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BEING SAFE & TAKING RISKS:

HOW A GROUP OF NURSES MANAGED

CHILDREN'S PAIN

A thesis presented in partial fulfilment of the requirements for the degree of

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ABSTRACT

A small, grounded theory study was conducted in a children's surgical ward in a large, urban teaching hospital involving registered nurse volunteers. The purpose of the study was to investigate how nurses' deal with children's acute pain. Ten unstructured, but focused in-depth, taped interviews were conducted with five nurses. The constant comparative method as proposed by Glaser and Strauss (1967) and Glaser (1978) was used to generate substantive theoretical categories, a core category and basic social process.

Analysis revealed that what nurses may want to do and what they can do when managing children's pain is not necessarily the same thing. A number of structural barriers to prompt and effective pain management were identified, such as doctors not always being available to write prescriptions, under prescribing or doctors even refusing to prescribe opioids for children at times. Lack of equipment for delivering continuous analgesic infusions meant that optimal methods could not always be used. The predominant method used was intermittent incremental intravenous doses of morphine, which appeared to provide poor pain control in many cases. The analgesic protocols the nurses were expected to follow were time consuming and impractical when they had several children needing analgesia at once. The nurses' solution to such dilemmas was to still act to relieve pain even when this involved some risk because the nurses' believed that the risk-taking was done responsibly, and that it was more important to promote the child's wellbeing.

The types of risks they took included administering several doses of morphine in quick succession without always monitoring for respiratory depression, and altering prescriptions (but not in writing).

Being Safe and Taking Risks emerged as a paradoxical core category, which reflected the pattern for the nurses' pain management decision-making and practice. It also emerged that a moral interest (*Being Ethical*) appeared to direct and connect the nurse's thinking and practice; they tended to do what they considered was in the child's best interests and believed that the benefits outweighed potential harms.

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INTRODUCTION

Despite considerable advances in knowledge about children's pain experience, its assessment and management, research continues to demonstrate that some nurses still tend to under medicate children experiencing pain, or not to medicate at all, even when analgesics have been prescribed (e.g. Altimier, Norwood, Dick, Holditch-Davis & Lawless 1994; Asprey, 1994; Eland 1974; Eland & Anderson 1977; Mather & Mackie 1983; Schecter 1989). Some of the children in these studies had no prescription for an analgesic, and whether nurses tried to obtain analgesic prescriptions for those children is not known. Researchers have suggested that nurses lack education in pain management and efforts to improve pain management have not been very successful. Other reasons for ineffective management of children's pain have been suggested, including the persistence of misconceptions about children's pain, especially in relation to use of opioid analgesics (e.g. Eland & Anderson, 1977; Lloyd & McLauchlan, 1994); lack of assessment skills and failure to use pain assessment tools (Price, 1992; McCaffery & Ferrell, 1994); and situational barriers (Ferrell, Eberts, McCaffery & Grant, 1991). No published research was found that examined how New Zealand nurses deal with children's pain.

To date, the research methods used to investigate the problem have tended to be either surveys involving the use of questionnaires which have provided information about nurses knowledge, beliefs, attitudes, opinions, and perceptions of their pain management or retrospective chart reviews to determine patterns of analgesic prescription and administration. A major criticism of surveys is that they tend to yield rather superficial information, and confusing or unclear responses that cannot be clarified later. Chart reviews may demonstrate only whether an analgesic was given, other strategies directed at relieving pain and the effectiveness of the analgesic may not be recorded.

Researchers have inferred some reasons for poor or no treatment for pain, but few of these have been confirmed. Consequently, not only are nurses' reasons for particular medication decisions relating to children's pain unclear but also little is known about the process of making such decisions. There is also little information about other strategies nurses may use to relieve pain. Thus, research is needed that aims to discover more about what is going on when nurses deal with children's pain.

A qualitative research method, such as grounded theory, is useful for discovering more about a little known phenomenon, or for gaining new insights into an already familiar problem area, such as children's pain management. Unlike surveys, qualitative methods allow in-depth exploration and clarification of ideas expressed by participants.

The Problem of Pain

Pain is a common human experience which most of us would claim to know, to some extent. Yet, it is also a very puzzling phenomenon because people's perceptions of pain can differ; pain can develop and persist with, or without, physical injury; pain may be felt in a body site distant from the location where it originates; pain may be felt in a limb which has been amputated; and sometimes pain is not felt despite major injury. However, the most difficult aspect is that only the person experiencing pain knows what it is like. There is no direct means for measuring their pain.

Elaine Scarry (1985) suggested that pain creates powerful double binds in the minds of those involved. Because pain is an inner experience, even those closest to the patient can never truly observe its progress or share its suffering. As such, she argued, patients have no means for establishing its validity as an 'objective' part of the world for health professionals or society at large. Although pain may be an absolute private certainty to the sufferer, it may also be an absolute public doubt to the observer. *The upshot is often a pervasive distrust that undermines family as well as clinical relationships* (Good et al., 1992, p. 7).

The parents of very young children presumably know their children well including how they react to stress and pain. Thus, parents can provide valuable information to assist nurses in their assessment of children. Even though the parent may be absolutely convinced that their child is in pain, some health professionals may doubt this, leading to distrust between the family and health professionals caring for their child. Children can experience difficulty, even when supported by the parents, in both communicating their pain, and getting adequate relief.

Schechter (1989) has suggested that lack of appreciation of the subjectivity of pain experience has been the main cause of under treatment. If health professionals adopted McCaffery's dictum that pain *is whatever the person experiencing it says it is, existing whenever the experiencing person says it does* (McCaffery & Beebe, 1994, p. 15) whether they are adults or children, then a significant aspect of the problem of under treatment for pain would surely disappear.

The researcher's interest in children's pain experience

My interest in how nurses deal with children's pain arose from personal experience. When she was nine years old, my daughter spent some time in hospital with a painful, undiagnosed orthopaedic condition that severely limited her mobility. At home her pain had been managed with a regimen of paracetamol every four hours and twelve hourly diclofenac. Following admission to hospital she had difficulty convincing some of the nurses that she was experiencing pain and obtaining an analgesic, despite the fact that there was one prescribed. Later, as a clinical lecturer working with nursing students in the same paediatric ward, I became aware that some of the nurses at times were reluctant to give analgesics to children who said they were in pain. Thus, this clinical issue challenged and interested me as a parent, a nurse and an educational professional. I believe that parents ought to be able to have confidence in the practice of nurses caring for their children and nurses ought to demonstrate current knowledge for the specialty they work in. The profession also expects this as described in the Code of Practice for Nurses and Midwives (Nursing Council, 1996).

In summary, various studies have shown that dealing with children's pain is problematic for some nurses and doctors. Thus, as a researcher, I was interested in the problem relating to: *What happens when nurses provide care for children experiencing pain?*

The aim of this study was to approach the problem area with an open mind and attempt to discover from nurses their perspective on this; that is, the form of research was to be one of discovery. The research approach, which advocates discovery as its *modus operandi*, is 'grounded theory.' Glaser and Strauss, two sociologists, developed this method in the 1960s during their study of dying patients in hospital. The grounded theory researcher attempts to discover the nature of the problem, whether there are any patterns in the problem and how it is processed, and if so how these patterns may be related (Artinian, In Chenitz & Swanson, 1986; Glaser & Strauss, 1967).

In their original formulation Glaser and Strauss (1967) recommended putting aside one's pre-conceived ideas, values and beliefs in order to be open to what is going on in relation to the problem being studied. However, Glaser (1992) later acknowledged that professional and personal experience and in-depth knowledge of the area being studied may contribute to the researcher's ability to be theoretically sensitive; to generate categories, their properties and relationships. "This is particularly true for generating *in vivo* categories- those using the terminology of the area under study" (Glaser, 1992, p. 28). Thus, the researcher's knowledge and experience of the substantive area being studied can contribute to the research enterprise when used judiciously.

