of patients
in the study received less than 28% of their prescribed pain medication. Patients did not
evaluate their pain in this study, so the effects of undermedication could not be evaluated.
No explanation for the differences in amount of medication administered or the low
dosing of medications were given.
Three quantitative studies (Closs et al., 1993; Kemper, 2002; Miller et al., 1996) as well as a qualitative study (Zalon, 1997) identified interventions used to manage surgical pain in elderly patients. Outpatients reported using medications, immobility, distraction, massage, and the application of heat or cold to manage postoperative pain (Kemper, 2002). Immobility was identified as the second most effective pain relief strategy with 61% of the participants using this to relieve their pain. Miller et al. (1996) recorded interventions used to treat pain in confused elderly patients who had surgery. Medication administration was identified as the most frequently used intervention. Repositioning, deep breathing, and instruction regarding the use of the patient-controlled analgesia (PCA) were other actions taken by the nurse to manage patients’ pain. Closs et al. had similar results and reported pain medication administration as the most frequently used intervention. In addition, Closs et al. found that no patients received more than half of the opioid analgesic prescribed for them. These findings correspond with Celia’s (2000) study that also identified under medication of patients. Bedrest was the only other intervention identified by Closs et al. In Zalon’s (1997) qualitative study, medications, immobility, and distraction were effective interventions identified by the participants.

It is of concern that research previously conducted has shown that elderly surgical patients view immobility as an effective pain management strategy. Immobility increases the patient’s chance of developing postoperative complications (Messer, 1998; Nendick, 2000). The interventions used by elderly patients to treat pain following total knee arthroplasty have not yet been identified. The effectiveness of the interventions used by elderly patients also needs to be explored.
MacDonald and Hilton (2001) used a pretest/posttest design to evaluate the effectiveness of an educational program for nurses designed to improve pain management in older adults who had hip fracture repairs. Chart review was used for data collection. A lack of documentation (80% of patients did not have complete documentation) resulted in a lack of information about patients’ pain ratings. Based on their observation of care given to patients, the researchers believed that the educational program did improve nurses’ practice related to pain management; however, this could not be evaluated statistically because nurses had not documented the assessment or care they provided. McCaffery (2002) recommended that nurses focus on improving pain assessment and administering appropriate doses of analgesics before other interventions to manage pain are tested.

**Acute Pain Management Following Total Joint Surgery**

Four studies were identified that specifically examined pain following joint replacement surgery. Both total knee and total hip surgeries were included in these studies (Flory et al., 2001; Neitzel, Miller, Shepherd, & Belgrade, 1999; Nussenzveig, 1999; Sjoling & Nordahl, 1998). The researchers of these studies did not limit their sample to elderly patients; however, all of them reported that the majority of patients were over the age of 60 years. The results of these studies may have been different if the sample would have been limited to elderly patients.

Flory et al. (2001) compared the effectiveness of around-the-clock dosing of opioids with as needed (prn) dosing. Pain was assessed using the McGill short-form questionnaire. Measurement validity and reliability were not reported. The two groups
were compared on postoperative day 1 and day 2 using the $t$ statistic. The mean pain score of the group receiving around-the-clock dosing were lower at each time point than the group receiving prn dosing. A statistically significant difference ($t=2.06$, $p=.001$) occurred only on day 2 of the measurements.

In a descriptive correlational study, Sjoling and Nordahl (1998) compared groups who had and had not received preoperative information about pain control to determine if pain levels were different for the groups. No statistical differences were noted. An unexpected finding in this study, however, showed that patients who had undergone a total knee arthroplasty had significantly more pain than patients who had total hip arthroplasty. Pain was measured using a visual analog scale and group mean pain scores were compared using the Mann-Whitney test ($p=.001$). No $U$ score or $Z$ score was reported. Neitzel et al. (1999) also reported significantly more pain in total knee patients compared to total hip patients (Mann-Whitney $U$, $N=55$, $p=.01$). No $U$ score or $Z$ score was reported. No explanation for the higher level of pain in patients having total knee arthroplasty was provided by either group of researchers.

Education as an intervention was tested to improve pain management in the studies conducted by Neitzel et al. (1999) and Nussenzveig (1999). Neitzel et al. educated nurses and physicians using guidelines for pain management developed by the AHCPR but found no significant differences in patient pain intensity or ability to function. The orthopedic nurses’ knowledge improved significantly ($paired t=2.8$, $p=.00$) as measured by the Knowledge and Attitude Survey Regarding Pain. Nussenzveig (1999) reported improvement in pain intensity and patient functioning with preoperative patient
education; however, no reported measurement reliability or validity was included. Only group means were reported.

Researchers used education as an intervention with nurses and physicians with the goal to improve postoperative pain management (MacDonald & Hilton, 2001; Neitzel et al., 1999). Neitzel et al. reported that knowledge improved significantly for nurses ($t_{paired} = 43.6$, $df = 55$, $p = .000$). Unfortunately the care provided, both assessments and interventions, was not documented and therefore could not be evaluated. The researchers also were unable to evaluate whether a relationship existed between an increase in knowledge and a change in nurses’ practice.

Several additional studies were conducted to evaluate the effectiveness of preoperative education prior to total joint surgery. However, the patient’s pain was not measured (Breemhaar, van den Borne, & Mullen, 1996; Butler, Hurley, Buchanan & Smith-VanHorne, 1996; Gahimer, Forsyth, Domholdt, Lewis, Corbin, & Rosier, 1996; Gammon & Mulholland, 1996; Golubtsov, Paola, Baldwin, & McCall, 1998; Lewis, 1997; Lin, Lin, & Lin, 1997; Moon & Backer, 2000; Spalding, 2000). While researchers believed that preoperative education improved postoperative pain management, evidence to support this claim has not been shown in patients undergoing total joint surgery. Future studies designed with prospective data collection techniques may provide this evidence. Studies to date have used retrospective chart review and incomplete documentation resulted in missing data (MacDonald & Hilton, 2001; Neitzel, et al., 1999).

Researchers conducted three studies and looked at postoperative pain as an outcome that could be impacted by preoperative education (Gammon & Mulholland,
There are conflicting results from these studies. Gammon and Mulholland and Neitzel et al. report that preoperative education programs did not produce a significant reduction in postoperative pain. Nussenzveig concluded that preoperative teaching regarding pain control was effective because 80% of patients reported their postoperative pain at 5 or less on a 0 to 10 scale. No inferential statistics were reported in this study. None of these studies explored the importance of education from the patient’s perspective. Patients were not interviewed or asked if education made a difference in how they managed their pain. The effects of education on the management of postoperative pain following total knee arthroplasty remains unknown.

Postoperative Pain Management

Several quantitative studies have documented that patients report satisfaction with their pain management despite having inadequate pain control (Blank, Mader, Wolfe, Keyes, Kirschner, & Provost, 2001; Comley & DeMeyer, 2001; Dawson, Spross, Jablonski, Hoyer, Sellers, & Solomon, 2002; McNeill, Sherwood, Starck, & Thompson, 1998; Owen, McMillan, & Rogowski, 1990; Sherwood, Adams-McNeil, Starck, Nieto, & Thompson, 2000; Sjoling & Nordahl, 1998). However, it is not known why patients are satisfied with inadequate pain control. Several explanations have been offered but these are speculative in nature. Blank et al. (2001) proposed that pain relief is only one factor that influences patient satisfaction. It also has been suggested that the relationship between the patient and health care provider may influence patient satisfaction in regard to pain management.
(Comley & DeMeyer, 2001; Dawson et al., 2002). These studies involved samples from different populations and neither focused on surgical patients. Therefore, these findings may not be relevant to patients with acute surgical pain. Other factors not yet identified, may also influence patient satisfaction. No studies to date were found that determined whether or not these explanations were applicable to hospitalized patients experiencing acute surgical pain.

McNeill et al. (1998) suggested that further investigation is needed to identify the determinants of patient satisfaction with pain treatment. Comley and DeMeyer (2001) further proposed that instruments measuring satisfaction need to be examined for validity, and recommended that qualitative studies be conducted in regard to patients’ pain to determine satisfaction from the patient’s perspective. In addition, the identification of what satisfies patients being treated for acute surgical pain needs to be identified.

In a qualitative study, Sherwood et al. (2000) identified four themes that influence hospitalized patients’ satisfaction with pain management: patient pain experience, patient views of providers, patient pain management experiences, and pain management outcomes. Patient pain experience included the patient’s beliefs, expectations, and strategies used to treat the pain. Patients viewed providers according to their attitude, knowledge, skill, and response to the participant’s complaint of pain. The elements common to the pain management experience included the patient involvement in care and the effectiveness of pain management. The theme, pain management outcomes, was a synthesis of the other three themes. The qualitative data for this study were obtained through written responses to open-ended questions and thus prevented further
clarification or discussion between the researcher and the participant. This method of data collection produced a large sample of 241 adult participants. Surgical patients with a mean age of 49 years made up 73% of the sample. The findings from this study support the idea that multiple factors influence patients’ satisfaction with their pain management. The factors most important to the elderly experiencing acute surgical pain have not yet been identified.

Despite the vast amount of research conducted on pain management, few studies have investigated the acute surgical pain experience using a holistic approach (Zalon, 1997). Qualitative research methods provide an opportunity to look at experiences in a holistic way. Only one qualitative study was identified that examined acute surgical pain in the elderly. Zalon explored the pain experience of frail, elderly woman who had undergone abdominal surgery using a phenomenologic method and found that participants had a hard time describing their pain. The women described pain as something to be endured. Their descriptions were based on their previous experiences with pain. In addition, participants expected nurses to know that they were in pain and to provide medication at the appropriate time. Some of the women never asked for any pain medication but would take it if offered. The results suggest that nurses’ understanding of the experience of pain from the patient’s perspective is deficient. Further research is needed to describe what the pain experience is for patients following different types of surgery because the type of pain experienced, as well as the interventions to manage the pain, may vary with each type of surgery performed. An increased understanding of the
postoperative pain experience may provide evidence that will help change nursing practice.

Three factors were identified as contributing to poor postoperative pain management including poor communication between patients and nurses, a lack of knowledge on the part of patients, and nurses’ lack of knowledge regarding appropriate treatment for surgical pain. Communication between patients and nurses is seen as essential in providing adequate pain management (McDonald, McNulty, Erickson, & Weiskopf, 2000; Mueller, Tinguely, Tevaearai, Revelly, Chioler, & von Segesser, 2000).

Yaeger, Miaskowski, Dibble, and Wallhagen (1995, 1997) have documented that inadequate knowledge of pain management on the part of cancer patients and their caregivers is a significant barrier to effective pain management. Both studies were conducted on outpatients who had received instructions regarding pain management. Knowledge as measured on the Pain Experience Scale was extremely limited.

Poor communication between nurses and patients contributes to patients’ experiences of high levels of postoperative pain (McDonald et al., 2000). The most common surgical procedures in this group were cholecystectomy and laminectomy. Participants ranged in age from 18 to 63 years with a mean of 40 years. Patients in this study could describe in detail their postoperative pain experiences, yet three of them related never having discussed pain with their nurses. The 27 other patients in the study reported very minimal interaction with their nurses regarding their pain and its management. Some patients offered the explanation that they did not want to complain or bother the nurses while others expected the nurses to know when they were in pain.
Patients clearly did not understand that their pain may have been better controlled if they had reported their pain to their nurses. Thus, patients did not understand their role in communicating their needs to their nurse.

Jacobs (2000) used a survey to measure the perceived informational needs of surgical patients after discharge. The Patient Learning Needs Scale was used to collect data from a group of 45 patients who ranged in age from 18 to 76 years with a mean of 38.8 years. The Cronbach’s $\alpha$ for this study was .89 for the total scale and 0.75 to 0.94 for the 7 subscales. Only 70% of patients received information on how to manage their pain. Patients also reported the need for information in regard to managing their pain when they got home. The researcher recommended that changes in educational practices be made to include the areas that were overlooked so patients could be better prepared for discharge.

One study conducted on patients having cardiac surgery described pain location, distribution, and intensity (Mueller et al., 2000). A majority of patients had pain at a moderate level for at least 2 days postoperatively with little fluctuation in intensity. Mueller et al. suggested that interventions for pain control during this period need to be adjusted to decrease the intensity of the pain. The location of the most intense pain changed, moving from the epigastric region in the initial postoperative period to the back and shoulder areas on postoperative day 7. The researchers speculated that this change in location was due to removal of drains and healing in the epigastric region while the pain in the back and shoulders was attributed to surgical positioning and prolonged bed rest. The routine communication between patients and nurses is not usually this complete.
However, having this type of information would allow for better planning of postoperative care with more appropriate interventions to meet the patient’s needs.

Owen et al. (1990) reported that patients do not know enough about pain management to contribute effectively to their own treatment. More than half of the patients reported having pain most or all of the time following surgery. Prior to surgery, 27% of the patients reported not knowing how severe the pain might be postoperatively, and 56% expected to have moderate pain or greater. In addition, patients said that they would not ask for pain medicine until the pain was severe. Patients expected to receive their medicine immediately. Melzak, Abbott, Zackon, Mulder, and Davis (1987) found that about one third of their patients, mean age 58.6 years, had pain that persisted for more than 4 days. Davis attributed poor pain management to patients’ lack of knowledge. Educating patients prior to surgery about postoperative pain control needs to become a priority for nurses. Unfortunately, the amount of time nurses have with patients preoperatively is very minimal (Reichert, 1999).

Fear of postoperative pain and a lack of understanding were also concerns of patients undergoing cholecystectomy or herniorraphy at two Dutch hospitals (Breemhaar, et al., 1996). The researchers also reported that patients want to have interaction with an individual when they are receiving information about their care. Receiving information via videotape or written materials did not provide answers to their questions for a majority of the subjects. How improved communication between nurses and patients affects patients’ knowledge level and pain management needs to be further studied.
Two additional factors have been identified as contributing to poor pain management including nurses’ lack of knowledge regarding pain management and nurses’ attitudes toward pain (Brockopp, Brockopp, Warden, Wilson, Carpenter, & Vandeveer, 1998; deRond, deWit, vanDam, vanCampen, denHartog, & Klievink, 2000; Edwards, Nash, Najman, Yates, Fentiman, Dewar, Walsh, McDowell, & Skerman, 2001; Edwards, Nash, Yates, Walsh, Fentiman, McDowell, Skerman, & Najman, 2001; Schafheutle, Cantrill, & Noyce, 2001; Sloman, Ahern, Wright, & Brown, 2001). This appears to be an international problem since several of these studies were conducted in countries other than the United States. Schafheutle et al. discovered that nurses working on surgical wards did not expect patients to achieve total pain relief. In addition, these nurses reported that they relied on their own judgement rather than the patient’s report of pain in deciding whether or not to administer pain medication.

In addition to finding a lack of knowledge, Brockopp et al. (1998) found that the nurse participants did not attach importance to treating pain. In fact some of them wanted to distance themselves from the issue because they were afraid of the possibility of hastening death or encouraging addiction. Nurses also reported an unwillingness to believe patients’ reports of pain, relying instead on their own judgment. Edwards et al. (2001) also found that many nurses do not regard patients’ pain reports as the single most important reliable indicator of pain. They found that nurses were reluctant to increase a safe but ineffective dose of morphine and expressed concern about patients on opioids becoming addicted. A specific deficit in nurses’ knowledge regarding pain management in the elderly was reported by Sloman et al. (2001). In this study, years of nursing
experience was found to correlate with a higher level of knowledge of pain management. Nurses’ knowledge also varied depending on specialty areas in which they worked. Those working in palliative care scored significantly higher compared to all other groups.

This lack of knowledge is demonstrated in nurses’ practice. Nurses undermedicate patients even when sufficient pain medication is ordered. This may be due to nurses’ misconceptions about pain and aging, such as the belief that pain perception decreases with age or pain is a normal part of aging (Celia, 2000). The undertreatment of pain will continue until nurses’ misconceptions of pain are resolved.

An acute pain service has been shown to be effective in decreasing postoperative pain by providing experts in pain management who are able to intervene when standard orders are not effective in controlling pain (Hopf & Weitz, 1994). The presence of experts also increases the education of physicians, nurses, and patients about new treatment recommendations and modalities. New modalities were used in the most effective manner when experts were present.

Increasing nurses’ knowledge of appropriate pain management practices continues to be a challenge. Developing a better understanding of the experience of surgery and the pain associated with it may help nurses better understand the patient’s pain. Having specific information related to the type of surgical patients that the nurse cares for may result in improved interventions for that group of patients.

Knowledge Gaps

Identifying gaps in knowledge was an essential step in planning this research study. My understanding of what is known and not known allowed me to ask questions
that may fill the identified knowledge gaps. The gaps in the literature related to pain in elderly patients following total knee arthroplasty are discussed.

Postoperative pain in elderly patients is poorly managed (Loeser, 2000; Hughes et al., 2000; Sedlak et al., 1998; Sloss et al., 2000). Elderly patients often endure moderate to severe pain during the postoperative period (Closs et al., 1993; Feldt & Oh, 2000; Kemper, 2002; Miller et al., 1996). Uncontrolled pain puts the patient at increased risk for developing postoperative complications such as deep vein thrombosis and atelectasis (Buck & Paice, 1994; Curtiss, 2001; Lotke, 1998). This problem was identified many years ago but still exists today. How to effectively treat postoperative pain in elderly patients remains unknown.

Medications have been identified as the most frequently used intervention to treat postoperative pain in the elderly (Closs et al., 1993; Kemper, 2002; Miller et al., 1996; Zalon, 1997). However, most patients are undermedicated for their pain with some patients getting less than 25% of what is prescribed for them (Celia, 2000; Closs et al., 1993) Immobility also is identified as a frequently used intervention to manage pain (Kemper, 2002; Zalon, 1997). Other interventions such as repositioning, distraction, and the application of heat or cold were used infrequently. Research needs to be done to identify effective interventions that can be used to treat postoperative pain in the elderly.

Even though patients report moderate to high levels of pain postoperatively, they also report being satisfied with their pain management (Blank et al., 2001; Comley & DeMeyer, 2001; Dawson et al., 2002; Owen et al., 1990; McNeill et al., 1998; Sherwood et al., 2000; Sjoling & Nordahl, 1998). The reason for this incongruency has not been
explained by the research done to date. A qualitative study would allow an exploration of this phenomena and may provide insight into ways to assist patients in managing their pain.

Poor communication between patients and nurses contributes to the problem of uncontrolled postoperative pain (McDonald et al., 2000; Mueller et al., 2000). Patients do not understand that they need to continue to report their pain when measures to treat the pain are ineffective (McDonald et al., 2000). Patients also need to understand the consequences of not treating pain (Jacobs, 2000). The educational programs that have been tested have not been effective in helping patients understand postoperative pain, its consequences, and interventions available to them. Understanding what the patient needs is the first step in resolving this problem. A qualitative study may help identify the factors contributing to this problem. Once factors contributing to poor pain control are identified, interventions can be developed.

Nurses’ lack of knowledge also contributes to the problem of uncontrolled postoperative pain (Brockopp et al., 1998; deRond et al., 2000; Edwards, Nash, Najman, et al., 2001; Edwards, Nash, Yates, et al., 2001; Schafheutle et al., 2001; Sloman et al., 2001). While some of the researchers have been able to demonstrate an improvement in knowledge they have not been as successful in changing how nurses practice. Nurses continue to inadequately manage pain and the reasons are not clear.

Although several studies examined pain following joint arthroplasty, none limited their sample to elderly patients (Flory et al., 2001; Neitzel et al., 1999; Nussenzveig, 1999; Sjoling & Nordahl, 1998). As-needed (prn) dosing continues to be the most
common method used today despite evidence that shows patients preferred around-the-clock dosing of oral opioids over prn dosing (Flory et al., 2001). Little is known about the pain experience following total knee arthroplasty in elderly patients. No studies could be found that looked at this experience in a holistic way from the patient’s perspective.

Summary

Pain for elderly patients having total knee arthroplasty is not well understood. A qualitative study that would allow patients to describe their experience with pain was indicated to shed light on this issue. In addition, effective interventions that are used to manage postoperative pain following total knee arthroplasty need to be explored. The interventions that have been identified as commonly used include medications and immobility. These have not always been effective and can contribute to poor patient outcomes. Communication between patients and nurses also has been identified as contributing to poor pain management. It is unclear how nursing practice can change to improve communication and ultimately improve pain management.
III. RESEARCH METHOD

Statement of the Purpose

The purpose of this study was to increase the understanding of the experience of postoperative pain following total knee arthroplasty in the elderly. Phenomenology was chosen as the qualitative method because it seeks to uncover shared meaning using a holistic approach. Analysis of participants’ shared experiences was conducted using the hermeneutical method described by Diekelmann, Allen, and Tanner (1989). Trustworthiness criteria were used to establish and maintain rigor in this study (Lincoln & Guba, 1989).

Research Design

Understanding the pain experience from elderly patients’ perspectives helped identify what issues were important to the patient. With this understanding the nurse may select interventions that may be more effective in alleviating pain. The purpose of this research was to increase nurses’ understanding of the experience of postoperative total knee arthroplasty pain from elderly patients’ perspectives by allowing patients to share their personal experiences.

Hermeneutic phenomenology was used to guide data generation and interpretation. VanManen (1990) described hermeneutic phenomenology as “a human science which studies persons.” Van Manen chose the word “person” rather than subject or individual because it conveys the uniqueness of each human being. This method seeks to gain an understanding of each person’s experiences and the meaning that the person attaches to that experience. This is a reflective process that occurs in re-examining an
experience because individuals are unable to reflect on an experience or even describe it as it is happening (VanManen).

The goals of hermeneutic phenomenology include developing an understanding of an experience from the participant’s perspective, and finding commonalities in meaning that arise from the experience. This understanding is developed through the interpretation of text. A transcript of an interview is one source of textual data (Van Manen, 1990).

Preliminary Study

A preliminary study was conducted with three elderly patients having total knee arthroplasty. The purpose was to explore the feasibility of using hermeneutic phenomenology to understand the experiences of postoperative pain. The research question was “What is the experience of postoperative pain following total knee arthroplasty?”

Institutional approval was obtained from the Medical College of Ohio prior to approaching any potential participants. Patients were identified by the RN case manager and asked if they were willing to be interviewed by a researcher about their pain and its management. Informed consent was obtained from each participant. Two men ages 71 and 73 years and one woman 85 years of age, participated in the pilot study.

Participants were interviewed 3 or 4 days following their surgery. The interviews were done on the day the patient was discharged. This was done to get a complete picture of pain management during the hospitalization and to ensure that patients were able to complete an interview. Prior to each interview the patient chart was reviewed to identify what medications and delivery systems were used to treat their pain as well as identify
how pain was documented for each patient. The information gained from the review of
the charts was used during each interview to prompt questioning if patients had trouble
remembering. Each patient was first asked to describe what his or her pain had been like
since surgery. Further discussion provided clarification of responses and determined if
patients knew and understood their prescribed medications and treatments. The texts of
the interviews were analyzed and the findings described. Pseudonyms were used to
protect the identity of the participants.

Three common themes were identified in analyzing the transcribed interviews. The themes included pain control with minimal side effects, oral medications, and satisfaction with nursing management of pain. Interviews were limited to three participants because the purpose of the pilot study was to determine the feasibility of using hermeneutic phenomenology as the method. With a limited sample no attempt to uncover an overall pattern to understand the experience was attempted.

Participants in the pilot study were able to describe their experience of pain and its management. Preliminary findings indicated that there were some commonalities of this experience. An increased understanding of this experience may help nurses address the problem of uncontrolled postoperative pain. The findings indicated that further exploration of this topic with a larger and more comprehensive group of participants would help to identify and validate themes and allow an overall pattern of understanding to emerge.
Research Process

Protection of Human Participants

Approval for this study was obtained from the Institutional Review Boards of Duquesne University (Appendix A) and the Medical College of Ohio (Appendix B). A letter of support and approval was given by Fulton County Health Center (Appendix C), since this institution did not have an Institutional Review Board.

Nurse discharge planners at the rural hospital identified potential participants for this study. Nurses in the preoperative assessment center at the urban hospital also identified potential participants for this study. I explained the inclusion and exclusion criteria to the nurses. The nurse asked the patient if he or she was willing to talk to a nurse researcher. The nurse obtained the patient’s name, home telephone number, and address of those agreeing to speak to me. This information then was conveyed to me. I contacted the patient and set a time to meet with the patient. Prior to surgery, I met with each participant and explained the study. Potential participants read the voluntary consent form and were given the opportunity to ask questions (Appendix D). Once the consent form was signed, arrangements for the time and place of the interview were made.

I met with each potential participant prior to their surgery to obtain an informed consent (Appendix D). Potential participants were given an opportunity to ask questions and read the voluntary consent form. I explained that there were no anticipated risks, monetary costs, or financial compensation for the participants. They were told that their participation would in no way affect the care they received and they could withdraw from the study at any time. Each participant was given a copy of the consent form.
Setting

Two hospitals in northwest Ohio, one rural and one urban, provided the setting for this study. The rural hospital is an independent non-profit hospital and health center. The urban hospital is a leading academic, research, and health care institution serving northwest Ohio and southeastern Michigan. Total knee arthroplasty was a common procedure in both of these institutions. Each institution performed an average of three to four total knee arthroplasty surgeries per week.

Recruitment

The nurse discharge planners at the rural facility identified that there was a need for this study and were enthusiastic about assisting with the recruitment of participants. The nurses were diligent in identifying possible participants for the study. In 2 months of data collection the nurses identified 17 potential participants. All of the potential participants met the study inclusion criteria and I approached them to obtain consent. All 17 patients agreed to participate in this study and signed consent forms. Two patients had their surgery cancelled due to health concerns and they were not rescheduled during data collection.

Nurses in the preoperative assessment center at the urban hospital were instructed by their supervisor to assist with this research study. However, the nurses in the preoperative assessment center made it clear that they were very busy and would not always be able to identify participants for the study. In 2 months of data collection the nurses referred only three potential participants. All three agreed to participate and signed consent forms; however, one had surgery cancelled due to health problems.
In an effort to increase participants from the urban facility, I contacted the nurses in the preoperative assessment center on a weekly basis hoping that more potential participants would be identified. Unfortunately, this did not happen. A more balanced representation from both institutions was planned, but was not possible to achieve.

**Participants**

Patients at the selected hospitals who were scheduled to undergo a total knee arthroplasty were asked to participate. Participants were selected using a purposive method of sampling. Purposive sampling was used to increase the range of the data and to increase the likelihood that a full array of multiple realities would be uncovered (Lincoln and Guba, 1985). Participants were selected to include elderly men and women age 65 years and older.

Patients 65 years of age and over undergoing total knee arthroplasty were asked to participate. Participants were English-speaking and had adequate cognitive functioning. Persons able to answer questions appropriately and converse with the researcher were considered to have adequate cognitive functioning. Exclusion criteria included patients having diminished peripheral sensation due to neuropathy or other chronic conditions. Patients with diagnosed dementia also were excluded.

Participants were selected and interviewed until redundancy of information was achieved. Redundancy occurs when no new information is obtained from the newest participants. Lincoln and Guba (1985) stated that often a very small sample can exhaust the available information. It is common to find that approximately 12 interviews will achieve redundancy. A sample size of 8 to 14 participants was anticipated.
The sample for this study was recruited from two hospitals. Thirteen participants had surgery at the rural hospital and two at the urban hospital. I believed that redundancy occurred with 11 interviews; however, at that time no participants had been interviewed at the urban hospital. Four additional interviews were already scheduled at both hospitals. Therefore, these interviews were completed to assure that no new information would be obtained.

*Data Collection*

I conducted audiotaped interviews with each participant. Two tape recorders were used simultaneously to ensure that the data were recorded completely. Initially only one interview was planned for each participant as close to his or her day of discharge as possible. However, I interviewed participants twice, on their first or second postoperative day and again on their third or fourth postoperative day.

The decision to conduct two interviews was a change in the research plan. This change occurred because I became aware that patients’ perceptions of the pain could change over time. I also realized that it may be difficult for patients to recall the pain from several previous days.

Two incidents impacted my understanding of what participants were able to share during the interview. The first incident occurred during the preliminary study I conducted. A participant in that study had difficulty recalling a very painful experience that occurred 2 days before the interview until he was reminded by his wife who sat in on the interview.
The second incident occurred when I stopped to see the first participant in this study during an unplanned visit. A short interview was conducted and the patient conveyed that he was having a great deal of pain. The next day during his planned interview he told me that his pain had not been bad the previous day. This indicated to me that his perception of the pain from the previous day had changed.

In order to capture complete descriptions of the pain experience the interview schedule was altered. Two interviews were now planned for each participant. The first interview occurred on the first or second postoperative day and the second occurred on the third or fourth postoperative day. The possibility that patients would not remember or be able to share experiences from the previous several days resulted in the addition of a second interview.

The interviews were conducted in the patient’s hospital room at the patient’s request. No participant wanted to move to another location even if another patient was in the room. Participants did not believe that their privacy was in jeopardy. Many patients described a great increase in pain with moving and this probably also contributed to their decision to remain in their hospital room. No participant wanted to wait until discharge to conduct the interviews.