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Structure of the thesis:

Chapter 1 - is a critical review and discussion of selected research, and other literature relating to children's pain assessment and treatment

Chapter 2 - provides an overview of the research approach used in this study; grounded theory. Methodological issues of concern to the grounded theory researcher are identified and discussed. The research process used in this study is then described including the area of concern, study purpose, study setting, access to, and recruitment of participants, and sources of data. Ethical considerations and procedures used to enhance rigour in this qualitative study are also discussed. Finally, issues and problems associated with doing research in a familiar culture, and subjectivity are discussed. Any difficulties encountered during the actual research are identified and explained throughout.

Chapter 3 - describes the process of data analysis and generation of theory. This follows Glaser and Strauss' strategies for discovering grounded theory as described in their book The Discovery of Grounded Theory first published in 1967 and later publications (Glaser, 1978; Glaser, 1992, Glaser, 1998).

Chapter 4 - describes the *core process* that emerged from the data: *managing pain*. The five stages of the *managing pain* process: *assessing, checking and interpreting, choosing, giving, and monitoring and responding* are also described. Excerpts from the data are used to illustrate each stage and its properties, and there is a brief discussion with reference to nursing and other relevant literature.

Chapter 5 - describes one dimension of the *core category*, which emerged from the data: *being safe*. The category *being safe* has four properties: *following rules, right responding, being cautious* and, *managing risk*. Excerpts from the data are used to illustrate *being safe* and its properties, followed by a brief discussion with reference to nursing and other relevant literature.

Chapter 6 - describes the other dimension of the core category that emerged from the data: *taking risks*. *Taking risks*, as used here, refers to exposing the patient to some

inherent danger related to administering pain medication. Excerpts from the data are used to illustrate *taking risks* followed by a brief discussion with reference to nursing and other relevant literature.

Chapter 7 - describes a pervasive and significant category: *being ethical*, that underpinned the core category of *Being Safe and Taking Risks*. The category *being ethical* contains the properties of ‘*doing good*’ (and its corollary *preventing harm*); *being trustworthy*; *being an advocate*. When the nurses felt unable to achieve their ethical ideal when managing pain they reported feeling distressed. Each of the properties of *being ethical* is critically discussed in relation to selected ethics literature.

Chapter 8 - The tentative theoretical relationships between *Being Safe and Taking Risks* while *Being Ethical*, and the process of *Managing Pain* are described. The implications of these findings for nursing education, and practice are discussed. The limitations of the study and recommendations for future research are also discussed.

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CHAPTER ONE

Literature Review

Introduction

The literature reviewed here includes key research, which has investigated nurses' practice in relation to children's pain, beginning with Eland's (1974) ground breaking study. The focus is acute pain associated with surgical operations and medical procedures. Studies relating to chronic pain were not included because this type of pain differs from acute pain, both its physiology and treatment is more complex. The studies are drawn from both the nursing and medical literature. In addition, some other medical and nursing literature on pain assessment and management have been included. The aim of this literature review is to provide an overview of existing research that had been done, what research questions had been posed, and how the substantive area was conceptualised (Bowers, 1988). A concurrent aim was to establish this study's purpose, background, and significance to meet institutional review requirements in 1995- it is not meant to be comprehensive.

As already described in the Introduction, numerous studies have shown that children have been under medicated or even received no medication for pain post operatively or while undergoing painful procedures. Various reasons for the under treatment of children's pain have been proposed, including that nurses lack pain assessment skills and some researchers have investigated this aspect. Another suggestion has been that before the early 1970s many health professionals believed that children's pain was not a significant problem. According to Eland (1974) this belief was reflected in medical and nursing textbooks, which identified pain as a symptom accompanying illness but devoted little or no space to the assessment or management of pain in children. Prior to 1977 the only nursing article in the paediatric pain literature was one by Schultz (1971) that described how 74 healthy 10 and 11 year olds perceived pain during immunisation.

Although Schultz's findings are meaningful for the well child of this age range, nurses had not at that time investigated the pain experience of sick children. However, since the 1970s, there has been increasing interest among nursing and medical researchers in studying the phenomenon of pain in sick children.

The International Association for the Study of Pain has defined pain as: *an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage* (Merskey et al, 1979). They go on to suggest that the experience of pain is always subjective and that the individual learns the meaning of pain through actual injury related experiences from an early age. Implicit in this definition is the idea that pain is multidimensional not one-dimensional, that is, it has both a neurophysiologic sensory component and an emotional one, and is influenced by the person's affective state, past experience, developmental level and a variety of other factors. The important point to note is that an individual's pain experience is not directly related to the amount of tissue damage, which has occurred, but to a composite of the nociceptive stimulation from the tissue damage and a host of critical modifying factors, which diminish or magnify the pain. Schechter (1989) suggested that it has been a lack of appreciation of the subjectivity of pain, which has led to its under treatment.

Studies of postoperative pain management

Early medical articles suggested that there was often no need to treat children's post-operative pain. Swafford and Allen (1968) reported that only 2 out of the 60 children in their study¹ required analgesics following surgery and stated that:

Paediatric patients seldom need relief of pain after general surgery. They tolerate discomfort well. The child will say he does not feel well or that he is uncomfortable or that he wants his parents, but often he will not relate his unhappiness to pain (p. 133).

The nurse who first documented the extent to which this philosophy appeared to dominate practice was Eland (1974). She reviewed the charts of 25 children who underwent surgery at a teaching hospital in Midwestern US to determine analgesic usage.

It was found that despite the fact that most (97%) of the children had medical orders for analgesics, thirteen (52%) of the twenty-five children between the ages of 5 and 8 years who underwent major surgical procedures including spinal fusion, burns debridement, nephrectomy, and open-heart surgery, received no analgesics for their pain. Those children who did receive an analgesic ($n = 12$) mostly received aspirin or paracetamol (acetaminophen), even after major surgery or injury. Later, Eland and Anderson (1977) in a retrospective chart review compared the type and administration doses of analgesics for 25 children and 18 adults with identical medical diagnoses, and found that the children received only 4% of all the analgesics administered while the adults received 96%. Thirteen of the children received no analgesics at all, despite diagnoses such as traumatic amputation of the foot, excision of a neck mass, and heminephrectomy.

Some years later a study at a southern university medical centre (US) by Beyer, DeGood, Ashley and Russell (1983) investigated the postoperative prescription and administration of analgesics following cardiac surgery for 50 children and 50 adults selected randomly. A retrospective chart review was conducted using students from the School of Nursing. Interrater reliability was obtained by having two individuals collect the data on each subject independently and then compare the two data sheets. If conflicts arose, the two raters rechecked the charts until agreement was reached. The data collected from patient's charts included: age, sex, race, weight, and the analgesics and antipyretics ordered and administered on the first 3 postoperative days and the fifth postoperative day. Pharmacological reference texts were used to establish whether the dosages prescribed were therapeutic when calculated using the patient's weight.

Significant differences in the prescription and administration of analgesics after open-heart surgery were found between adults and children. Six children were the only subjects who had no analgesic prescription during the first 3 postoperative days. Further, when analgesics were prescribed the children were prescribed fewer potent opioids than adults; morphine was prescribed twice as often for adults as for children during the first 3 days postoperatively. The adults' prescriptions tended to be congruent with recommended dosages, but most of the children's prescriptions were less than the

¹ The authors did not report full details about the method.

therapeutic range. Conversely, the researchers reported that some of the children's prescriptions (14 or 16.5%) and one of those for adults were above the recommended dosage. Obvious differences between the two groups were still apparent by the fifth postoperative day by which time most of the children's analgesics had been discontinued but the adults still had analgesics available to them. Statistically significant ($p = 0.05$) differences between the children and adults were also found when drug administration charts were analysed. During the observation period, adults received 70% of all analgesics administered but children only received 30% of these. It was also clear that the younger the child the fewer the postoperative analgesics administered. Of those children given analgesics they received on average only 2 doses per day during the first 3 postoperative days. Although almost half of the children had prescriptions still available on the fifth postoperative day, actual administration was negligible. In contrast, almost all of the adults had prescriptions still available and continued to receive analgesics on the fifth day. But perhaps the most critical finding was that 12 children, all infants and toddlers, never received any analgesics during their first three or five postoperative days.