Prior to the first or second interview I reviewed the participant’s medical record. This review allowed me to obtain information about the patient’s documented pain experience and its management. Demographic data and information about the pain experience was documented on the Demographic Data Sheet (Appendix E). In reviewing participants’ medical records I found that a 0 to 10 scale was used to assess and document
pain at both institutions. Mawdsley, Moran, and Conniff (2002) reported that the 0 to 10 numeric rating scale is a reliable tool to use with elderly patients who experience pain from a musculoskeletal disorder and who do not have cognitive problems. In addition, Curtiss (2001) reports that many hospitals use a score of 4 or more as an indicator for further treatment of pain. Information gained from the participant’s medical record was used very little during the interviews and only to clarify situations that the patient introduced.

Each interview began by asking the participant to talk about his or her postoperative pain. Most of the participants gave brief responses to this initial question and I asked additional questions to increase my understanding of the issues raised by each participant. As the interviews progressed, I explored concerns or issues raised by previous participants with subsequent participants. A list of possible verbal prompts was available to the researcher if the participant had a difficult time sharing their experience (Appendix F).

The interviews lasted approximately 15 to 60 minutes. The interview stopped if the participant did not wish to continue talking. This occurred a few times because the participants were in pain. In those cases, I returned the next day to complete these interviews. Most of the interviews were conducted in the morning prior to patients having physical therapy. Participants had physical therapy twice each day but were not scheduled for physical therapy at a specific time. Participants preferred to have the interviews completed prior to beginning the day’s activities.
An experienced transcriptionist transcribed the recorded interviews. Each participant’s interview was given a pseudonym to protect his or her identity. I proofread the transcript while listening to the audiotape recording. Corrections were made on the transcripts to ensure consistency of the transcript with the interview. Each participant was given the option to receive a copy of the transcript, but all declined.

I recorded field notes after each interview. The field notes included my perception of how the patients appeared during the interview. For example, following the first set of interviews the field notes indicate that most participants had a guarded posture and did not move regardless of how they described their pain. This observation of participants lying still confirmed participants’ description of lying still as an effective intervention for managing their pain. The field notes also included questions that I wanted to clarify in subsequent interviews and an overall impression of the interview. Most of the interviews were very comfortable and easy to conduct. A few interviews had several interruptions and it was difficult to restart and get patients back to the topic we were discussing before the interruption occurred.

I kept a reflective journal during the data gathering and analysis phases of inquiry. I documented the insights gained after a few interviews or the questions raised in my mind. I later discussed these insights and questions with members of my dissertation committee as well as colleagues who helped with peer debriefing.

*Data Analysis*

I conducted data analysis using the seven steps described by Diekelmann et al.
(1989). I became immersed in the data as I conducted the interviews, recorded thoughts in a journal, read the transcripts, summarized the transcripts, coded the transcripts, and analyzed the coded transcripts for meaning. The steps I took to uncover the shared meaning of the experience of pain for participants in this study are described below.

Interviews were transcribed after both interviews were completed for each participant. The participant’s transcript contained the complete interviews with each interaction identified with a date. After proofreading the transcribed interview, I read it to obtain a more complete understanding of the whole experience for each participant.

Following the second reading, I summarized each interview in writing to document my initial thoughts about the experience of pain following total knee arthroplasty for each participant. I sent the interviews and summaries to the chairperson and one member of the dissertation committee who also read the summaries to verify that they reflected what was communicated in the interview.

I used Ethnograph, a software program, to manage the qualitative data. This program allowed me to store the transcripts, code the textual information, and place the information into categories. The computer that I used to store the data is password protected and housed in my locked office.

After most of the interviews were completed and summarized, the methods expert of the dissertation committee and I met to identify codes in the interviews. This committee member and I each read the same interview and identified possible code words. The lists of possible codes were compared and discussed. Each code word was defined to help ensure consistency of use (Appendix G). I entered the codes with their
definitions into the Ethnograph software program. Initially 17 codes were identified and defined.

I coded textual references from all 15 interviews into the 17 codes using Ethnograph. After all of the transcripts were coded, I then compared codes, looking for similarities and differences. I generated a list of all the textual references for each code from Ethnograph. As the analysis progressed, I collapsed the initial 17 codes into 7 categories as similarities in codes were identified. I then named the categories to best reflect the meaning conveyed.

Next, I reviewed the 7 categories and compared them looking for similarities and differences. The categories containing similar information were grouped into themes. The categories remained the same but became subgroups of the themes. I grouped the seven categories into three themes.

The fifth step of interpretation seeks to identify a pattern that represents the relationship between the themes. I reanalyzed the themes, this time looking at relationships between and among identified themes. This process involved two consultation sessions with the methods expert of the dissertation committee and meetings with the peer debriefers. During these meetings my ideas about the relationship of the themes were questioned and challenged. The result of these meetings was the identification of a pattern that represents the relationship of the three themes. The categories, themes, and pattern are described in chapter four.

The sixth step of analysis was to validate the interpretation by asking selected participants to read the final analysis and validate the findings. I asked all of the
participants in this study to read the findings of this study and offer their comments. All participants declined. Some participants were anxious to hear about the findings but did not want to have to read and respond. Participants were uncertain about the future, e.g., would they be at home or in a rehabilitation facility, and they did not want to make an additional commitment.

A doctorally-prepared nurse who had had total knee arthroplasty, but was not a participant in the present study, agreed to do this reading. The first comment she wrote in response to the findings was “This really made me relive last summer.” She experienced periods of severe, uncontrolled pain. Because of her nursing background she was able to identify that her medications were sometimes given late and at times she was given wrong doses of her pain medications. She was able to validate my interpretation of the findings.

In addition, the chairperson of my dissertation committee and one other member who had read the interviews also were a part of all of the steps of data analysis. These committee members also validated that the findings collectively reflected the experience of pain for the participants in the present study.

The seventh step is a written report of the research using excerpts of the interviews to substantiate and validate the findings. Chapter four of this manuscript describes the findings.

Trustworthiness

In qualitative research rigor ensures that the study findings accurately reflect the participant’s experiences. Trustworthiness criteria were used to establish and document
rigor in this study (Gillis & Jackson, 2002; Lincoln & Guba, 1989; Streubert & Carpenter, 1999). Trustworthiness criteria included credibility, dependability, transferability, and confirmability.

Credibility ensures that the researcher has given an accurate description of the phenomena being studied (Lincoln & Guba, 1989). To provide evidence of credibility, I used several techniques. Prolonged engagement involves spending substantial time with the subject matter. Spending time with the subject matter allows the researcher to develop an understanding of the context of the experience (Lincoln & Guba, 1989).

I have been involved with the care of patients having total knee arthroplasty many times throughout my career. The most recent experience was as a clinical instructor on an orthopedic unit in a hospital. For the past 4 years, students with my guidance cared for postoperative patients on a weekly basis during the academic year. In addition, I conducted a pilot study that allowed me to spend time interviewing patients who had total knee arthroplasty surgery. These experiences helped me become familiar with the care provided to patients having total knee arthroplasty in the hospital setting. In addition, conducting two interviews with each participant increased the time I spent with the participants in the setting. I kept a journal to document observations and insights gained during the interview process.

Prolonged engagement included interviewing participants, reading transcripts for accuracy, writing summaries of interviews, and rereading interviews during the coding and analysis of transcripts. The time spent with the data collected allowed me to develop an understanding of the pain experience from the participant’s perspective.
Another technique used to establish credibility was peer debriefing. Peer debriefing was used to explore my thoughts and feelings with a person who does not have a vested interest in the research (Erlandson, Harris, Skipper, & Allen, 1993; Lincoln & Guba, 1989). Two nursing professors who are my colleagues participated as peer debriefers. Meetings with the nursing professors occurred at separate times. Three meetings were held with one peer debriefer. The first meeting took place while interviews were being conducted. The next two meetings occurred during data analysis. Two meetings were held with the second peer debriefer. These meetings occurred shortly after data analysis was initiated and later in the data analysis process as I was examining themes for patterns. Both of the peer debriefers questioned my thinking and offered alternative explanations to those that I posed.

Peer debriefing also occurred when I spent 2 days with the methods expert of the dissertation committee. During this meeting initial impressions of the interviews were discussed, code words were established and defined, and initial groupings of these early codes were formed. The methods expert and the chair of the dissertation committee both closely monitored the progression of this study.

The last technique used to establish credibility was member checks. Member checks are conducted to allow participants to verify that their story was reflected in the findings (Lincoln & Guba, 1989). All of the participants in this study were asked to read the findings and verify that their experience was reflected. All participants declined. Instead, a nurse researcher who underwent this surgery a year ago, but was not a participant in this study, agreed to read the findings related to this study. She was able to
verify that even though she was not a participant her experiences were reflected in the findings of the present study. In addition, the methods expert of my dissertation committee had experience in hermeneutic phenomenology and reviewed all of the transcripts and the entire data analysis.

The second trustworthiness criterion used in this study was dependability. Dependability requires the researcher to provide enough information to allow another researcher to follow the development of the study (Gillis & Jackson, 2002). An audit trail was established and maintained as this study was conducted. I assembled two notebooks with necessary documents to facilitate the audit process. In addition, the chairperson and one member of my dissertation committee audited each step of the research process as the study progressed.

Confirmability is the next trustworthiness criterion used in this study. Confirmability is used to verify objectivity of the data (Lincoln & Guba, 1985). The findings of the study are supported with excerpts from the interview texts. The audit trail also was used to establish confirmability. The audit trail allows other researchers to follow the decision-making processes of the study. In addition, the findings were validated by a doctorally prepared qualitative researcher.

The last trustworthiness criterion used in this study was transferability. Transferability, also known as fittingness, refers to how the findings of this study will have meaning to others in a similar situation (Lincoln & Guba, 1989). The detail reported in the findings allows others in similar situations to determine the appropriate use of the findings. Thick description was used to establish transferability and in reporting the
findings of this study. Excerpts of interviews are included to increase the understanding of the pain experience from the participant’s perspective.

The purpose of this study was to gain an increased understanding of the experience of pain following total knee arthroplasty. Hermeneutic phenomenology was the qualitative method used to gain this understanding. The participant’s transcribed interviews provided the data for this study. The analysis identified commonalities in meaning for the participants in this study. The shared meaning emerged in the description of three themes and an overall pattern that is discussed in the findings.
IV. RESULTS

This chapter will relate participants’ responses to the request for the story of their pain experience following total knee arthroplasty. While each participant’s story is unique, there are common experiences and reactions that can be identified and are reported as categories. The categories include normal process, time, explaining the pain, additional discomforts, medications, activity, and trust. The categories with similarities then were grouped into themes. The themes include anticipating pain, living the pain, and managing the pain. The interrelationship of themes reveal the meaning of the pain experience following total knee arthroplasty for the participants. Analysis of the relationship of the themes for common meaning revealed the pattern of purposeful suffering. This chapter also includes a discussion of the findings of the study as they relate to previous research findings. The chapter concludes with the identified limitations of the study.

Participants

Fifteen patients at the selected hospitals who were undergoing a total knee arthroplasty agreed to participate in this study. Nine women and six men with an age range of 66 to 86 years participated in the study. Six of the participants had had the same surgery on their opposite knee at an earlier time. All of the participants described their religious affiliation as Christian. Fourteen participants listed white for ethnicity and one listed black. Educational background included 2 participants completing eighth-grade, 11 completing high school, and 2 with college degrees. Each participant was given a
pseudonym to protect his or her identity. Participants were given the chance to choose their own pseudonym. If they declined the researcher assigned one to them.

Findings

The findings revealed the meaning of the experience of pain for participants in this study. The themes, which contain the categories, describe the experiences of the participants. The pattern, purposeful suffering, describes the meaning revealed when the themes are analyzed as a whole.

*Anticipating Pain*

Participants believed that pain was necessary following total knee arthroplasty. In addition, they believed that with time the pain would eventually resolve. The participants’ beliefs are revealed in the theme *anticipating pain*. How participants came to hold these beliefs is described in the following category of *normal process*. The participants’ beliefs about how pain would resolve is described in the category *time*.

*Normal Process*

Many of the participants had the attitude that pain was a normal and an expected part of the surgical process. To get to their goal of a healed knee they had to endure pain. Many participants based their expectations on their own previous experience with the surgery or a friend or family member’s experience with total knee surgery. They developed an attitude of getting through the pain, overcoming it, or living through it because eventually they would have less pain and better mobility. Stan stated, “It hurts but you get through it.”
Previous experience with this same surgery influenced how some participants viewed the pain. George said, “I know how it feels. I had the other one done and it’s gonna hurt for 3 weeks… Had it done in ’96; I still remember how it feels.” The pain from 8 years ago made a lasting impression but the final results of the surgery made the suffering acceptable. Stan thought that it would be harder for people who had not had the surgery previously to cope with the pain. He said, “Person’s never had one, probably will have it worse cause they don’t know what to expect. I think …that’s a lot of it.” When Millie was asked to describe what her pain felt like she said, “1 to 10, that’s probably an 8 right there…But, ah, one thing about this pain, it will eventually go away.” This high level of pain now is tolerated because she is expecting that in the near future it will be totally gone. Lily was asked if anyone talked to her about what the postoperative pain would be like preoperatively. She responded, “But you must understand, I’ve had two knee surgeries, two hip surgeries, a neck surgery, and lots of abdominal surgery, so they don’t really need to visit with me a long time about that. I KNOW I’m gonna have pain.” Previous experience made a lasting impression, but also left participants with the expectation that eventually the pain would be totally or almost totally gone.

Many of the participants who had not had previous arthroplastic surgery had heard about the experience from family or friends. Two participants expected to have pain because of previous experiences with pain that were not related to surgery. Anticipating pain influenced the participants’ reaction to pain and prepared them for the pain. When asked if he expected the pain to be severe, Dan said, “Oh, I kinda looked for it; people was telling me that it would be a real bear and it was.” Dan’s wife had had the
same surgery and he said, “She always said the first day you thought you were in hell, the second day you knew you were and then after that it got better. And that’s true.” This description conveys not only that pain is expected, but also that it is severe. The participants reported that this severe pain is limited to the first few days and then it starts subsiding.

Han’s wife also had had the total knee arthroplastic surgery and when asked if he expected to have the pain he was describing he said, “Yeah, I knew ahead of time.” He had not yet had physical therapy and I told him I hoped it went well. He responded, “I know it will do what it is supposed to do. But as far as going well, it will go painful.” He not only expected to have pain, he also expected activity to increase his pain. Ila’s husband and son-in-law both had the surgery done and she participated in their postoperative care. In describing her husband’s experience she said, “Well, at first he had it quite bad and then of course, he took some pills for it. But I’d say [the pain was gone in a] couple weeks maybe.”