Although these differences in analgesic use between adults and children were considerable they were not as dramatic as earlier studies (Swafford & Allen, 1968; Eland, 1974; Eland & Anderson, 1977) had shown. Therefore, Beyer et al (1983) concluded that the majority of personnel involved in the care of their paediatric sample clearly believed that children required at least some degree of analgesia following cardiac surgery, but not as much as adults. The researchers reported that there were uncontrolled features of their study which may have influenced patient pain experience and subsequent management including: medical diagnoses, location of the surgical site, occurrence of postoperative complications, presence of intrapleural drains and physical location within the hospital. Excluding these uncontrolled features the researchers proposed 4 reasons which could explain the many differences found in analgesic prescription and administration between adults and children in their study: children feel less pain, children do not communicate effectively the pain that they feel, health professionals are reluctant to administer analgesics to children because of fear of possible side effects, and less medication is required for paediatric pain relief because

analgesics may be distributed, metabolised, and eliminated differently in children than in adults.

They suggested that because it was difficult to measure children's pain they could not unequivocally state that the paediatric patients in the study suffered undue discomfort as a result of under medication. Nevertheless, they believed that analgesic administration ought to be a priority and non-pharmacological measures could be used to supplement pharmacological interventions. Nurses, they argued, held the primary responsibility for ignoring unproven assumptions about children's pain and for the effective relief of discomfort. Health professionals, they said, should consider the possibility that children feel pain as intensely as adults do and that the primary difference between the two may be in the accuracy and maturity of their pain expression. "Thus, health professionals should respond to children proactively and humanistically in the anticipation and relief of their pain" (Beyer et al, 1983, p. 80).

Although this study suggested that some improvements in managing children's pain had occurred there were still major concerns that needed to be addressed. The study also raises some other concerns, such as that it was a retrospective study so the researchers were unable to clarify reasons for the differences in analgesic prescribing and administration with the nurses and doctors concerned. The researchers also did not investigate pain ratings for either group so it is unclear whether those subjects who received few or no analgesics experienced sufficient pain to warrant administration of an analgesic. A number of student nurses were used as data collectors, which may have led to problems with interrater reliability despite attempts to overcome this. Furthermore, the students' ability at accurate drug dose calculations was not established.

In a larger Australian medical study, Mather and Mackie (1983) surveyed the incidence of pain in 170 children (mean age 8 years) recovering from surgery in two major teaching hospitals, and analysed the prescription and administration of analgesics to these children. Their study comprised prospective interviews with children and pain assessment during their surgical recovery carried out by one specially trained nurse, rather than just retrospective chart reviews as the earlier studies had done.

It was found that only 25% of patients were pain free and that many (40%) of the children reported moderate to severe pain in the early postoperative period regardless of their analgesic treatment. Despite the fact that most of the children reported having moderate or severe pain no analgesics were ordered for 16% of the child patients and, for those for whom an opioid analgesic was ordered, 39% were never given any, which together means that 55% of the children received no analgesic. When patients were ordered both opioid and non-opioid analgesics (e.g. paracetamol) the researchers found that only the non-opioid analgesic was given. Analysis of the medical orders showed extremely variable prescribing habits, and that doses were frequently too small or too infrequent. For example, prescribed doses of pethidine ranged from 0.25 to 1.5 mg/kg and nearly 50% were for less than 1mg/kg even though the stated paediatric dosage in the formulary of one of the hospitals surveyed was 1-2mg/kg. Thus, many of the doses ordered were inadequate, irrespective of the dosing frequency actually administered. The majority of the orders were written, as 'PRN' which the researchers said seemed to be interpreted by the nursing staff to mean 'as little as possible'. Nursing staff also seemed to prefer to give non-opioid rather than opioid analgesics even immediately after surgery. Thus, the interpretation of the analgesic prescriptions by the nurses often contributed to poor analgesia. Many of the children surveyed 'became withdrawn' and this was interpreted as coping with pain.

Mather and Mackie concluded that children's postoperative pain management required considerable improvement, and that both medical and nursing education was inadequate in these areas. In particular they recommended that nurses be taught more about the pharmacology of the drugs they administer to patients and also of the significance of pharmacokinetics so that 'old wives tales' and ignorance could be replaced by scientific knowledge.

Schechter, Allen and Hanson (1986) conducted a retrospective chart survey of 90 children and 90 adults who were randomly selected and had the same diagnosis (hernias, appendectomies, fractured femurs or burns) in an urban and a rural hospital in the US. Data gathered included age, length of stay, number of doses of all types of analgesics administered, and the route of analgesic administration.

They found that adults received on average twice the number of opioid analgesics per hospital stay as the children. Infants and young children were less likely to have opioids ordered for them than older children or adults. However, when analgesics were ordered, they were administered with the same frequency to infants and older children. There was a rural urban difference in opioid usage with the urban hospital using them more liberally than the rural hospital. Finally, they also found that the longer the patient stayed in hospital the greater the discrepancy between child and adult opioid administration.

The authors concluded that their findings supported the literature on this topic that demonstrated that adults with the same pathophysiologic problems are treated differently than children in relation to opioid administration. In addition, because their study more rigidly controlled for medical diagnosis, length of stay, and type of hospital, and because they selected more common diagnostic categories they claimed that their results added to the generalisability of previously published work. However, there was no information about pain ratings to determine the extent of untreated pain. The retrospective nature of the study also meant that there was no opportunity to ask staff about their pain management decisions.

In another US study, Rauhen and Holman (1989) conducted a retrospective chart audit to determine whether children were receiving adequate analgesia following tonsillectomies as part of a quality assurance program. The nurse researchers collected a range of information including: pain ratings; patient behaviours; vital signs; nurses comments about effectiveness; non-pharmacologic pain interventions; and, medication, time, dose and route. They developed a Pain Control Flow sheet for use as a data collection tool. The sample comprised 50 charts on patients whose ages ranged from 3 to 10 years and who were hospitalised between 1987 and 1988 for tonsillectomy and in some cases adenoidectomy as well. There were 28 boys and 22 girls in the study group with a mean age of six and a half years. Most of the children (76%) had both a tonsillectomy and an adenoidectomy; the remaining children (24%) had tonsillectomies only.

It was found that the children received an average of 4.9 doses of analgesia during their postoperative stay on the paediatric unit (length of stay was 24-36 hours), at time

intervals that ranged between three to six hours. Significantly fewer doses of analgesia were administered on the night shift than during day shifts. The researchers were also concerned that 13 to 14 children had a time interval of greater than eight hours between analgesic doses which they considered too long particularly in view of the children's reported pain level. The analgesic dose orders were within an appropriate range based on patient's weight. The effectiveness of the analgesics was determined by what was charted in the patient's progress notes and nursing care flow sheets. Review of this documentation showed that analgesia was effective (good) in 43 (86%) of the cases and ineffective (fair to poor) in 7 (14%) of the cases. Indicators of effective analgesia were taken from actual statements from the child or nurse about increased comfort, increased oral intake, playfulness or restfulness. Whereas fair to poor effectiveness of analgesia was determined by the child expressing discomfort, poor fluid intake, absence of play, restlessness, crying, irritability, or difficulty swallowing. The nurse's rating of the child's pain based on what the children said and the behaviour they displayed, was also considered an as indicator of effective pain control.

Non-analgesic methods of pain relief were consistently used for all the children studied and included positioning, sips of fluid or application of ice. The researchers concluded that most of the children whose charts were reviewed received adequate analgesia most of the time. But they were concerned about those children (7) who apparently received ineffective pain control particularly when the reasons for this outcome were unknown. They recommended that nurses be educated about the importance of maintaining analgesic blood levels including waking the sleeping child to administer an analgesic.

Although these researchers collected a broader range of data about pain relief than some other studies the restrictions of a retrospective approach meant that they could not clarify nurses' reasons for administering fewer analgesic doses to some children. Moreover, the validity of the pain ratings could not be established because no consistent tool was used.

In a later US study Altimier, Norwood, Dick, Holditch-Davis and Lawless (1994) conducted a retrospective chart review involving younger children within the first 48 hours after surgery to examine the prescription and administration of analgesics, with

and without caudal analgesia. Charts were reviewed from all paediatric and neonatal units that routinely provided postoperative care for preverbal children less than 24 months of age at a large university hospital. In total, 85 consecutive charts of children from birth to 24 months of age were reviewed. The charts of children who had spina bifida, spent less than 48 hours in hospital, had severe developmental delay, were comatose or those with impaired hepatic or renal function ($n = 10$) were excluded, so that the final sample consisted of 75 children.