Larry said, “I’ve talked to a lot of guys that’s had it done prior, you know, and …they’d never go back the other way [not have the surgery done]. I mean it was, it’s worth what little pain I guess you get.” Kate’s friend told her about her surgery,

My girl friend said “now I’m not going to tell you it doesn’t hurt,” because she said, “that would be a lie.” She said “cause it does hurt.” But she said, “they tell you that it gets better every time you move” and she said, “and it will.” So, she said it does get better. And she said “and then once you heal, then the movement has got to be so much better than before, it’ll be worthwhile.”

Both Larry and Kate described the end result as worth whatever they had to go through or endure to achieve the result.
Heidi and John did not relate experiences of others. Instead, they described their own experiences that had influenced their expectations about pain. Heidi was asked if she had any pain in her knee prior to surgery she said, “Oh, yes. I could hardly walk.” The pain medications she took were ineffective prior to surgery, “Well, they tried Celebrex, they didn’t help. Tried Vioxx, they didn’t help. They tried mostly everything I guess, you know, except the Percocet and Oxycontin.” Heidi had this surgery to relieve the pain in her knee. She expected to have pain after surgery and compared her postoperative pain to the pain she experienced preoperatively.

John said, “I knew it was gonna be rough for 2 or 3 days kind of rough on me, you know, they can do wonders now, not like they used to.” When he was young he had broken bones that were very painful for 2 to 3 days. He said, “Oh, I always know, a broken bone or anything is always [painful] for a couple days.” Participants expected severe or intense pain during the immediate postoperative period. They also expected that as the days went by, the pain would lessen.

Time

Participants viewed pain as a normal part of the surgical experience and they expected that as healing occurred, the pain would lessen and eventually would be totally gone. This pain would start as severe, lessen to a dull or mild pain in 2 to 3 weeks, and would be gone or almost totally gone by 2 to 3 months following the surgery. Participants believed that healing occurred with time. Kate shared, “And no matter how much pain medication they give you, it still is there, you know, a little bit of that pain there. But, um,
it’s going to get better. That’s what they tell us. So I’m believing them.” Most of the participants spoke of the relationship of pain, healing, and time.

The severity of the pain changed with time. Margaret said, “I felt terrible [yesterday] and I thought, oh Lord do I want this other knee done or not. But it is much better now.” Dan said, “Yesterday was a real bear but today isn’t too bad.” Mary described how her pain lessened over the days, “I get pain and I say, well 6 to 7, and I’m down to 5 to 4, now I’m 3. I’m winding down.” Over 3 or 4 days Mary’s pain had decreased from a rating of seven to a rating of three. For these participants the severity of the pain was decreasing with time.

Table 1. Participants’ Pain Ratings from Medical Record

<table>
<thead>
<tr>
<th>Participant</th>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
<th>Day 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dan</td>
<td>8-10</td>
<td>3-8</td>
<td>6-11</td>
<td>Not recorded</td>
</tr>
<tr>
<td>Nancy</td>
<td>8-10</td>
<td>5-10</td>
<td>6-8</td>
<td>4-5</td>
</tr>
<tr>
<td>Margaret</td>
<td>8</td>
<td>4-9 (most 8-9)</td>
<td>3-9</td>
<td>4-6</td>
</tr>
<tr>
<td>Hans</td>
<td>6</td>
<td>5-8</td>
<td>6</td>
<td>Not recorded</td>
</tr>
<tr>
<td>Larry</td>
<td>Not recorded</td>
<td>4-6</td>
<td>4-5</td>
<td>8</td>
</tr>
<tr>
<td>Stan</td>
<td>8</td>
<td>3-6</td>
<td>2-4</td>
<td>1</td>
</tr>
<tr>
<td>Mary</td>
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<td>5-7</td>
<td>6-7</td>
<td>4</td>
</tr>
<tr>
<td>Millie</td>
<td>3-8</td>
<td>3-7 (most 5-6)</td>
<td>2-8</td>
<td>Not recorded</td>
</tr>
<tr>
<td>George</td>
<td>2-4</td>
<td>4</td>
<td>Not recorded</td>
<td>Discharged</td>
</tr>
<tr>
<td>Lucy</td>
<td>0</td>
<td>1-5 (most 4-5)</td>
<td>3-9</td>
<td>3</td>
</tr>
<tr>
<td>Heidi</td>
<td>5-8</td>
<td>5-8</td>
<td>Not recorded</td>
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</tr>
<tr>
<td>Ilia</td>
<td>7-9</td>
<td>6-10</td>
<td>5-10</td>
<td>Not recorded</td>
</tr>
<tr>
<td>John</td>
<td>4-5</td>
<td>2-4</td>
<td>4-5</td>
<td>Not recorded</td>
</tr>
<tr>
<td>Kate</td>
<td>0-3</td>
<td>3-7</td>
<td>0-5</td>
<td>Discharged</td>
</tr>
<tr>
<td>Lily</td>
<td>7</td>
<td>2-9 (most 7-9)</td>
<td>4-8</td>
<td>3-8</td>
</tr>
</tbody>
</table>

Note. Pain ratings were assessed using the 0 to 10 numeric scale.

According to the participants’ medical records, most experienced moderate to severe pain in the first 24 hours following surgery (Table 1). Participants rated their pain
on a 0 to 10 scale with 0 being no pain and 10 being the worst possible pain. The pain lessened by day three with many participants having more periods of mild to moderate pain.

The expectation that the pain would eventually be gone seemed to help the participants endure the experience of the pain. John said, “I know in a couple of days you get used to that, it’ll go away, partially I mean, I mean, you know, it ain’t gonna go away overnight I know that.” Millie said, “That first week you’re just miserable and after that it starts easing up and easing up and when you go to therapy is when you need your pain pills.” When Stan was asked, “What do you think is helping the pain the most?” he simply replied, “Time.”

Participants in this study expected to have pain. This expectation came from their own experiences as well as from the experiences of friends and family. Participants also expected that the pain would decrease as they healed and would eventually be gone. The time that they expected this to occur varied among the participants but was generally weeks to months.

Participants anticipated having postoperative pain and believed that pain was an inevitable part of the recovery process. The decision to have surgery was purposeful for the participants. They knew that they would have pain but also expected that it would resolve in time. Participants were willing to endure the postoperative pain to achieve the outcome of greater mobility or pain relief.
Living the Pain

The pain that participants experienced was severe at times and all consuming at times. Most participants experienced severe pain during the first 24 hours after surgery (Table 1). Those who did not experience pain during this time had had a long-acting spinal anesthesia or had received epidural medication for pain control. However, when the spinal anesthesia or epidural medications wore off, they too had episodes of severe pain. Participants did not complain about having episodes of severe pain but instead described having to endure the pain or live through the pain. As the days went by they expected to have less pain. The participants suffered through the pain not because they had to but because they did not know or understand that the experience did not have to be extremely painful.

Living the pain puts into words the feelings participants had as they experienced the pain. Participants used strong words to convey their feelings, revealing that the pain was severe and intense. In addition to the pain, participants shared additional experiences that added to their discomfort. Enduring severe pain and the added discomforts resulted in suffering for participants. Participants described what the postoperative pain was like for them in the category explaining pain. The category, additional discomforts, identifies factors other than pain that caused further discomfort for participants.

Explaining Pain

The pain experienced after total knee surgery is described by participants as “severe” pain. Three participants used this word specifically while others used words that conveyed the same intensity. “Terrible” and “terrific” were also words used by several
participants to describe their pain. Lily said, “You have to go through severe pain and then it backs down and it’s less. I hope we just breeze through this one with normal amount of pain and normal amount of discomfort.” Her belief, that one must endure this pain, is shared by most of the participants.

George said, “It’s just amazing pain.” He also went on to say that at times “it’s just about unbearable.” Stan said, “It sets you on your ear.” I observed a few of the participants in extreme pain that totally incapacitated them, and they were not even able to talk to me. The first time I met Dan he appeared to be in pain and he said, “I wish I wouldn’t had this surgery. [I] shoulda kept my crippled leg.” When I asked if this was because of the pain, he responded, “Yeah, it’s bad.” Mary also was in severe pain the first time I saw her after surgery and she asked me to come back another time because she was unable to talk. George had pain medication about 2 hours before I arrived but he said, “But it’s not taking care of the pain right now.” The most severe pain was usually described as occurring in the first day or two following surgery.

When Hans was asked to describe his pain he said, “Well, they asked me during the night and I told them it was at least 9… it hurts even so they gave me pain pills but it hurt very, very much during the night but the pain pills made me sleep.” Nancy said, “It is a sharp, shooting pain that burns sometimes.” Ila also used “sharp” to describe the pain, “Just a sharp pain.” Ila went on to say, “Ah, it got pretty bad. I’d say almost 9 or almost top. But it was bad. And now and then, it’s been kinda went down a little bit, I think about 8 or something.” Margaret was concerned about being seen in pain. She said,
“Yesterday was terrible and then everyone [visitors] was here at the same time. You hate to have everyone see you in that much misery, you know.”

Eight participants felt that words couldn’t adequately describe their pain experience. Some felt that the only way that someone else could really understand was to have the surgery and experience the pain. George said, “They don’t know what it is unless they go through it.” Stan also said, “Unless you, if you’ve gone through this, I don’t think you would know.”

Others had a hard time finding the right words to help other people understand. When asked to describe the pain Lily said “It is pain. I think that’s the best I can do it.” Lucy had a similar response saying it is “Just pain. That’s all I can tell you. I don’t how else to explain it.” John’s nurses asked him to describe the pain, “They kept asking me how and I said, I don’t know how to tell you.” Margaret tried to explain but she finally said, “I don’t know; its just not good pain.” The difficulty these participants had in describing the pain indicated that this experience was complex and was hard to communicate to others.

As time went by the severe pain was more associated with activity, moving in bed, walking, or participating in physical therapy. While participants still experienced times of severe pain it was not as constant as time passed. Millie said, “It’s about a 10 at times when you move wrong.” Heidi described the pain she experienced with therapy: “I walked to the door and back to the bed but I almost passed out, I couldn’t hardly breathe.” John had a similar experience when he was trying to move his leg. He said, “Basically, take my breath for an instant then ‘til I get it straightened up. You know, and
then it’s okay.” The pain was less consuming for these participants as time passed. As
the days passed the periods of severe pain became episodic.

Nancy described some of the limitations that the pain caused, “When they got me
out yesterday to sit in the chair a little bit, why, I couldn’t hardly step on that foot the
pain was so strong and then today we had to lift it around and when you move it up and
down it feels like its going to break in two.” Participants developed an expectation for
increased pain with moving. Margaret said, “Well yesterday after my therapy I had very
much pain and then they gave me something and it did tame it down and I got quite
comfortable. But I hated to think of the times I had to get out.” Millie talked about the
pain with movement, “I had a lot of pain today. When I stand up it just really pains, bend
it, put it down, it just really hurts and I’ve got, I ain’t going home till I can walk.” Ila
described the difference in the pain with moving and not moving, “Now, of course, when
I stand up on this, try to get around, it hurts. But after I set down here, there’s something
just very light there, I can feel, but not too bad.” Activity caused an increase in pain for
all participants.

When asked to compare this pain to pain they had experienced with other
surgeries, responses indicated that this pain was worse than any other surgical pain they
had experienced. Ila simply stated, “it was worse” while John said, “This is a lot, a lot
more. …This pain is worse than the pain that you have after that kind of surgery
[abdominal].” Larry also said this pain was “ Worse, worse, much worse” than the
surgical pain he experienced with neck surgery. Hans compared the pain he was having
to the pain he had after a carotid endarterectomy, “Well, I had pain then too, didn’t I.
…But I didn’t have the severe pain like I’m having now.” While other surgeries also caused pain, this experience was perceived as worse than pain experienced with previous surgeries.

The words that participants used indicate that this pain was intense and severe during the immediate postoperative period. The intensity and severity decreased with time. However, certain experiences, such as physical therapy, increased the severity of the pain. These periods of severe pain appeared to decrease as healing progressed. The changing nature of the pain appeared to make the suffering more acceptable to these participants.

Additional Discomfort

A patient’s comfort is significantly diminished by pain. Participants also described additional factors that increased their discomfort. The additional factors included sequential compression devices (SCD), nausea and vomiting, constipation, and a lack of thermal comfort.

Dan said, “I didn’t sleep last night. That thing pounding on my leg….It is just aggravating. It’s like your sleeping with someone that keeps jerking you’re leg, makes you wake up.” Several participants could not find a position that was comfortable. Ila said, “I was kind of used to laying on my side quite a bit and I can’t do that right now.” Lily said, “And my back was killing me because I’ve been laying on it all the time. I haven’t been turned on my side yet.” I asked Kate if she was having pain anywhere else besides her leg. She responded, “Only my butt from laying.” She also was having trouble moving and turning. Mary had a very similar response when asked if she had pain
anywhere else: “In my butt.” Mary said the reason was “because of the contraption on my leg.” She had a cold pack on her knee and SCD cuffs on both lower extremities. These devices kept her from changing position.

Both Millie and Nancy had problems caused by the SCD cuffs. Millie had increased pain in her knee when the cuffs inflated. Nancy said, “I told them last night that my leg felt like it was cutting in two when that thing would blow up.” When the SCD cuffs were taken off, Nancy had severe bruising on her lower leg. Not being able to change position added to several participants’ discomfort.

Nausea and vomiting as well as constipation were problems that added to some participant’s discomfort. Ila, George, Hans, and Stan all had nausea and vomiting. Hans, Stan, Nancy, and Lily all had problems with constipation. When I asked Hans about his pain on my second visit with him he said, “It’s my tummy. I didn’t have a bowel movement yesterday and I took some medicine….The bowels don’t move.” Lily was treating her constipation with several medications, “Now I’m taking milk of magnesia, a stool softener, and then Metamucil.” As discussed earlier many of the participants attributed these problems to the medicine they were taking to control their pain. If they could tolerate the pain they limited their pain medicine to try and control these symptoms.

Being too hot or too cold also added to some participants’ discomfort. Mary said, “I got tangled up in all those sheets…the other night I was so cold so they covered me up with about three of those lightweight blankets and then I woke up and I was so hot and I was all tangled up.” Larry thought that the cold pack helped his pain, but he said, “Yeah,
I can tell a difference. Only trouble is I don’t like it at night cause it makes me chilly.” Participants had trouble managing their temperature comfort because of the difficulty in moving. Putting blankets on and taking them off was difficult for these participants.

In addition to sharp, severe pain several participants also described their leg as feeling heavy. Millie said, “It just feels like it’s um, like it weighs a hundred pounds. It just feels like I’m, I’m glued to the bed with this leg.” Ila said, “I can’t lift that leg myself.” Hans said, “Well it doesn’t look heavy but it feels heavy and I knew that it must be normal for knee surgeries.” This feeling added an additional burden to the task of moving.

Most participants seemed to view the additional discomforts as annoyances to be tolerated. Participants were not complaining about the additional discomforts not being taken care of but spoke about them as additional factors other than pain to be tolerated or endured. Suffering through the pain and associated discomforts was a normal part of the recovery process for the participants in this study.

Participants’ lack of understanding that pain could be relieved and some of the discomforts could be managed resulted in participants accepting and living the pain. In living the pain, participants accepted the pain and discomfort they were experiencing as necessary for recovery. In accepting the pain and discomfort, participants suffered because they thought it was necessary. Believing that the pain and discomfort were necessary made suffering through the pain purposeful for the participants. If participants wanted to have improved functioning of the knee, suffering through the postoperative pain was the price they were willing to pay.
Managing the Pain

Managing the pain offers insights into how the participants expected their pain to be managed. The participants’ expectations for pain management are influenced by the trust that participants have in nurses and their beliefs about postoperative pain and medications. Participants suffered with pain because they believed nurses were doing all that they could to relieve the pain. Participants discovered that by limiting their movement they could relieve the pain and they used this intervention frequently.

Some participants did not believe that the pain could be managed. George said “Well, you’re not gonna get that pain under control. That’s gonna be there for 3 weeks at least.” George, Lily, and Lucy all said there isn’t anything you can do to relieve the pain other than taking pain medicines. When George was asked if there was anything that made his leg feel better, he responded, “Not really…You just gotta let nature take its own course, I guess.” Participants were satisfied with any relief they got from the pain because they didn’t believe that it could really be controlled. Suffering through the pain is what participants shared as their experience. They did try to manage or control the pain by taking medications, adjusting their activity, and trusting in their health care providers.

Medications

Ten participants talked about taking their pain medication on a regular basis. Taking pain medication was viewed as a routine part of the nursing care the participants received. Ila and Millie wanted pain medication at certain times, but not too often. Ila said, “Well, sometimes, maybe a couple times a day. Ah, not too often…I never ask too much for them.” From the documentation on their medical records, only 3 participants
got their medication on a frequent basis. Two participants received some type of pain medication every 4 to 6 hours. Heidi was the only participant to receive her pain medicine in an around-the-clock schedule.

Participants relied on their nurses to give them pain medicine at the appropriate time. Dan said, “They watched it pretty close. When it started hurting they was here, they knew just about when to come in.” Nancy wanted her medicine on a regular schedule and before therapy, but knew this was not happening. She said,

When I get to rehab they will put me on a schedule and I’ll get my pills about a half hour before therapy. And I know that everyday I’m going at 8 o’clock and 1 o’clock in the afternoon. So they schedule the pills to hit around then. Where here I never know when the girls (therapists) are coming, you know. But they’ve been good to me, you know.

Hans also wanted his pain medicine before therapy. He said, “The nurses are pretty busy but I’m supposed to have therapy and they said they were going to bring me soon some medicine to work ahead for the therapy but it hasn’t come yet.” Others including Hans, John, and Stan thought they were getting their medicine on a regular basis but they were not. Stan said, “If it’s due in 4 hours they give it to you in 4 hours, [they don’t make you wait].” Most participants felt the need to control the pain enough to allow them to participate in the activities that are required for recovery.

Most participants did not know what medication they were taking for pain. They were not bothered by this and had an attitude that it was not necessary for them to know their medicines. Many participants knew that they had taken pain medicine but they weren’t sure of the names. George said, “They’re giving me pain pills and shots once in a while.” Ila said, “I did have a pill, but I don’t know what it is.” Kate said, “I can’t
remember what the name of it is. Two pain pills. Works good.” When I came back for subsequent interviews some of the participants tried to identify these for me. Millie said, “I thought they give me Percocet and Vicodin.” Some participants did not really see a need for knowing the name of the medication that they were getting for pain. Mary said, “I really don’t know what they’re giving me and when. You know, they just bring it in and say, here’s a pill. They usually tell me what it is but, you know, I don’t pay any attention because that’s their job.”

The participants relied on the nurses to know their medications. Participants also relied on the nurses to deliver their medications at the appropriate time. Lucy said, “They probably told me but I didn’t remember. …I didn’t have to remember if they know what they’re doing. You get so many [pills], you get them all mixed up, though, so I just let them take care of it. That’s what I’m here for.” The participants seem to believe that the nurses know that they are in pain and the nurse will treat their pain in the best possible way. John said, “Yeah, they give me a pill now and then; I don’t know what they give me, I guess for pain mostly.” Larry said, “Then they [nurses] come back and give you some more, ‘cause they keep checking to see, you know, what your tolerance, what your pain level is, I guess you’d might say.” Participants trusted and relied on the nurses to give them appropriate medication at the appropriate time.

Over half of the participants limited or tried to limit the amount of pain medicine they were taking. Many said they did not like taking too many pills. Hans said, “No, I believe it takes time for it to heal itself and not force it with too much medicine. ‘Cause I think the pain medicine is what makes me sweat and be weak.” John said, “I guess I just
don’t like to be taking medicine or something all the time.” Millie said, “I been fighting them. I don’t want to take them if I can keep from it.” Because participants did not like taking medication they would not ask for more or different medication if the pain medication they were given was ineffective.

A few participants admitted that they were worried about becoming addicted. Lilly said, “But I gotta get off of Percocet as soon as possible. It can be habit forming.” Lucy said,

But if I can get off of them, I get off of them then. I don’t like to stay on them too long. Sometimes you can get accustomed to this stuff and if you think too much sometimes you think you gotta have them, whether you do or not.

Beliefs about the use of medication and fear of addiction were two reasons that some participants limited the amount or type of pain medicine.

Several participants talked about how the pain medications made them feel. The feelings they did not like include being groggy, dopey, and tired. Nancy said, “I think that is why I’m so groggy; for some reason those pills knock me out like a light. They don’t usually but they did last night.” Millie described how the pills made her feel, “it’s just kind of, ugh, in limbo.” Margaret said, “Groggy and talk to myself, tell my husband I hear the sump pump running, I hear those things running (referring to the cold pack and SCD cuffs).” Some tried to take less medicine or different medicine because of these feelings. Mary said she took the medicine even though she had these feelings because she needed it, “Now that I know what was going on, they [pills] made me feel terrible. I mean, imagining things and, of course I didn’t have any pain, but, anyway, helped me get
through the pain.” Some participants were not taking the pain medications that they should have to control the pain because of these feelings.

A few had problems with nausea and constipation and thus, they asked for pain medication less often. Ila said, “Well, I had, I think I must have had three [pills] at least yesterday cause I got sick and threw up.” Nancy said, “Well they would give it to me more often but I’m just trying not to ask for it as often. …I’m going to try and tolerate it without taking so much because it binds me up and it affects my bowels.” Stan had both nausea and constipation: “[I have to be careful], cause it makes me constipated but it helped [the pain] but as soon as I could get off [of it] I got off.” Unpleasant symptoms such as feeling dopey, being nauseated, and having constipation caused participants to limit the medications they took to control their pain.

Activity

As described previously, the pain that occurred with moving often was severe. All 15 participants talked about moving and pain. Most of them had surgery to increase their mobility rather than to decrease their pain. Improving mobility from their preoperative state was the priority for this group of participants and pain relief was secondary. However, postoperative movement caused an increase in pain for all participants. Hans said, “Pain-wise when I’m not moving, I’m sitting here I’m okay. But if I stand on it again its gonna be there.” Stan said, “If you grab that thing [his foot] and put it down on the floor, I mean, this old boy fires up right now, ‘cause it really, it really, it really hurts.”

In the first day or two after surgery, movement such as moving the leg slightly on the bed caused severe pain. George said, “Sometimes, when they’re moving my foot
around and it hits the floor, it’s just about unbearable.” The severe pain was not constant but came and went with activity. Participants quickly learned that if they laid very still they would have minimal pain. Most of the participants did this especially during the first night after surgery and the first day after surgery. Dan said, “I just lay here and try to sleep.”

All of the participants also described sharp, intense pain with their first physical therapy experience. Heidi thought she might pass out but she did not tell the therapist: “Yes, I walked to the door and back to bed but I almost passed out, I couldn’t hardly breathe.” Therapy continued to be painful during the entire hospitalization. However, the intensity seemed to diminish with time. As participants continued with physical therapy, the intensity of the pain diminished. Heidi went on to say, “But I got up today and walked all the way up to the nurse’s station and back and it wasn’t too bad.” When asked why she thought it was different, she responded, “Well I guess that’s ‘cause I hadn’t been, you know, walking that other was the first time I walked.”

Even though participants knew that moving would be painful, they forced themselves to move. Ila said, “I tried [to walk]. I forced myself, I think. But, she’s hurting today.” The pain prevented her from moving her leg even when she tried repeatedly. Nancy spoke of her will power, “But I just said to myself you got to do it. I mean I’ve always had a lot of will power. I tell myself you got to do it if you want to or not, you’ve got to have that or you don’t get nowhere.” Participants knew that therapy (trying to walk) and getting up out of bed to sit in the chair was necessary for them to recover. Millie said, “It hurts if you move, but you just got to move with it. It’s not going to go
away. And if you don’t move it’s going to get worse… The doctor said that I gotta move it but he said that you can’t go too fast” Their doctors and nurses had made this clear to participants so they forced themselves to participate or follow the directions of the therapist or nurse even if they were in severe pain.

A problem that many of the participants talked about was their leg stiffening up over the night. Lucy said, “My knee is stiffer because it lays there so long.” She also talked about needing pain medications to get through the pain associated with the stiffness, “After you get started your knee limbers up, you know, it’s kind of stiff, so today [the nurse] says I had no pain pills so, I said, well maybe you’d better give me one ‘cause I’m gonna have therapy again.” This stiffness contributed to an increased level of pain especially with the participants’ first movements of the day.

To control their pain at night and to be able to sleep, participants told me that they were very careful to lie completely still so they wouldn’t have pain and could sleep. Lucy said, “As long as I lay still I don’t have no pain.” I also observed this as I interviewed participants. On the first or second day after surgery the participants did not move at least from the waist down. By the third or fourth postoperative day they were starting to wiggle around in bed a little, moving slightly to get more comfortable or moving their nonoperative leg to a different position, but they continued to be very careful with any movements to their operated leg. This non-movement over the night probably contributed to the stiffness they experienced in the morning that caused added pain or discomfort.

Several participants were told that the more they moved the less pain they would have with moving. Kate said, “Well it hurts. It’s going to hurt, you know. And they keep
saying that every time you get up, …it will be better and I believe them ‘cause it is just a little bit easier to take it.’

Other participants described physical therapy as becoming easier with time. They continued to have pain with physical therapy or other moving but it was not as severe or intense. Some participants even said that moving helped to lessen the pain. Larry said, “It seems like it gets better the more I walk on it. Now that sounds kind of funny, but, getting the action in there I guess.” Participants came to believe that the more they moved the less pain they would have with subsequent movements.

A few participants thought that if they had better pain control they would be better able to move and would do better in therapy. When Larry was asked if he would be able to move more if he had better pain control he said, “Well, probably. Yeah, they would give me Novocain or something like that, something, or something local, you know, that, but ah, or whatever they use for local anesthetic, but, but I don’t think they want to because they want you to [have pain], that’s a way of them telling how well you’re progressing, from what I understand.” Some participants believed that evaluating the pain was a way of evaluating their healing. Participants knew from previous experience or quickly learned that movement, sometimes even slight movement, caused a significant increase in their pain.

As discussed above, moving was identified as causing or increasing pain for all of the participants. It is not surprising then to find that lying still was a strategy used by many participants to manage their pain. Hans said, “I mean right now I am scared to even move it and it is uncomfortable to lay in the same place all the time.” Lucy said, “When
I’m laying here, like now, I don’t have no pain.” Heidi, Hans, and Millie also thought that positioning their leg in a certain way lessened the pain. Millie said, “I like this bed being adjusted…all I do is put my head up, but it just feels better with the head up.” Not moving was an intervention used by all participants at some point to control their pain. I observed many of them using this intervention.

Trust

Participants trusted and relied on the nurses to manage their pain. Participants expected that their nurses would know how to best care for them. Mary said, “They are, a lot of them [nurses] are really nice. I don’t think anyone has lost it with me. They’ve all been very helpful.” Millie said, “The nurses here are very good. The ones I’ve had have been very good. They’re very patient with you. …They tell you what you need to do, they give you time to do it. And then if you don’t do it in that time, then they help you.”

Participants also believed that the nurses knew when the patients were having pain and could determine this by just looking at the patient. Stan said, “And they can look you in the eyes and tell. Like I’m sure they can.” John said, “They’ve been very good about it. I mean, they give me a pill now and then. I don’t know what they give me, a pill now and then, I guess for pain mostly.” Larry said, “I’m assuming that they know what they’re doin’ and they don’t want you to [have pain], you know, they know about how much you can stand.” Participants did not feel the need to tell the nurses how to do their job.

Several participants expressed the belief that since the nurse knew the patient’s medications, it was not necessary for the patients to know them. When asked if she knew
her pain medications, Ila said, “No, I don’t know. They (nurses) give them to me.” Lucy said, “I didn’t have to remember if they know what they’re doing. You get so many, you get them all mixed up, so I just let them take care of it. That’s what I’m here for.” Most participants relied on the nurses to know the medications and participants gave the nurses the responsibility to decide what medications were best.

Participants also did not feel like they needed to ask for pain medication because the nurses knew when to give it to them. Many participants relied on the nurses to bring them their pain medication when it was time or when they needed it. Dan said, “They [nurses] watched it pretty close. When it started hurting they was here, they knew just about when to come in.” John said, “I never asked, they just give them to me, say here’s pills. I take them.” Most participants did not think it was necessary to ask for pain medication. When Ila was asked how often she takes pain medicine her response was, “I’ll take them when they [nurses] say it’s okay.” Larry said, “I don’t know, they have a time, you know, between pills, you know, and stuff like that, I’m assuming they do, because they don’t usually want you to, you know, load up on that kind of stuff.” The participants expected that the nurses know how much pain people have after total knee arthroplasty surgery because they care for patients who have had this surgery every day. Participants also relied on the nurses to know the medications that best relieve the pain and to give them their medicine at the appropriate time.

Participants viewed poor nursing care as isolated instances that usually occurred, if at all, with just one nurse. Some participants viewed nursing care as poor when they did
not get their pain medicine when they thought they should or when nurses forced them to move when they were in severe pain.

A few participants related negative interactions with the nurse caring for them. Nancy said, “Well, I mean the nurses have been good to me. I can’t say they haven’t. Sometimes you tell them and it’s like, well what the heck. I get depressed… Well, I think they listen but you’re just another number.” Nancy was describing an interaction with a nurse. The nurse listened to her complaint about not getting pain medication before therapy but she still did not give her any medication. Nancy felt she was treated as a number, but she still felt that the care she was given was appropriate.