It was found that 70 (93%) of these children were prescribed analgesics, but 8 of them were only prescribed acetaminophen (paracetamol). This left 5 patients (6.7%) who had no prescription for analgesic. Of the 70 children prescribed analgesia, 64 (91%) received analgesics. The most frequently administered analgesic was morphine but the prescribed and administered mean dosages were less than the minimum recommended. However, the mean prescribed and administered dosage for other analgesics exceeded the minimum recommended dosage. It was further found that preverbal children who had caudal analgesia during surgery were more likely to receive fewer dosages of analgesics and to receive lower dosages of opioids even after 24 hours postoperatively than children who had not had caudal analgesia.

The researchers concluded that there had been some improvement in children's postoperative pain management since the studies conducted in the early and mid-1980s (Beyer et al., 1983; Mather & Mackie, 1983; Schechter et al., 1986). However, it was still a concern that some (5) children still had no prescriptions for any form of analgesic postoperatively.

Again, the limitations of a retrospective study meant that the researchers could not determine whether these instances represented oversights, medical decisions, or a different philosophy on the part of some doctors. It was also not possible to determine whether nurses attempted to obtain analgesic prescriptions for those children. The researchers' recommendations included in-service education for nurses on the assessment and treatment of pain in preverbal children, including pharmacology and therapeutic dosages. They further proposed that research which would investigate

doctors' and nurses' beliefs, fears, concerns, and knowledge about analgesic prescription and administration was needed.

Two Swedish studies also investigated postoperative pain management of infants. The first was a retrospective chart review (Elander, Okmian, Jansson, & Sandberg, 1991, cited in Elander, Hellström & Qvarnström, 1993²) of 70 infants who had undergone major surgery at two university hospitals, which showed that 40% of the infants received no pain relief postoperatively. Elander, Hellström and Qvarnström (1993) noted that as this first study was retrospective, and the records gave little or no information about the effect of analgesics given they could not even assume that those children who did receive analgesics obtained effective pain relief. To overcome these limitations the second study used a prospective, descriptive design. Infants were observed during the 24-hour period after major surgery using videotaping. The videotapes were later analysed using a clinical pain scoring system which the authors said were developed by Attia, et al. (1987). Three observers monitored analgesic administration, sleep-wake states, facial expression-vocalisation, and ambient activities and care routines. Infants scheduled for a variety of major surgeries were consecutively selected for the study; exclusion criteria included those who had additional diagnoses and those who developed postoperative complications. A convenience sample of 12 infants eventually participated in the study. Observations began immediately after surgery and were made for five minutes every quarter of an hour (a total of 48 five-minute observation periods during the 24 hours after surgery); every second observation period was audio visually recorded as well. Observer decisions about the variables being noted were based on the predominant state during the 5-minute period. All surrounding activities and care routines, parental presence or absence, and pharmacological treatment were continuously recorded for the 24-hour period. The observers were trained over a six-month period until high interrater reliability was established (85% for sleep-wake states and 95% for facial-expression-vocalisation). The videotapes were analysed independently by the authors for infant behaviour and using the pain score system. No information about the infants, analgesic administration or care received was used during analysis. Interrater reliability for the pain score system was 95%.

² Article not available in English.

The results indicated that only 5 infants showed occasional episodes of quiet sleep and were awake for 50% of the observed episodes. Moaning-crying was observed during 56% of the episodes for 4 infants and during 29% for 6 infants. The authors proposed that this did not necessarily mean that these infants were in pain. However, 36% of the episodes had pain scores below 14 ($M = 7.7$), which according to the authors of the pain scoring system indicated unsatisfactory pain relief. Inadequate pain relief is one possible reason for; the poor sleep, frequent crying and unsatisfactory pain scores. The authors noted that the infants were given four different types of analgesia, which were administered using five different methods. In addition, almost all of the infants received varied dosages of the same analgesic. The mean number of doses was 5 (range 1-8). The authors suggested that this meant there was no apparent agreement regarding which analgesic, dose, or interval between doses was appropriate for infants postoperatively. Another concern was that many of the infants were given analgesics subcutaneously. This was an additional source of pain, and was unnecessary because they all had IV access. However, at the time of the study (1990-1991), there was no policy for IV pain management. There was no correlation between the number of analgesic doses given and the infants' behaviours, which either meant that their pain relief was inadequate or their distress was not pain related. Even after analgesics were administered some infant's pain scores remained unsatisfactory so their distress could at least partially be attributed to pain. Other considerations noted were that the constant noise, lights, care routines and absence of parents may all have contributed to the infants' wakefulness and distress.

The generalisability of the study's findings is limited by its small size. In addition, the authors were unsure whether the validity of the pain score scale they used had been established. Attia et al (1987) had developed and used the scale to compare pain in infants after minor surgery, whereas the infants in Elander, Hellström and Qvarnström's (1993) study had undergone major surgery. The authors recommended that systematic pain assessment should become part of the postoperative routine for infants, that nurses need to be trained to recognise behaviours that may indicate pain in the infant, to continually update their knowledge of pharmacological and other interventions for pain relief, and that analgesics should be given continuously by the IV route whenever possible. In addition, nurses needed to develop sensitive care practices including timing

of care routines and other interventions (eg. blood tests) to maximise infants' opportunities for undisturbed sleep. The supportive presence of a parent is essential for easing an infant's anxiety and distress and nurses could encourage and support parents of sick infants. Nurses also need to consider the unit's environment from the infant's perspective and take appropriate action to reduce noise and other disturbing sensations. They can also encourage parents to bring in the infant's favourite blanket or soft toy to create a more familiar, comforting, and less threatening environment.

The authors concluded that there was no longer any need to prove that infants feel pain: the onus should be on those who claim otherwise to prove it. They argued that unrelieved pain has negative physical and psychological consequences for the infant and aggressive postoperative pain prevention and control has both short and long term benefits. Nurses have a major role to play in pain assessment and both pharmacologic and non-pharmacologic interventions to assure effective pain relief in infants.

Asprey (1994) replicated the classic study conducted by Eland (1974), and investigated the prescription and administration of postoperative analgesics in a paediatric population. Patients were selected from a computerised listing of all children admitted to the hospital between 1988 and 1991 for a 1:1 ratio matching with the surgical diagnoses and age grouping of Eland's (1974) sample. Eight different hospital services were represented in the sample. Length of stay was recorded in the later study and varied greatly depending on the diagnosis and type of surgical procedure but was not recorded in Eland's (1974) study. The length of stay ranged from 3 to 55 days with a mean of 11.7 days. The purpose was to compare and contrast results over almost 20 years in order to determine whether any changes had occurred in analgesic administration to postoperative children in the same large midwestern teaching hospital.

Results showed that all 25 children in the later sample had orders for an analgesic and that 23 were for opioid analgesics compared to Eland's finding that 4 children had no orders. Both children without prescriptions for opioids, in Asprey's study, were from the eye surgery service. The types of medication ordered included morphine sulphate, meperidine, codeine, acetaminophen, and belladonna and opium suppositories - "a drug frequently ordered for children with urinary catheters to reduce bladder spasms"

(Asprey, 1994, p. 152). The drugs ordered were to be administered via the oral, intramuscular, rectal, and intravenous routes. Dosages ordered were within the therapeutic range in 63% of the cases but sub therapeutic in 26% of the cases and in 10% of cases exceeded the recommended range (American Pain Society Guidelines, 1989). When nurses had a range of doses to choose from the nurses selected the upper limit of the range in 63% of the cases. According to the author this was frequently observed when individual doses ordered were too low for the child's weight and suggests that the nurses were discriminating and choosing the most appropriate dose for the child's weight. In Eland's study only 12 children received an analgesic but Asprey found that all 25 children in her study did, and 20 received an opioid analgesic. Of those children ($n = 23$) who had orders for both an opioid and a non-opioid, 19 actually received both. The 12 children in Eland's study who were given analgesics received a total of 24 doses (range 1-5 doses) whereas the children in Asprey's study received 968 doses with an average dose of 3.3 doses per day with a higher average dose (4.4 doses per day) being given during the first 48 hours postoperatively. Some sex differences were noted, the 2 children who did not have orders for an opioid analgesic were boys, and all 5 children who did not receive an opioid analgesic postoperatively were boys. However, the surgical procedures the boys had were all considered minor ones (eg. lensectomy, removal of a corneal foreign body, hypospadias repair, ptosis surgery and radial digit nerve repair).