Stan also had a problem with one of his nurses, “And she says, you gotta ask for it [pain medicine]. I said, well, I didn’t know that. I ah, I don’t particularly care for that nurse anyway.” Stan did not know that he needed to ask for pain medication and this nurse made it clear that he would not get any pain medication unless he specifically asked for it. This was Stan’s second knee surgery and he relied on his nurses to medicate him at the appropriate times. Isolated examples of poor nursing care, however, did not change the trust or respect that the participants had for nurses in general.

Participants also trusted the doctors and therapists taking care of them. Nancy said, “He said ‘you’re doing great.’ I have a lot of faith in Dr. M; that’s what I need I guess.” Dan’s pain was increasing with physical therapy but he did not tell the therapist, “They went so far and they knew it was hurting and then they quit.” He was relying on the therapist to have knowledge of his pain.
Participants believed the health care providers when they told them the pain would get better over time and the more they moved the less pain they would have. Stan said, “the doctor said I’ll be getting better every day.” His doctor had told him that his pain would lessen every day and Stan was relying on this to happen. Kate and Lucy summarized the participants’ feelings about their health care providers. Kate said, “So, it’s something that they do and that’s good that they do it. You want to go to a hospital that you believe in and trust.” Lucy said, “But I think when you go to the doctor, and put yourself in their hands, you do what they tell you to do, and with a little help above, you make it and everything was good the other time and I think it will be this time.” Participants felt that they had a trusting relationship with their health care providers.

**Purposeful Suffering**

Purposeful suffering is defined as intentionally choosing the experience of knee arthroplasty knowing that pain will be a part of this experience and enduring or living through the pain to gain greater mobility and/or pain relief.

The categories and themes identified in the experience of pain came together to create a new understanding of the experience of pain following total knee arthroplasty. The new understanding is called purposeful suffering (figure 1). The common experiences of the participants are described in the categories and themes. Purposeful suffering is the pattern revealed when the categories and themes are analyzed as a whole.
In figure 1 each theme is represented by a different color. Each theme contains categories. Anticipating pain contains the categories normal process and time. Living the pain contains the categories explaining the pain and additional discomfort. Managing the pain contains the categories medication, activity, and trust. The interaction of all of the categories and themes combines to form the pattern of purposeful suffering. The colors in
the figure representing the themes come together to form a new color, purple, which represents the pattern.

Discussion of the Findings

The research question posed by the study was “What is the experience of postoperative pain following total knee arthroplasty in elderly patients?” The pattern, purposeful suffering, describes the meaning participants conveyed in answering the question. Purposeful suffering describes how postoperative pain was experienced for participants in this study. Purposeful suffering included acceptance of the pain experienced postoperatively and a willingness to endure pain. Frankl (1959) stated that finding meaning gives an individual the capability to cope with suffering. For participants in this study, having the understanding that pain was a necessary part of the surgical experience provided meaning for the pain experience.

Participants in this study understood that having surgery would produce pain. They believed that having pain was an inevitable part of having total knee arthroplasty. The pain was viewed as a necessary experience for healing. Believing that pain was a necessary part of the postoperative trajectory was a learned expectation from either personal experience or from the stories of family and friends. The result was an inaccurate understanding of what the pain experience had to be like after surgery.

Participants trusted nurses to provide appropriate care. They expected that nurses were knowledgeable, compassionate professionals who would deliver expert pain management interventions. This combination of inaccurate knowledge and trust led to acceptance of whatever level of pain the participants experienced.
Purposeful suffering offers an explanation to the phenomenon revealed in several research studies. Quantitative research studies have found that patients report having moderate to severe pain postoperatively while also having a high level of satisfaction with the treatment of their pain (Comley & DeMeyer, 2001; Closs et al., 1993; Dawson et al., 2002; McNeill et al., 1998; Owen et al., 1990; Sjoling & Nordahl, 1998). Two qualitative studies describing pain experiences of hospitalized patients found that patients had a high level of satisfaction with the treatment of their pain even though many had moderate to severe levels of pain (Sherwood et al., 2000; Zalon, 1997).

Prior research has provided no explanation as to why patients with high levels of pain also report a high level of satisfaction with pain management. Several studies, however, have speculated that the relationship established between the nurse and patient influenced patients’ satisfaction with their treatment (Comley & DeMeyer, 2001; Dawson et al., 2002; McNeill et al., 1998). Participants in this study trusted their nurses to treat their pain. This finding supports the proposed explanation that the nurse-patient relationship impacts patient satisfaction.

Participants’ belief that pain is a necessary part of the postoperative experience enables them to endure the pain. Experiencing the pain is purposeful because it is a necessary part of the postoperative experience. In addition, the participants relied on their nurses to manage the pain appropriately. Most participants experienced moderate to severe pain during the 48 hours following surgery with some pharmacologic treatment. The belief that pain was inevitable coupled with a trust in the nurses to relieve the pain
resulted in patients suffering with pain while also being satisfied with the nursing care they received.

_Anticipating Pain_

Participants in this study held the belief that pain was an inevitable part of the postoperative experience, a normally occurring process that would resolve with healing. This finding corresponds with other studies that used quantitative methods (McDonald et al., 2000; Owen et al., 1990; Sjoling & Nordahl, 1998). Subjects in these studies expected to have severe pain postoperatively and had low expectations for pain relief. The subjects participating in these quantitative studies included elderly participants but did not focus solely on elderly people. For many years it has been known that elderly patients expect to have pain and are less likely to report it (AHCPR, 1992). No studies were found that provided an explanation as to how this expected pain may have influenced the postoperative pain experience for elderly people. Some participants in the present study did not believe it was possible to relieve postoperative pain. This belief may provide some explanation as to why elderly people do not report their pain.

Sjoling and Nordahl (1998) found that patients were satisfied with their pain treatment following total hip arthroplasty (THA) and total knee arthroplasty despite having high levels of pain. These researchers hypothesized that the pain experienced preoperatively sensitized them to pain and they then report higher levels of pain postoperatively. Counter to this hypothesis, most participants in this study reported no pain or low levels of pain preoperatively. Participants did however describe their postoperative pain as severe and intense.
In the present study, participants did not understand that their pain could have been relieved postoperatively. Two studies identified preoperative education as effective in reducing postoperative pain (Gammon & Mulholland, 1996; Reichert, 1999). Gammon and Mulholland (1996) evaluated the effects of an education program for patients having THA. Results revealed a reduction in pain when coping techniques and information on pain were taught to patients preoperatively. Reichert (1999) found that a pre-op videotape educational program helped patients using Patient Controlled Analgesia (PCA) to manage their pain more effectively compared to the control group.

Participants in this study received information about the pain following total knee arthroplasty from their own previous experience with the surgery or from the stories of family and friends. A lack of preoperative preparation by health care providers forced patients to rely on information obtained from other sources. Several studies were identified that evaluated the effectiveness of preoperative patient education on postoperative outcomes of patients having total joint surgeries (Gammon & Mulholland, 1996; Golubtsov et al., 1998; Lewis, 1997; Moon & Backer, 2000). However, none of these studies included pain as an outcome. It is imperative that patients are given correct information in regard to postoperative pain and interventions used to manage the pain. Information on pain management needs to be included in preoperative education programs.

The Perioperative Patient Focused Model includes the outcome, “The patient demonstrates knowledge of pain management” (AORN, 2000, pg. 101). The participants in this study did not meet this outcome. Participants did not understand that it was
possible to obtain pain relief. This lack of understanding developed because participants did not receive preoperative education from nurses. They relied on their own previous experiences with this surgery or the stories of family and friends in developing their expectations for postoperative pain relief. Consequently participants believed that postoperative pain was a necessary experience following surgery. Participants did not discuss pain management with their nurses. In addition to not knowing that pain relief was possible, most participants did not know the name of the pain medication or how often they were taking the medication. Having this knowledge would allow patients to contribute to their plan of care. Currently, patients are not as prepared as they could be to deal with postoperative pain.

Living the Pain

An outcome in the Perioperative Patient Focused Model is “The patient demonstrates and/or reports adequate pain control throughout the perioperative period” (AORN, 2000, p. 135). The participants in this study did not meet this outcome. Participants described the pain as severe especially immediately following surgery. A few participants were experiencing severe pain on my first visit to interview them and they were unable to participate due to the pain.

Participants in the present study described severe, intense pain during the first 48 hours following surgery. Most studies describing postoperative pain report similar findings. Owen et al. (1990) found that a majority of postoperative patients reported moderate to severe pain during their postoperative hospitalization, with a quarter of the patients reporting severe or unbearable pain during the first 72 hours. Mueller et al.
(2000) reported that pain intensity is greatest during the first 48 hours following cardiac surgery. Sjoling and Nordahl (1998) reported that patients having THA and total knee arthroplasty experienced the most severe pain in the first 36 hours following surgery. All of the participants in the Sjoling and Nordahl (1998) study reported an increase in pain with movement which is consistent with the findings of this study. Zalon (1997) reported that elderly women recovering from abdominal surgery described the pain in a variety of ways from a dull ache to amazing discomfort or excruciating pain. Unlike the present study, the pain these women experienced postoperatively was less than their preoperative pain.

Crutchfield et al. (1996) compared preoperative pain to postoperative pain in patients undergoing total knee surgery and found that pain intensity increased during the first 24 hours after surgery but decreased substantially by day three. Participants in the current study also had a decrease in pain over time. Pain decreased as healing occurred for the participants. Nurses need to help patients understand that it is not necessary to have pain for healing to progress normally.

It was difficult for several participants in this study to accurately describe their pain. Zalon’s (1997) elderly participants also had a hard time describing the pain they experienced following abdominal surgery. In another study, elderly patients had a harder time reporting and describing their pain than younger participants (Berthier, Potel, Leconte, Touze, & Baron, 1998). Only a small number of participants in the McDonald et al. (2000) study had a hard time describing their acute pain. McDonald et al. did not include elderly participants in their study (age range 18-63 years). Other studies that
measured postoperative pain used quantitative scales, such as a 0 to 10 rating scale or the visual analog scale, and no difficulty in measuring the pain was reported (Celia, 2000; Closs et al., 1993; Feldt & Oh, 2000; Kemper, 2002). Further research needs to be done to establish which scale is easiest for elderly surgical patients to use and which scale most accurately reflects the pain they are experiencing.

From the first interview on postoperative day one or day two, to the second interview on day three or day four, the episodes of severe pain for participants in the current study decreased. Pain also was associated with some type of activity. Feldt and Oh (2000) reported that patients having hip surgery reported significantly higher levels of pain with movement than at rest. They also reported that patients who had higher levels of pain had poor functional outcomes at the 2-month postoperative evaluation. Paice, Mahon, and Faut-Callahan (1995) found that pain interfered with mood, ability to walk, and sleep for postoperative patients. Patients in this study limited their activity in an effort to relieve their pain. Providing better pain relief is essential in facilitating activity that is needed for rehabilitation of the knee after surgery (Flory et al., 2001; Neitzel et al., 1999; Sjoling & Nordahl, 1998; Nussenzveig, 1999).

Managing the Pain

Participants relied on the nurses to know how much pain they had and to provide the appropriate treatments. All of the participants in this study believed that their nurses and doctors were doing all they could to control their pain. In contrast, Dawson et al. (2002) reported that 27% of their subjects believed that the doctors and nurses were doing all they could to relieve their pain. Fewer subjects in the Dawson study trusted that the
nurses were doing all they could to relieve their pain. Participants in the Dawson et al. (2002) study were dealing with chronic pain that they needed to have managed in order to function day to day. The expectation for pain relief may be different depending on the nature of the pain.

Participants expect and trust that nurses are prepared to deal competently with their postoperative pain. Participants in the current study relied on the nurses to manage their postoperative pain. Several research studies found that nurses do not know how to effectively manage postoperative pain (Closs et al., 1993; MacDonald & Hilton, 2001; Neitzel et al., 1999; Paice et al., 1995; Sloman et al., 2001). Only two studies looked specifically at pain in elderly patients (Closs et al., 1993; Sloman, Ahern, Wright, and Brown, 2001). Closs et al. found that patients recovering from hip surgery did not receive more than half of the opioid analgesic prescribed for them even though 41% of the patients were in moderate to severe pain. Sloman et al. found a knowledge deficit among Australian nurses related to pain in the elderly. In the present study the knowledge level of nurses caring for participants was not assessed. However, participants did report severe pain and most received only a portion of the pain medicine ordered. Evaluation of the nurses’ knowledge of pain management in the participating institutions may be warranted. Nurses need to be competent in providing care to ensure relief of postoperative pain. McCaffery (2002) suggested that more education is needed on the basics of assessment and opioid dosing because nurses are not consistently administering opioids for effective pain relief.
Participants in this study took the pain medications given to them and relied on their nurses to know what to give them and when it was to be given. Most of the participants did not realize that they needed to ask for pain medication. Participants’ lack of knowledge is consistent with Brockopp et al.’s (1996) finding that a majority of elderly subjects do not understand that it is better to take pain medication on a regular basis following surgery. One study found that patients treated with around-the-clock oral opioids had significantly less pain than those receiving the same medications on an as-needed basis following total joint arthroplasty (Flory et al., 2001). The average patient age in that study was 65 years. Further studies that replicate the work of Flory et al. are needed to determine if the findings are applicable to elderly patients in other settings.

Limiting pain medication by patients was a finding consistent with previous studies (Brockopp, Warden, Colclough, & Brockopp, 1996; Kemper, 2002; McDonald et al., 2000). Some participants in the current study limited their pain medication because they feared becoming addicted. Brockopp et al. reported that 65% of well elderly people believed that they would become addicted if they took narcotics for pain. In the present study, participants also limited their pain medications due to side effects such as constipation or nausea and vomiting. Kemper (2002) also found that elderly surgical patients limited their pain medicines when they experienced constipation, drowsiness, or nausea. Both nurses and patients need to know how to manage side effects of pain medications so that pain can be relieved without causing additional discomforts for the patient.
Participants in the current study tried to relieve postoperative pain by limiting their activity. When participants were in extreme pain the intervention they chose to use was lying very still. Previous studies have reported that limiting movement was a commonly used intervention to manage postoperative pain (Closs et al., 1993; Kemper, 2002; Milgrom, Brooks, Qi, Bunnell, Wuestefeld, & Beckman, 2004; Zalon, 1997). Zalon reported that lying still was the most commonly used strategy to relieve pain for elderly women recovering from abdominal surgery. Closs et al. identified that bedrest was the only nonpharmacological method of treatment for pain for elderly patients recovery from hip surgery. Kemper reported that immobility was the most frequently used nonpharmacological intervention to treat pain by elderly outpatients having surgery. Limiting movement appears to be an effective intervention used by patients to manage their pain. However, limiting movement can also lead to the development of complications such as pneumonia and deep vein thrombosis. Nurses need to educate patients about appropriate interventions for managing pain. Reliance on inappropriate measures to relieve pain, such as limiting activity, can result in life-threatening complications for patients.