Asprey concluded that the prescription and administration of analgesics amongst paediatric patients at that hospital had improved dramatically over the past 18 years. She attributed this improvement largely to the work of Eland who had presented content on nursing care of patients in pain to nursing students in the undergraduate and graduate nursing programs as well as numerous offerings to practicing nurses in the hospital and community, since 1975. However, she also noted with concern that one child was given 66 doses of meperidine (pethidine) following a traumatic leg amputation. According to the American Pain Society (1989) repeated doses of meperidine results in the accumulation of the toxic metabolite normeperidine, which occupies the opiate receptor sites for up to 30 hours, and prevents the active drug from providing pain relief.

A build up of normeperidine with additional doses may cause irritability, tremors, central nervous system excitation, and even seizures in some individuals. Meperidine is best used for pain of brief duration but should not be used for long-term pain relief (American Pain Society, 1989). Interestingly, this patient was reported in the nurse's notes to be extremely irritable and complained of pain frequently. The nursing staff believed that the 6-year-old patient was exaggerating her pain and gave cherry elixir for a placebo. In retrospect, it is reasonable to suspect that the child was probably suffering from the toxic consequences of normeperidine build up and was not receiving adequate analgesia (Asprey 1994:156).

Asprey noted that some problems with prescribing and administration of analgesics to children persisted and recent developments in pharmacotherapeutic research needed to be considered. Nurses, she said, were in an excellent position to consult with physicians to achieve the most effective pain relief for their patients. However, Asprey did not comment on whether nurses attempted to negotiate more effective pain management with the doctors. It is also not clear whether nurses administered the prescribed dose or a reduced, safer dose when the dosage exceeded current guidelines. Lack of information about pain ratings also means that the extent of unrelieved pain amongst the children was not known although it could be presumed to exist given the nature of the surgical procedures.

Studies and Literature Relating to Procedural Pain

Concerns have also been raised that children's pain during medical procedures in emergency rooms and other settings has also tended to be under treated or not treated at all. According to Read (1994) often children admitted to emergency rooms have sustained acute trauma injuries which are painful such as burns, lacerations, and fractures, or they are subjected to painful procedures such as wound debridement, suturing, and reduction of fractures. She also claims that it is not unusual for children presenting to the emergency room experiencing pain to have to wait until registration and procedures such as x-rays are completed before they are medicated for pain. In addition, she suggests that the focus of emergency room staff is often the stabilisation of critically ill children and the saving of lives, and in such cases it may not be possible to medicate the child because ongoing neurologic assessment is needed. Selbst and Henretig (1989) also suggest that emergency physicians may focus on the more life-threatening aspects of care before managing pain. However, more frequently emergency

room staff are likely to be providing treatment for children who have fractures or need suturing, in which case it is appropriate to medicate the child (Read, 1994). Schechter (1989) noted that pain control in emergency rooms had changed little in 20 years and Selbst and Henretig (1989) suggested that for a variety of reasons pain is often inadequately controlled in the Emergency Department. "Many paediatricians and emergency physicians expect babies to cry, so they tolerate this response to pain rather than attempt to control it" (Selbst & Henretig, 1989, p. 965). According to Zeltzer, Jay and Fisher (1989) the management of pain associated with paediatric procedures is not a simple task and a formula approach is not appropriate. The goal of pain management should be to minimise suffering and permit a successful procedure.

Gay (1992) interviewed 50 children and their parents and observed 34 of the children during their treatment for minor injuries in a UK A and E Department. After treatment the children were asked to rate their pain and anxiety levels. The parents were asked to rate their own anxiety and after treatment the nurses were asked to rate the child's pain and anxiety and the level of parental anxiety. "Direct non-participant observation was used to observe the interaction between nurses and children. Checklists, designed to simplify data collection, were based largely on recommendations on how children of different developmental levels might best be helped during and before treatment" (Gay, 1992, p.33). The researcher noted what information was given to the child and parents and how the child behaved during treatment.

Results showed a statistically significant ($p > 0.05$)³ correlation between the nurses' and children's pain ratings overall, but not for children aged 2-4 and 12-16. The correlation between children's pain and anxiety levels was high (details were not reported). Gay reported no significant agreement between nurses' and parents' ratings of parental anxiety for any of the age groups and that parental anxiety level were inversely related to the child's age. According to Gay a high correlation between parental and child anxiety and pain supported the suggestion that parental anxiety may be transmitted to their children. When the information given to parents was analysed it was found that 39% received no information in preparation for procedures, and only 15% were told what

³ Further details about the statistical methods used were not provided.

sensations their child might be expected to experience. Whereas 99% of children were given some information regarding the nature of their treatment, mostly the information was of a purely technical nature. The younger the child the less likely the nurse was to give preparatory information, but where it was given it was more likely to be of a sensory nature. It was disturbing to note that 2 children due to undergo painful procedures were led to believe that it would not hurt, and suturing was begun on one three-year-old girl while she was still asleep. Of the 8 children requiring suturing only two received a local anaesthetic and the decision to do so was a medical one. Physical restraint was used on 8 children ranging in age from two to eight, and according to Gay, often seemed overzealous and appeared to contribute to the child's distress. The nurses tended to underestimate the pain associated with routine treatments especially in the youngest and older age groups. According to Gay this suggested that nurses based their pain assessment on distress behaviours, which could be expected to be less obvious in the older child. She also noted that although the nurses generally seemed to appreciate the level of distress caused by injury and treatment procedures, few implemented distress-reducing strategies.

Gay concluded that children often suffer unnecessary pain and anxiety in A&E departments, yet nurses could do much to minimise their distress. Education of A&E staff was needed to emphasise that the nature of injury and treatment are not the only variables causing distress in children in this area. Taking the time to provide preparatory information presented in such a way that it was understood and allowing time for questions was essential for alleviating the child's and the parent's anxiety. Such preparation was likely to make the child more cooperative and would in the long run, save time.

Read (1994) surveyed a convenience sample of US emergency room nurses ($n=24$) and physicians ($n = 21$) from two settings (a private 200 bed paediatric hospital and a 1,000 bed community hospital) regarding their pain management of paediatric emergency room patients. Information about pain assessment, knowledge of analgesics, and perceptions regarding pain management was collected. Three vignettes, each addressing a child of a different age group in a painful situation, followed by specific questions and the child's response to interventions were used to elicit information about type of

medication, dosage, route of administration and other pain management interventions from the doctors and nurses. Likert scales with close-ended questions were used to assess how the participant felt about pain management, perceptions of children's pain experience, and the effect of age and cooperativeness in paediatric emergency room patients. Content validity and test-retest reliability for the questionnaire was established. Forty-five questionnaires were returned representing 34 % of the available registered nurse population and 52% of the physicians in the settings used. Most (67%) of the nurses who responded were from the community hospital, whereas the physicians were evenly distributed between both hospitals. Although both the nurses and the physicians agreed that it was an uncomfortable experience to see children undergoing painful procedures without medication, in practice they each saw 5-6 children per day who were not medicated for acute pain. They also indicated similar perceptions of children's pain. However, their pain management practices as reflected in their responses to the vignettes, showed several differences. Physicians were more likely to choose the IV route whereas nurses were more likely to choose the IM route. The nurses were more likely to wait and wait longer before remedicating the child. Several physicians rated the child's pain as excruciating but chose oral Tylenol (paracetamol) with codeine for pain management even though the child in the vignette had IV access. Read was also concerned that many nurses indicated that they considered it inappropriate to medicate infants experiencing pain.

Assessment and management of adult and children's burn pain during debridement has also been investigated. Perry and Heidrich (1982) sent 4 questionnaire surveys to each US burn centre and 181 staff members from all 93 units responded (62% response rate). About one third (66) of respondents were attending physicians, and about one third (67) head nurse or nurse clinicians. The remainder consisted of staff nurses (28), house staff physicians (11), physical therapists (6), anaesthesiologists (2) and one occupational therapist. The average respondent was very experienced and had worked with burn patients for over 6 years. The tanking procedure for debridement was performed in 89 (96%) of the units surveyed. The other 4 units instead of tanking used early wide excision or some other method.

All the staff believed the pain associated with tanking would be moderate not excruciating and physicians and nurses tended to rate patients' pain the same. Staff who had worked there less than five years gave significantly higher pain ratings. For adult patients most staff preferred to use an opioid, such as morphine or meperidine, but the dosages varied widely without a corresponding variation in assessed pain. The type of analgesia used and the route of administration (IV, IM, P.O. or gas) also did not vary with the assessed level of pain. Psychotropic drugs were used by about one-half (52%) of the respondents for adult debridement mostly in conjunction with an opioid. Of concern, were the notable differences between the treatment of pain in children and adults. In particular, the researchers were very concerned that some (17%) of the centres did not use any anaesthesia or analgesia for children undergoing burn debridement. The staff were also less likely to use psychotropic drugs (24% vs. 52%) in conjunction with opioids in children. Nevertheless, staff said they believed that both children and adults experience similar pain from burn injuries. The authors concluded that current analgesic practices for burn debridement needed to be reviewed and that pain and pain relief needed to be documented.

Almost a decade later Atchison, Osgood, Carr and Szelbein (1991) conducted a prospective study to investigate the level of pain that acutely burned children experience during painful procedures, such as burns dressing change (BDC) as well as in the absence of direct stimuli, its relationship to burn area and depth and evaluated the effectiveness of the various analgesic regimens prescribed. Forty-eight patients (38 male, 10 female) between the ages of 7 and 17 (mean $13.6 \pm \text{S.D. } 2.48$) admitted to an acute burn unit over a 5-year period participated in the study. The extent of body surface area (BSA) burned ranged from 4 to 93% (mean 35.2 ± 27.6) and the length of hospital stay was between 6 to 319 days (mean $52.3 \pm \text{S.D. } 56.5$). A thermometer-like 10-point numerical rating scale was used to assess the child's subjective response to pain. The child was asked to give pain scores prior to BDC, at 1-minute intervals during the procedure and after BDC. A mean pain score was obtained by averaging only those scores given during the procedure. If patients were given extended rest periods during BDC these scores were omitted so that mean pain scores more accurately reflected the pain associated with the procedure. All patients were offered an analgesic prior to BDC but 2 patients requested no analgesic in 3 instances. The number of BDC procedures

observed varied in a given patient so a mean of all mean pain scores for each patient was obtained. These scores were then compared to percentage of BSA burned and degree of burn, as well as to the analgesic and dose.

Results showed that the mean for all pain scores taken before and after BDC were substantially lower than those taken during the procedure. A significant relationship was found between pain scores obtained during BDC and the percent of BSA burn - pain increased with the size of the burn. A similar association was found between depth (i.e. degree) of burn and mean pain score - as the percent of 3rd degree burns increased so too did the mean pain scores. The most frequently (67%) prescribed analgesic for pain relief during BDC was Percocet, an oral opioid preparation recommended for mild to moderate pain. Other drugs prescribed included codeine, morphine, meperidine, butorphanol and Fentanyl (the latter given via continuous infusion). Most BDCs were done using oral analgesics (88 or 77%), fewer (20 or 17%) by IV route and least (7 or 6.0%) by IM route. Three BDCs were done with no medication.

The researchers were concerned that the analgesics prescribed were relatively uniform (a 'one size fits all' prescribing pattern) despite variations in patient weight, burn size and number of days post burn injury. Moreover, the data showed that burned children were likely to experience severe, not mild to moderate, pain associated with BDC. No account seemed to have been taken for the tolerance to opioids that naturally develops when patients receive opioids for an extended period of time, either. A complicating factor is the altered drug pharmacokinetics after burn injury, which may explain why patients continue to experience severe pain despite medication with opioid analgesics. Consequently, Atchison et al (1991) recommended that analgesic prescribing and administration patterns for burn patients needed to be revised to take account of this and other findings that, contrary to a widely held belief, third degree burns are painful and the larger the area of full-thickness injury the greater the pain. Opioids needed to be the mainstay of treatment and higher doses needed to be prescribed and administered. "Adequate management of pain continues to be a challenge for those who care for burn victims" (Atchison et al. 1991, p. 44).

Proposed Reasons for Ineffective Pain Management

Researchers and other writers have proposed a number of reasons for ineffective pain management by nurses including: beliefs and misconceptions (eg. Eland, 1974, 1977; McCaffery & Beebe, 1994; Margolius, Hudson, & Michel, 1995); inadequate pain assessment skills (e.g. Price, 1992; McCaffery & Ferrell, 1994); poor decision-making. (e.g. Powers, 1987; Lloyd & McLauchlin, 1994); situational barriers (Ferrell et al., 1991; Wallace, Reed, Pasero & Olsson, 1995); and inadequate knowledge (McCaffery & Ferrell, 1994).

Beliefs and misconceptions

A number of researchers have shown that pain management is strongly influenced by practitioner beliefs and sometimes these are mistaken (eg. Eland, 1974; Burokas, 1985). Eland (1974) first reported that nurses' justifications for under-medicating showed that misconceptions about children's ability to perceive pain and use of opioid analgesics in children prevailed. The nurses in her study claimed that: children have immature nervous systems and so do not experience pain as intensely as adults; children recover quickly and do not need analgesia; it is unsafe to administer narcotics to children because they may become addicted; children cannot tell you where they hurt; and the nurse that gives a child an injection gets negative feedback from the child.

Ten years later Burokas (1985) showed that nurse beliefs still influenced their decisions about medicating children after surgery. Burokas concluded that patients may suffer unnecessarily because of nurses mistaken beliefs that objective pain assessments are not necessary, that medication can lead to addiction, that children are less sensitive to pain and therefore need less analgesia and that non-pharmacologic strategies are ineffective. For a recent discussion and correction of these misconceptions see McCaffery and Beebe (1994).

Other writers have also claimed that misconceptions about children's pain have contributed to its poor management. Although adults sometimes experience difficulty having their pain believed, Fordham and Dunn (1994) suggest that children in pain are doubted more often, and to a greater degree than adults. They go on to suggest that children with pain are not only subjected to the many misconceptions that exist about

pain in adults, but also encounter misconceptions specific to themselves as children. Pain in preverbal children is especially likely to be questioned and is also the most difficult to assess. Even when children are verbally fluent adults still sometimes behave as if children are less credible, or less accurate when they report pain.

In a later US survey Margolius, Hudson and Michel (1995) attempted to examine beliefs about pain in children and perceptions about the adequacy of pain management among all (335) nurses working in a paediatric setting in a large teaching hospital. Perceptions were defined as “individual viewpoints or impressions about how children in pain are managed” (Margolius, Hudson & Michel, 1994, p. 112) by nurses. The researchers developed a survey instrument and established construct validity using an expert panel. The response rate was 68%; 222 nurses voluntarily participated. The sample consisted of 183 RNs (82%), 24 LPNs (11%), and 15 PCAs (7%) of which approximately half of the RNs were bachelors prepared and less than 11% were masters prepared.

The findings indicated that masters prepared nurses demonstrated the greatest insight regarding pain management for children but unfortunately because of managerial responsibilities were less likely to be involved in direct patient care. “Conversely, those who provided the most direct care (i.e. those with the least nursing education) were found to hold the most misconceptions about effective pain management for children” (Margolius, Hudson & Michel, 1994, p. 114-115). The authors reported that the latter group of health care providers were also found to be the least likely to question the effectiveness of existing pain management practices. “It would appear that those best prepared educationally to manage pain may be too far from the bedside, or concerned with other competing priorities, thus limiting their ability to influence the nursing care provided by those under their supervision” (Margolius, Hudson & Michel, 1994, p. 115). Other significant findings were that the overwhelming majority (95%) of respondents expressed interest in learning more about assessment and management of pain in children. In addition, almost one quarter (51) of participants identified issues that they perceived hindered effective pain management including: the need for educating physicians about effective pain management, the need for more information about pain management in the neonatal/infant population, the need for more collaboration between nurses and physicians when managing pain in children and a definite need for more

support for nurses to influence pain management. The researchers recommended among other things that clinical protocols be developed to guide effective pain management in children and that educational programs about pain management be provided.