Limitations of the Study

Results of this study were not intended to be generalized to a larger population. Instead, the results describe the shared meaning of the pain experience following total knee arthroplasty for the participants. Most of the participants in this study had surgery in a rural health care facility. It may be that other factors may also influence the pain
experience and would have been identified if this sample had been selected from a variety of health care institutions.

Participants’ interviews were conducted in their hospital room and the setting may have influenced what participants were willing to share. Participants may have limited what they were willing to share if they thought the nurses might hear. Negative experiences with the nurses or complaints about the nursing care may not have been shared. An additional interview following discharge could enhance the understanding of the total pain experience.

The understanding of the pain experience is limited by language and the participants’ ability to communicate the experience. It is possible that some parts of this experience could not be expressed in words. Some participants had a difficult time describing the pain. The complexity of the pain experience makes it hard to communicate to others. Only by actually having the experience would it be possible to share what cannot be put into words.

Participants met the researcher briefly before surgery. The brief meeting was not enough time to establish a relationship with the participant. The lack of an established relationship may have resulted in participants’ limiting what they were willing to share about the experience. A more in-depth preoperative interview would allow the researcher to establish more of a trusting relationship with the participants.

**Summary**

Participants in this study chose to have surgery to increase their mobility and in some cases to also relieve their pain. The desire to improve their condition resulted in a
willingness to endure the pain and discomfots associated with the surgical procedure. *Purposeful suffering* is enduring pain to achieve a desired outcome. In this study the desired outcome from the participants’ perspective was increased mobility and pain relief. Participants did not believe that the pain could be relieved any more than what they were experiencing.

The purpose of this research study was to increase the understanding of the pain experience of elderly patients following total knee arthroplasty. Participants were able to share their stories, allowing an analysis of the pain experience to occur. The pattern of purposeful suffering was identified. Previous studies did not examine the experience of pain following total knee arthroplasty in a holistic manner.

For participants in this study, postoperative pain was not well managed. Most participants had severe pain for some period of time following surgery. Participants also had a lack of knowledge related to pain management that contributed to the acceptance of pain as a normal occurrence following surgery. In an attempt to manage the pain, participants limited their movement. These findings are consistent with previous research studies.

This study was able to identify two factors that contribute to the pain experience that had not been previously described in the literature. First, participants in this study relied completely on their nurses to manage their pain. Participants also relied on their nurses to know how much pain they were experiencing. Participants believed that nurses had this knowledge because they cared for patients having this surgery every day. In addition, participants believed that the pain would be experienced for a limited amount of
time and that the pain medications also would be given for a limited time. Participants appeared to believe that it was not necessary for them to know the medications because the nurses had this knowledge. Teaching participants about their pain medicine would not have been an effective intervention for participants in this study.

The second factor identified was the complete trust that patients had in the nurses to manage their pain. Even when the participants were experiencing severe pain, they felt that the nurses were doing everything possible to relieve the pain. Participants believed that the nurses were competent and caring. This belief led patients to expect that nurses would relieve their pain as much as possible. The total trust and reliance on nurses to manage the pain has not been described in the literature.
V. IMPLICATIONS, RECOMMENDATIONS, AND SUMMARY

The findings of this study can be used to evaluate and perhaps change nursing practice. Implications for nursing practice are discussed and recommendations for future research are offered. The chapter concludes with a summary of this research study.

Implications for Nursing Practice

Patients understand that they will have pain following surgery but they do not know how much pain relief is possible. This lack of knowledge regarding pain control results in patients’ accepting and living with high levels of pain. Pain in the moderate to severe range was common for the participants in this study. The information that participants had about pain control came from their own personal experience or from the experiences of family and friends. Nurses need to evaluate patients’ understanding of pain control and correct individual misconceptions about pain management. There is evidence to support that preoperative education about pain management can be effective in decreasing the level of postoperative pain experienced by patients (Gammon & Mulholland, 1996; Reichert, 1999). Nurses need to include education about pain management and pain relief in the care of all surgical patients. The best way to provide this education remains unclear and needs to be further investigated.

Participants used words and numbers to describe the pain they experienced postoperatively. Some of the words included severe, terrible, excruciating, and amazing. The numbers that were used were based on a 0 to 10 scale that the nurses used to evaluate the patients’ pain. Many of the participants had a difficult time explaining just what the pain felt like and while they may have come up with words or numbers they also
conveyed that their description was incomplete or not totally accurate. The difficulty describing the pain indicates that this experience is complex and is hard to communicate to other people so that they can fully understand. A few participants did not feel that it was necessary to tell the nurse about their pain because the nurses knew how much pain they were having based on their knowledge of the surgery. Nurses need to understand the difficulty that patients have describing their pain and provide a variety of measures to evaluate the postoperative pain. Providing better communication between nurses and patients may result in better pain assessment and postoperative pain management.

Not only did patients experience pain postoperatively but they also had other experiences that added to their discomfort. The rhythmic inflation of the SCD cuffs became a nuisance especially at night. Being connected to several different machines including IV pumps, cold pack systems, and SCD cuffs, limited patients’ movement. Lying in the same position for long periods of time resulted in complaints of pain in their backs and buttocks for some participants in this study. Assisting patients to turn on a more frequent schedule and providing back rubs may have helped alleviate some of the additional discomforts. Nurses need to identify all sources of discomfort for patients. Nursing care needs to be altered to minimize discomfort as much as possible.

Managing postoperative pain was seen as a nursing responsibility by patients in the current study. Participants relied on the nurses to give them the appropriate medication at the appropriate time. Several participants did not realize that they were not getting pain medication if they did not ask for it and thought that the medications they received included pain pills. Some participants went 8 to 10 hours between doses of pain
medication as a result of their misunderstanding. When nurses ask about the patient’s pain, patients assume that their response will be evaluated and the appropriate treatment provided. It seems that nurses do not realize that patients depend on them to provide pain relief in the most appropriate way.

The stories of the participants call attention to the suffering that was experienced. The suffering was a result of unrelieved postoperative pain. Wright (2005) stated that “reducing or diminishing suffering is the center, the essence, and the heart of nurses’ clinical practice” (pg. 36). Nurses did not effectively manage patients’ postoperative pain to relieve patient suffering. The reason for ineffective pain management in this study is unknown.

Increasing nurses’ awareness of patients’ beliefs about pain management could result in a change of practice for nurses. Nurses need to evaluate patients’ understanding of postoperative pain management. Offering pain medications on a regular schedule and educating patients about the effectiveness of taking pain medicine on a regular schedule are simple nursing interventions that could significantly improve postoperative pain management.

Research done to date reveals that nurses have a knowledge deficit related to pain management. Nurses have an ethical responsibility to maintain competence in nursing practice (American Nurses Association, 2001). This competence should include an understanding of guidelines established to manage pain. Interventions used to increase nurses’ knowledge of pain management have not been effective. In addition to the lack of knowledge, it is also possible that nurses do not understand the extent to which patients
rely on them for pain management. Participants in this study placed total trust in nurses to manage their pain. Finding ways to effectively increase nurses’ knowledge of pain management continues to be a challenge.

The participants in this study knew that the pain medication would be given for a limited time. Many participants had a hard time remembering what medication they received to treat their pain. All of the participants had several medications ordered for pain management and did not seem concerned with knowing the specific medication. Many relied on the nurse to choose the medication. It was almost as if patients did not want to waste their time learning about medication that would be discontinued soon. In addition, most participants had a long list of daily medicines that they needed to know. Several participants said that the nurses told them the names of the pain medication but they could not remember the names. Knowing the name of the medicine did not appear to be important to the participants.

Limiting pain medication because of a fear of addiction has been identified as a problem for many years. A few participants in this study shared their concern about becoming addicted to the pain medication. Those participants who expressed a concern about addiction were asked if they ever had a problem with addiction. Participants denied ever having been addicted to any medication. However, the concern about addiction led them to limit the amount of medicine they took to control their pain. Limiting pain medication results in higher levels of pain for patients because the medication may not be as effective or takes longer to be effective in relieving the pain. Nurses need to evaluate
patients’ understanding of pain management and correct any misconceptions, especially those related to medications that can provide effective pain relief.

Recommendations

The understanding of the pain experience following total knee arthroplasty was uncovered using the postoperative stories of participants. The findings of this study suggest that patients’ preoperative understanding of the postoperative experience influences patients’ satisfaction and acceptance of pain. A qualitative study that further investigates this experience and examines the preoperative expectations of participants is warranted. The research questions would include: What do you expect the pain to be like following surgery? How will your pain be managed after surgery? This information may help nurses understand the misconceptions that patients have prior to surgery. Education programs can then be developed that address the patients’ misconceptions.

Participants’ reports of pain suggest that nursing interventions to manage pain could be improved. A qualitative study that examines the postoperative pain experience from the nurses’ perspective would provide insight into the nurses understanding of this experience. Possible questions to pose would include: What do surgical patients need to know about pain management? What level of pain should patients expect to experience following total knee arthroplasty? Is it possible to provide total pain relief to postoperative patients? The answers the nurses provide may help us understand why many nurses do not follow established pain management guidelines.

The findings from this study suggest that a relationship may exist between patients’ knowledge of pain management and patients’ satisfaction with the care received
for postoperative pain. In the current study, patients did not understand that postoperative pain could be relieved and this lack of knowledge seemed to lead to an acceptance of whatever pain was experienced. This perceived relationship needs further investigation using quantitative measures with an appropriate sample size.

Studies that have been done on preoperative education have not focused on the specific needs of elderly individuals. An intervention study that examines different teaching strategies, such as written materials, videotape, and one-on-one instruction, for elderly surgical patients could identify the most effective teaching method. Knowing what teaching methods are most effective would allow nurses to develop teaching materials that meet patients’ needs.

The trust that patients place in the care provided by nurses seems to contribute to patient acceptance of postoperative pain. Participants in the current study believed that the nurses were doing all they could to relieve the pain. If nothing else can be done, the only course of action is to accept the pain and live through it knowing that eventually it will be gone. Further research needs to be done to determine if a relationship exists between trust in nurses and acceptance of postoperative pain.

The elderly participants in this study were able to communicate and had no identified cognitive impairment. Patients with cognitive impairment may have a different experience with pain management following total knee arthroplasty. This would be especially true if patients are unable to communicate that they are having pain.
Summary

The postoperative pain for participants in the current study was similar to that of other surgical patients who reported uncontrolled moderate to severe pain following surgery (Celia, 2000; Closs et al., 1993; Feldt & Oh, 2000; Kemper, 2002; Miller et al., 1996). Participants in the current study were also satisfied with their pain management despite the high levels of pain which is also consistent with previous findings (Blank et al., 2001; Comley & DeMeyer, 2001; Dawson et al., 2002; Owen et al., 1990; McNeill et al., 1998; Sherwood et al., 2000; Sjoling & Nordahl, 1998). The findings of the current study provides insight into the phenomena of patients’ reporting uncontrolled postoperative pain and, at the same time, satisfaction with pain management.

Purposeful suffering is the pattern identified through hermeneutical analysis of the participants’ stories of their pain experience following total knee arthroplasty. Purposeful suffering is an acceptance of postoperative pain and a willingness to endure the pain to achieve an outcome of better mobility with little or no pain. Purposeful suffering comes from participants’ beliefs about the postoperative pain experience and their trust in nurses to provide pain management.

Participants believed that pain was a necessary part of the postoperative experience and they did not understand that pain relief was a desirable outcome. This is consistent with previous research findings (McDonald et al., 2000; Owen et al., 1990; Sjoling & Nordahl, 1998). The trust that patients placed in their nurses to provide pain management was an important finding of the present study. Previous research has suggested that the relationship between nurse and patient influences patient satisfaction.
(Comley & DeMeyer, 2001; Dawson et al., 2002; McNeill et al., 1998). However, no studies were found that examined this relationship. The combination of participants’ beliefs about postoperative pain and their trust in nurses to manage their postoperative pain resulted in an acceptance of postoperative pain and a willingness to endure this pain.

Further research needs to be conducted to determine if other patients undergoing total knee arthroplasty experience purposeful suffering. The experience of purposeful suffering may also occur for elderly patients undergoing different surgical procedures. More studies are needed to determine if purposeful suffering is a common experience or unique to the participants in the present study. In addition, the relationship between patients’ beliefs or expectations about postoperative pain and their trust in nurses to provide appropriate care needs further investigation.
References


Appendix A

DUQUESNE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
403 ADMINISTRATION BUILDING  •  PITTSBURGH, PA 15282-0212

Dr. Paul Richor
Chair, Institutional Review Board
Phone (412) 396-6328  Fax (412) 396-5176
e-mail: richor@duq.edu
web site: http://www2.duq.edu/research/policies.ofn#human

December 22, 2003

Ms. Catherine Kleiner
12471 Co. Rd. U
Napoleon, OH 43545

Re: Experiences of pain in elderly patients having total knee arthroplasty

Dear Ms. Kleiner:

Thank you for submitting your research materials.

Based upon the recommendation of IRB members, Dr. Kathleen Sekula and Dr. Linda Goodfellow, along with my own review, I have determined that your research proposal is consistent with the requirements of the appropriate sections of the 45-Code of Federal Regulations-46, known as the federal Common Rule. The intended research poses no greater than minimal risk to human subjects. In addition, Dr. Joan Kiel, university HIPAA officer, has approved the health information aspects of the study. Consequently, under rules 46.101 and 46.110, your proposed research is approved on an expedited basis.

In accordance with federal guidelines, the IRB now stamps consent forms with an approval date and one-year expiration date. This stamp appears on the front page of the consent form, which is enclosed with this letter. You should use it as the original for your copies. Please remember that there should be two copies of each consent form with original signatures, one for you and one for the subject.

This approval must be renewed in one year as part of the IRB’s continuing review. You will need to submit a progress report to the IRB in response to a questionnaire that we will send. In addition, if you are still utilizing your consent form, you will need to have it approved for another year’s use.
If, prior to the annual review, you propose any changes in your procedure or consent process, you must inform the IRB of those changes and wait for approval before implementing them. In addition, if any procedural complications or adverse effects on subjects are discovered before the annual review, they immediately must be reported to the IRB Chair before proceeding with the study.

When the study is complete, please provide us with a summary, approximately one page. Often the completed study’s Abstract suffices. Please keep a copy of your research records, other than those you have agreed to destroy for confidentiality, over a period of three years after the study’s completion.

Thank you for contributing to Duquesne’s research endeavors.

If you have any questions, feel free to contact me at any time.

Sincerely yours,

Paul Richer, Ph.D.
Chair, IRB

C:
Dr. Kathleen Sekula
Dr. Linda Goodfellow
IRB Records
Appendix B

Medical College of Ohio
INSTITUTIONAL REVIEW BOARD
MEMORANDUM

TO: Catherine Kleiner, M.S.N., R.N.
Department of School of Nursing
MCO

FROM: Katherine Sink, Ph.D., R.N.
Vice-Chair, Institutional Review Board
Research and Grants Administration

DATE: December 12, 2003

SUBJECT: IRB #104554- Experiences of Pain in Elderly Patients Having Total Knee Arthroplasty

The above project was reviewed and approved by the Vice-Chair of the Institutional Review Board as an expedited review (category #6). This includes review and approval of the Consent/Authorization for Use and Disclosure of Protected Health Information Form (version date 11/14/2003) and the demographic data sheet. The full board will review it at its meeting on 01/15/2004.

APPROVAL DATE: 12/12/2003
EXPIRATION DATE: 12/11/2004

NOTE: THE ATTACHED CONSENT FORM WITH REQUIRED AUTHORIZATION FOR USE AND DISCLOSURE OF PROTECTED HEALTH INFORMATION LANGUAGE INCLUDED (VERSION DATE 11/14/2003) WITH THE IRB APPROVAL STAMP IS THE ONLY VALID VERSION. THIS FORM MUST BE COPIED AND SIGNED BY ALL STUDY PARTICIPANTS ENROLLING IN THIS RESEARCH. STUDY PARTICIPANTS MUST BE GIVEN A FULLY SIGNED COPY OF THIS FORM IF THEY CHOOSE TO PARTICIPATE IN THIS RESEARCH.

It is the Principal Investigator’s (P.I.’s) responsibility to:
1. Abide by all federal, state, and local laws and regulations; the MCO federal assurance and institutional policies for human subject research and protection of individually identifiable health information and be sure that all members of your research team have completed the required education in these areas.
2. Ensure that all subjects, or their legally authorized representatives, date the Consent/Authorization for Use and Disclosure of Protected Health Information Form at the time they sign this form to give consent to participate in the study and authorize use and disclosure of their protected health information. Each participant must be given a signed copy of this document. For study subjects that are registered at the Medical College of Ohio (MCO) a copy of the signed and dated Consent/Authorization for Use and Disclosure of Protected Health Information Form must be placed in each individual’s MCO medical record as well. If consent or authorization is revoked by a subject, it is the responsibility of the P.I. to obtain the required signed document(s) and submit these to MCO’s Health Information Management Department as required by institutional policy in compliance with the Health Insurance Portability and Accountability Act of 1996 (HIPAA) Privacy Rule Privacy Rule (45 CFR 164).
3. Comply with the HIPAA Privacy Rule and institutional policy regarding the accounting and tracking of uses and disclosures of protected health information.
4. Promptly notify the IRB at (419) 383-4251 of any untoward incidents or unanticipated adverse reactions that develop in the course of your research on human subjects. Please complete and submit RGA Form 317 for ALL SUCH REPORTS for this protocol. The Principal Investigator is also responsible for submitting to the MCO IRB reports of adverse events that occur at other sites conducting this study and for maintaining an up-to-date cumulative table of adverse events (RGA Form 316) and submitting it to the IRB for each research project. The Principal Investigator is responsible for reporting adverse events to the appropriate federal agencies and the sponsor (when one exists).
5. Report promptly to the MCO IRB any deviations, violations or participant non-compliance from the IRB approved protocol in accordance with the procedures outlined in RGA Form 309. In your report include the protocol number and title, the subject’s initials and study I.D. number, date of the event, a brief description of the occurrence and a description of any corrective actions taken. The Principal Investigator is responsible for reporting deviations,
violations and participant non-compliance to the appropriate federal agencies and the sponsor (when one exists) in accordance with federal regulations, institutional policy and any other legal agreements with these organizations.

6. Obtain prior IRB review and approval for changes in procedures, inclusion/exclusion criteria, study personnel, source of participants, new or additional advertising materials, modifications to subject payments, and for any and all changes to the informed consent/assent/authorization for use and disclosure of protected health information documents.

7. Report promptly new information affecting the risk/benefit ratio and obtain prior IRB approval for any changes in the informed consent/assent documents that may be required by the new information.

8. Obtain prior IRB review and approval for all modified and/or added incentives going to the P.I., study coordinator, other study personnel, and/or the institution. These incentives may be in the form of money or other items of value, including, but not limited to, equipment, such as computers, and intangibles, such as frequent flyer miles.

9. Approval by the MCO Institutional Review Board does not take the place of any other approval required by the Medical College of Ohio, non-MCO performance sites, the government and/or the study sponsor.

To request review and approval for changes to IRB approved research, please complete and submit RGA Form 314 (http://www.mco.edu/research/rga_form/rga314.doc) with a copy of all materials relevant to the requested change (including consent/assent/authorization for use and disclosure of protected health information forms if applicable) with the changes underlined. If you are requesting review and approval of consent/assent/authorization for use and disclosure of protected health information forms, please attach a clean copy of the revised forms for the IRB to stamp.

IRB protocols must be reviewed and reapproved not less than once per year. Research and Grants Administration will try to remind you when reapproval is due. However, it is the responsibility of the Principal Investigator to have his/her own reminder system in place to initiate the re-approval process at least a month prior to the expiration date shown above. Please note that Federal Regulations prohibit the extension of this expiration date.

When you decide to stop this research, you must complete and submit a final report (RGA Form 320) to the IRB for review.

Enclosures: Stamped Consent/Authorization for Use and Disclosure of Protected Health Information document

EAS98

DHHS MPA # M-1358
November 10, 2003

Cathy Kleiner
12471 Co. Rd. U
Napoleon, OH 43545

Re: Research site request

Dear Ms. Kleiner,

This letter is to confirm that Fulton County Health Center has given you permission as the primary investigator in the research study, “Experiences of Pain in Elderly Patients Having Total Knee Arthroplasty”, to conduct interviews with patients that have had this surgery at our facility. As discussed, you may begin conducting interviews with the patients after you have received IRB approval for your research study from Duquesne University.

Sincerely,

Patricia A. Finn
Assistant Administrator
Appendix D

CONSENT TO PARTICIPATE IN A RESEARCH STUDY

Experiences of Pain in Elderly Patients Having Total Knee Arthroplasty

Principal Investigator: Catherine Kleiner, MSN RN
3015 Arlington Ave, Toledo, OH 43614
Phone number: 419-383-5813

Advisor: Linda M. Goodfellow, PhD, RN
Duquesne University School of Nursing
619 College Hall, Pittsburg, PA 15282
Phone number: 412-396-6548

SOURCE OF SUPPORT
This study is being performed as a requirement for the doctoral degree in nursing at Duquesne University.

What you should know about this research study:
• We give you this consent form so that you may read about the purpose, risks, and benefits of this research study. All information in this form will be communicated to you verbally by the research staff as well.
• Routine clinical care is based upon the best-known treatment and is provided with the main goal of helping the individual patient. The main goal of research studies is to gain knowledge that may help future patients.
• We cannot promise that this research will benefit you.
• You have the right to refuse to take part in this research, or agree to take part now and change your mind later.
• If you decide to take part in this research or not, or if you decide to take part now but change your mind later, your decision will not affect your routine care.
• Please review this form carefully. Ask any questions before you make a decision about whether or not you want to take part in this research. If you decide to take part in this research, you may ask any additional questions that you may have at any time.
• Your participation in this research is voluntary.

PURPOSE
You are being asked to take part in a research study of the experience of pain after total knee surgery. The purpose of the study is to increase nurses' understanding of this experience. You were selected as someone who may want to take part in this study because you are having this surgery. Approximately 14 people will be included in this study.

PROCEDURES AND DURATION
If you decide to take part in this study, you will be interviewed. The interview will last about 30 to 60 minutes. I may call you after the interview with additional questions and this may take about 10 to 20 minutes. The interviews will be taped and then typed. I will use your medical record to find out how your pain was treated.

SUMMARY OF RESULTS
A summary of the results of this research will be supplied to you, at no cost, upon request.

RISKS AND DISCOMFORTS
The foreseeable risks include possible anxiety or emotional discomfort associated with recalling your experiences with pain. I will provide suggestions for resources to help you deal with these feelings if you request.

BENEFITS AND/OR COMPENSATION
Although you will receive no direct benefit from this research, this study will help nurses have a clearer understanding of what patients like you experience after surgery. This understanding may benefit other patients in the future. We cannot and do not guarantee or promise that you will receive any benefits from this study. You will not be compensated for your participation.

CONFIDENTIALITY
By agreeing to take part in this research study, you give to the Medical College of Ohio, the Principal Investigator and all personnel associated with this research study your permission to use or disclose health information that can be identified with you that we obtain in connection with this study. We will use this information for the purpose of conducting the research study as described in the research consent form.

The information that we will use or disclose includes the text of your story. This will be typed using an assumed name to protect your identity. The information supplied on the demographic form will be used to describe the people that participated in the study. Your medical record will supply information related to how your pain was treated. If you had surgery at Fulton County Health Center, your medical record from that institution will be accessed to obtain the needed information related to pain management. We may use this information ourselves, or we may disclose or provide access to the information to my dissertation committee as part of the research study.
Under some circumstances, the Institutional Review Board and Research and Grants Administration of the Medical College of Ohio may review your information for compliance audits.

The Medical College of Ohio is required by law to protect the privacy of your health information, and to use or disclose the information we obtain about you in connection with this research study only as authorized by you in this form. There is a possibility that the information we disclose may be re-disclosed by the persons we give it to, and no longer protected. However, we will encourage any person who receives your information from us to continue to protect and not re-disclose the information.

Your permission for us to use or disclose your personal health information as described in this section is voluntary. However, you will not be allowed to participate in the research study unless you give us your permission to use or disclose your personal health information by signing this document.

You have the right to revoke (cancel) the permission you have given to us to use or disclose your personal health information at any time by giving written notice to Catherine Kleiner, 3015 Arlington Ave, Toledo, OH, 43615. However, a cancellation will not apply if we have acted with your permission, for example, information that already has been used or disclosed prior to the cancellation. Also, a cancellation will not prevent us from continuing to use and disclose information that was obtained prior to the cancellation as necessary to maintain the integrity of the research study.

Except as noted in the above paragraph, your permission for us to use and disclose personal health information will stop at the end of the research study.

A more complete statement of Medical College of Ohio’s Privacy Practices are set forth in its Joint Notice of Privacy Practice. If you have not already received this Notice, a member of the research team will provide this to you. If you have any further questions concerning privacy, you may contact the person identified in the Notice.

**COST TO YOU FOR TAKING PART IN THIS STUDY**

You will not have to pay anything to be in this study.

**IN THE EVENT OF A RESEARCH-RELATED INJURY**

In the unlikely event of injury resulting from your taking part in this study, treatment can be obtained at Medical College Hospital. You should understand that the costs of such treatment will be your responsibility. Financial compensation is not available through Medical College Hospital. By signing this form you are not giving up any of your legal rights as a research subject.

In the event of an injury, contact Catherine Kleiner (419) 383-5813.

**VOLUNTARY PARTICIPATION**

Taking part in this study is voluntary. If you decide not to take part in this study, your decision will not affect your future relations with the Medical College of Ohio, its
personnel, and associated hospitals. If you do decide to take part in this research, you are free to withdraw your consent and to discontinue your participation at any time without a penalty.

OFFER TO ANSWER QUESTIONS
Before you sign this form, please ask any questions on any aspect of this study that is unclear to you. You may take as much time as necessary to think it over.

AUTHORIZATION
YOU ARE MAKING A DECISION WHETHER OR NOT TO PARTICIPATE IN THIS RESEARCH STUDY. YOUR SIGNATURE INDICATES THAT YOU HAVE READ AND UNDERSTOOD THE INFORMATION PROVIDED ABOVE, HAVE HAD ALL YOUR QUESTIONS ANSWERED, AND HAVE DECIDED TO PARTICIPATE.

BY SIGNING THIS DOCUMENT YOU AUTHORIZE US TO USE OR DISCLOSE YOUR PERSONAL HEALTH INFORMATION AS DESCRIBED IN THIS FORM.

The date you sign this document to enroll in this study, that is, today’s date, MUST fall between the dates indicated on the approval stamp affixed to the bottom of each page. These dates indicate that this form is valid when you enroll in the study but do not reflect how long you may participate in the study. Each page of this Informed Consent Form is stamped to indicate the form’s validity as approved by the MCO Institutional Review Board (IRB) and Duquesne University Institutional Review Board.

Name of Subject (please print)  Signature of Subject or Legally Authorized Representative  Date

Relationship to the Subject

Name of Person Obtaining Informed Consent (please print)  Signature of Person Obtaining Informed Consent (as required by ICH guidelines)

Signature of Witness to Consent Process (when required by ICH guidelines)

YOU WILL BE GIVEN A SIGNED COPY OF THIS FORM TO KEEP.

If you have any questions concerning this study or consent form beyond those answered by the investigator, including questions about the research, your rights as a research subject or research-related injuries, please feel free to contact: Dr. Paul Richer, Chair of the Duquesne University Institutional Review Board (412-396-6326) or R. Douglas Wilkerson, Ph.D.; Associate Vice President for Research; Medical College of Ohio at (419) 383-4251.

Consent Form Version Date: 11-14-03

Page 4 of 4

APPROVED BY MCO IRB

12/1/03 12/1/04
FROM  TO
Appendix E
DEMOGRAPHIC DATA SHEET

Name______________________________ Age_______ Gender M or F
Pseudonym_________________________ Hospital________________

Date of surgery____________________ Date of interview___________________

Contact Information (for follow-up questions):
Phone _______________________________
Address ________________________________________________________________

Medications used for pain management (per chart)
At home_______________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

In hospital____________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Documented pain (per chart)
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Previous Surgeries ________________________________
________________________________________________________________________
________________________________________________________________________

Education: last grade level completed ______________________________________

Religion: (as reported on chart) _____________________________________________

Race/Ethnic Background (as reported on chart) ________________________________
Each interview will begin by asking the participant to “tell me about your pain” this will allow the participant to begin wherever they like.

Questions will be asked to clarify what the participant has said
“can you give me an example”
“did I understand you to say…”

Patients will be allowed to continue until they have told their story. If they are having difficulty, information gained from the chart will be used to help them recall events or information.
“When you returned to your room from surgery what do you remember about the pain?”
“Yesterday when you started taking medications by mouth how was the pain?”

Other prompts that may be used would include:

Are you in pain now? Tell me what it feels like.

Can you tell me what medicine you are getting for pain? How is it helping your pain?

Are using anything for pain control besides medicine?
positioning, cold applications, relaxation techniques, moving or not moving, ect.

Is your pain relieved now?
What has helped to relieve it? Tell me about when it was being relieved.

How does the pain you had after surgery compare to what you experienced before surgery?

How did hospital staff help you with your pain?
## Appendix G

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