Inadequate Pain Assessment Skill

Numerous writers have suggested that one of the primary causes of under treatment of children's pain may be difficulty associated with accurately assessing the intensity of children's pain experiences (eg. Eland, 1974 & 1977; Bradshaw & Zeanah, 1986; Beyer & Wells, 1989; McCaffery & Beebe, 1994). The assessment of paediatric pain poses particular challenges because children's response to pain and coping strategies varies with age and development and preverbal children cannot tell you they are in pain. In such cases nurses must observe the child for physiological signs and behaviour such as crying or groaning or ask the parent whether they believe their child is experiencing pain. Valid and reliable pain assessment tools for use with children aged three or older were not developed until the 1980s (eg. Wong & Baker Faces Scale). Eland's studies (1974, 1977) first indicated that nurses' assessment of children's pain might be inadequate as it appeared to be based on an inadequate knowledge base and/or myths. Later studies (eg. Bradshaw & Zeanah, 1986; Price, 1992; McCaffery & Ferrell, 1994) have specifically investigated nurses' pain assessment skills.

The earliest study of paediatric nurses' pain assessment skill appears to have been conducted by Bradshaw and Zeanah (1986). The researchers recruited 99-paediatric nurses from two university-affiliated hospitals for voluntary participation in a study of pain assessment. Forty-one of the nurses worked at a children's hospital for patients with predominantly chronic conditions (eg. cancer, cystic fibrosis, juvenile rheumatoid arthritis, orthopaedic), another forty-one worked on a paediatric unit in a university medical centre that comprised mainly acute care and tertiary centre referrals. Of this second group of forty-one nurses 25 worked in a neonatal intensive care unit and 16 in the acute paediatric service. The remaining 17 nurses worked in a university paediatric outpatient department. A questionnaire was used to elicit data related to the assessment and management of children's pain. It contained 4 open-ended questions: "What criteria do you use to determine when a child is in pain? What criteria do you use in deciding

when to give pain medication? Do you have concerns about giving pain medication to children? If so, please explain. Have you been in a situation where you thought a child was inappropriately medicated for pain? If so what did you do?" (Bradshaw & Zeanah, 1986, p. 317).

Results showed that most (63%) nurses used body language and oral expression, followed closely by physiological indicators and affect (60% of nurses) as criteria for assessing pain in a child. All nurses used more than one criteria but none differentiated between symptoms of acute and chronic pain and only three listed differing symptoms of acute pain as displayed by infants and older children. The most experienced nurses used a broader range of criteria than the least experienced. "The data indicated that nursing histories and care plans were used infrequently" (Bradshaw and Zeanah, 1986, p. 319). Only two nurses used knowledge of the child as part of their pain assessment criteria, despite the fact that many (40) of the nurses provided care for children with chronic painful conditions who were repeatedly hospitalised. Some of the nurses used alternative techniques to relieve pain including repositioning, rocking, massage, talking to the child, and distraction. Response to these relief measures was only used by 28% of the nurses in their assessments. Parents' assessment was considered a useful indicator by only 17% of the nurses who ranked it last out of a total of nine criteria. The researchers noted that the nurses in their study did not use any of the available paediatric pain assessment tools (Beyer Oucher, Hester Poker Chip, Eland's Colour Assessment Tool).

Bradshaw and Zeanah concluded that the paediatric nurses consistently used reliable criteria for assessing children's pain. There were few differences in how the nurses assessed pain based on either years of experience or type of paediatric practice setting. Of concern to the researchers was the fact that there was essentially no discrimination made between assessments of patients with acute pain and those with chronic pain, despite the fact that research clearly indicates that acute pain criteria cannot be used to assess chronic pain (Melzack & Wall, 1983). They recommended improved education about pain, its assessment and management for undergraduate nursing students, which needed to be combined with sufficient paediatric clinical practice. Practicing nurses, they believed, needed to develop research knowledge and skills so that they could

decide “what is speculative and what is useable in clinical settings” (Bradshaw & Zeanah, 1986, p. 321) and assistance with applying findings.

The use of an open-ended survey may have elicited responses, which reflected the nurses’ own practice but this is not certain. The answers may simply have reflected what the nurses’ thought was acceptable responses and what they could think of at the time. The response rate was low (less than a third of possible respondents) which may have meant that only those nurses interested in pain assessment returned the questionnaire. The low response rate also meant that nothing is known about the assessment skills of most of the paediatric nurses at the two hospitals used in this study. The size of each subgroup of nurses was also quite small and some of the nurses worked in more than one setting, which affects the generalisability of the results.

Price (1992) investigated student nurses’ assessment of children in pain to determine what criteria they used. The sample consisted of 17-second year nursing students who had just completed their paediatric clinical placement. They were asked to complete a questionnaire in which they were asked to provide their own definition of pain, rate the pain of four hypothetical children, giving reasons for their ratings and provide data about their assessment of a child they had cared for.

It was found that their definitions of pain focused mainly on the physical effects of pain, and that they used physiological signs inappropriately at times when physiological adaptation could be expected to have taken place. None of the students’ responses indicated that they had actively involved the parents in the assessment of their child’s pain although it appeared they did respond to parental requests for pain relief for their children. Price suggested that some of the words used by the students to describe the children’s oral expressions, such as a 3 year-old child who had undergone renal surgery who was described as ‘whingeing and whining’, sounded rather judgmental. Another concern was that neither the students nor the staff they worked with used any pain assessment tools.

Price expressed concern that the results indicated that the students were not transferring knowledge from other clinical experience to paediatrics. But I would suggest that

educators only expect beginning knowledge integration in second year and that this is usually completed in third year as students' progress from novice to advanced beginner (Benner, 1984). Different results may have been obtained from more senior students. Novices also need assistance with integration from experienced nurses (Benner, 1984).

Hamers, Abu-Saad, Halfens and Schumacher (1994) reported on two studies, which had investigated factors influencing nurses' pain assessment and interventions in children both of which used a grounded theory approach. The first study involved a convenience sample of 10 nurses working in both a general and a university hospital in the Netherlands. Their experience in nursing ranged from 1 to 14 years; experience in paediatrics from several months to 11 years. Data were collected using semi-structured interviews, observation of participants and examination of nursing records. The second study replicated the first, involved a convenience sample of 10 nurses who worked in a paediatric ward in either a general or university hospital. However, the second group was more experienced in both nursing (5-33 years) and paediatrics (2-28 years).

The first study identified a variety of factors that influenced both nurses' assessment of pain and the implementation of pain relieving interventions. These included medical diagnosis, characteristics of the child (pain expression and age), the child's parents and characteristics of the nurse (knowledge, experience and attitudes). The nurses seemed to attach a great deal of importance to the medical diagnosis. The presence of a medical diagnosis seemed to justify being in pain and the more severe the medical diagnosis the more pain the patient was expected to experience. The nurses were more inclined to administer an analgesic with a severe diagnosis than a mild one. Although children may express pain in a variety of ways crying seemed to be considered the most reliable evidence. The nurses agreed that children can and do report pain verbally but expressed doubts about how reliable these self-reports were. A child who was shouting or crying was more likely to receive prompt pain medication than one who was quieter. The nurses believed that the child's age influenced their decisions but did not agree about the nature of this influence. Some thought adults experience more pain than children with the same diagnosis do but most thought the opposite was true. Age also seemed to influence the administration of pain medication but again there was no agreement about the direction of this. Several nurses' thought that adults received pain medication sooner

than children did but one thought younger children were medicated more promptly than older children. Parents know their child better than anyone else and may tell the nurse that their child is in pain. The nurses then took steps to check this to determine whether an analgesic was needed. Some nurses thought that some parents exaggerated their child's pain experience. Nurses' knowledge and experience with similar cases and pain relieving interventions also influenced their decisions. The nurses used their past experience to determine what to do in present or future situations. It seemed quite likely that the nurses' attitudes influenced their decision to administer pain relief to children, because they appeared to have quite negative feelings about pain medication. Their statements implied that they postpone administering analgesics as long as possible. For example one nurse said, 'In my opinion it is not necessary to start with an analgesic right away. In fact, as far as that's concerned, I would say, wait until the last possible moment.' (Hamers, Abu-Saad, Halfens & Schumacher, 1994, p. 857). Their reasons for doing so included "because medicine is harmful"; 'because it is a poison'; because medicine has side effects'; 'because medicine suppresses other symptoms'; 'because you are afraid something is going to go wrong'" (Hamers, Abu-Saad, Halfens & Schumacher, 1994, p. 857). Finally, some thought that pain could never be completely relieved and is related to hospital admission. 'In fact, some pain is allowed, for they are, after all, in hospital.' (Hamers, Abu-Saad, Halfens & Schumacher, 1994, p. 857).

The second study reported similar findings. The impact of the medical diagnosis on assessment and pain relieving interventions was supported, as were the child's pain expression, nurses' knowledge, experience and attitudes. Some differences were also noted; the second study found that older children were more likely to receive earlier pain medication than younger children and that in the case of younger children other interventions, such as distraction, would be tried first. Although parents were mentioned as an important source of information the nurses in the second study did not mention checking the reliability of this. Finally, the nurses in the second study mentioned that workload had an effect on their assessment and administration of analgesics. If they were too busy they might just dish out analgesics, the implication being that they did not carry out either a complete assessment or any assessment and had no time for other types of interventions:

*'It depends on how much time you have available.
When you are caring for 13 children all by yourself, or with another colleague, then you do not have enough time to sit down with each child.
When it is very busy, and you are caring for 12 children all by yourself, then you naturally just give a paracetamol'* (Hamers, Abu-Saad, Halfens & Schumacher, 1994, p. 857).

The authors concluded that decision-making processes related to pain assessment and interventions in children are complicated. Their recommendations included further education for nurses at all levels and that myths regarding pain assessment and management in children needed to be dispelled. In addition, the subjective nature of the experience and developmental influences on pain perception, pain tolerance and pain expression in children needed greater emphasis in nursing curricula. Finally, practicing paediatric nurses needed refresher courses to update their knowledge.

Poor decision-making

Sometimes the reason for ineffective pain management appeared to relate to poor decision-making following assessment of pain. In a Canadian study Powers (1987) investigated whether there was a disparity between children's and nurse's ratings of the intensity of postoperative pain, which might account for the occurrence of unrelieved postoperative pain. A convenience sample of 50 children aged 6-16 years were asked to rate the intensity of their pain using a visual analogue scale, at three different intervals on the day following either orthopaedic, urologic or general surgery. A questionnaire was administered to 33 nurses which asked them to list the factors they considered when assessing a child for pain as well as the factors considered when deciding whether to give a child a PRN analgesic medication. Twenty-eight nurses (85% response rate) returned the questionnaire. Although Chi-square analysis showed no significant difference between nurses and children's pain ratings, all of the children reported experiencing some degree of pain postoperatively and for just over half (58%) the reported pain was of moderate to severe intensity. The fact that a significant proportion of the children experienced significant unrelieved pain suggested that the nurses did not administer enough analgesia, either by dose or frequency. The researcher said that the explanation for this was unclear and suggested that although the nurses knew the children were experiencing pain it appeared that they might not have acted effectively on their assessments. Powers recommended careful nursing assessment and adequate

analgesia for children experiencing pain and noted that nurses have an explicit responsibility to make pain relief part of their care. However, I think it should be noted that the majority (86%) of the nurses in this study had less than 12 months experience working in paediatrics, and that most reported that they considered the time since the last analgesic dose as the most important factor when deciding whether to give a child an analgesic or not. It, therefore, appears that these nurses did not consider the adequacy of the dose amount or analgesic. The appropriateness, time intervals between analgesics and the nurses' interpretation of PRN analgesic orders were also not investigated. Other variables may have influenced both nurses and children's ratings, such as the non-probability sampling technique used. Random (probability) sampling produces a more accurate and representative sample.

Lloyd and McLauchlan (1994), in their Scottish study of hospital employed nurses' attitudes towards pain assessment and management, also found that the administration of analgesia often bore no relation to the recorded pain assessment. Other findings which were of concern were that: 25% of the nurses (*n* 269) thought patients should have minimal analgesia; 28% of the day and 44% of the night nurses expected their patients to suffer pain; and 79% felt they underestimated pain. Fear of addiction was evident amongst less senior nurses; and, fear of patients developing respiratory problems was more evident amongst night nurses (22%) than day nurses (16%). Almost all the nurses (98%) agreed that they needed further education on the management of pain.

Situational barriers

Researchers who have investigated the factors that influence the decisions nurses made about pain management have found that sometimes there are barriers to effective pain management. For example, a preliminary survey by Ferrell, Eberts, McCaffery and Grant (1991), involving a convenience sample of nurses (*n* = 53) identified that barriers to effective pain management included lack of knowledge in doctors, patients, families and nurses; lack of cooperation on the part of both patients (in taking medications) and doctors; inadequate prescribing; and, lack of nursing time. As in other recent surveys of nursing knowledge, some nurses expressed concerns about patient's risk of addiction. The authors reported that an unexpected finding was that 20% of the nurses were

sometimes concerned about whether the pain was 'real' and, if the nurse thought it was not, then they believed that pain relief was not indicated.

Wallace, Reed, Pasero and Olsson (1995) used a stratified random sample of nurses from general hospitals in 4 US states ($n=108$) to survey their perceptions of barriers to effective pain management including lack of educational preparation; inadequacy of clinical practice skills; and certain legal/political, financial, and ethical problems. In the questionnaire nurses were asked to rate the adequacy of their knowledge and skills in each of these areas as well as how important they believed each area was, using a four-point Likert scale. They were also asked to list the most important pain management problems in their institutions. The results showed that overall the nurses rated their pain management skills as adequate. However, the authors pointed out that this perception belies other research, which showed that nurses' assessment of pain intensity in patients was inaccurate. The nurses rated their educational preparation midway between inadequate and adequate, with the more experienced nurses indicating that they were significantly less adequately prepared to manage pain than more recent graduates do. The more recent graduates rated their textbooks as having significantly more adequate information than the nurses with 10-20 or over 21 years of experience. However, the researchers were concerned that the more recent graduates might have learned inaccurate facts, given Ferrell, McCaffery and Rhiner's (1992) finding of considerable inaccuracy in nursing texts concerning addiction.

Inadequate knowledge

Although the nurses in Wallace et al's (1995) study considered themselves adequately prepared, research on other nursing populations have found this was not the case. For example, McCaffery & Ferrell (1994) surveyed 517 Australian nurses most of whom had attended one-day workshops on pain. Two different vignettes were used to investigate nurses' knowledge of pain assessment intensity and use of an opioid analgesic. The researchers found that about half did not know that nursing assessment of pain consisted of asking the patient to rate their pain on a pain rating scale rather than the nurse's personal opinion about the meaning of the patient's behaviour. Differences in non-verbal behaviour influenced the nurses' pain assessments so that they rated the pain lower than the patient in the vignette. McCaffery and Ferrell concluded that

Australian nurses had the same educational needs as nurses in North America, including how to assess pain intensity and how to select a dose of an opioid analgesic that is appropriate for the individual patient. Earlier studies conducted by McCaffery and Ferrell since 1988 with over 4000 practicing nurses throughout the United States and Canada had confirmed that many of the nurses lacked knowledge about pain assessment and relief.

Conclusion

This literature review identified a range of problems associated with the assessment and management of children's pain in various western countries over the last 30 years. In general it was shown that misconceptions about addiction persist, that nurses' perceptions of their own practice was inconsistent with research findings and that lack of education and concerns about both over-medicating and under-medicating also persist.

Most of the studies reviewed were conducted in large university/ teaching hospitals where you would expect staff to have access to research, library resources, current guidelines for clinical practice and educational opportunities for updating their knowledge. A few studies compared rural and urban hospitals or were conducted in smaller community hospitals. These studies showed more conservative prescribing and administration practices, misconceptions were more likely and that staff were concerned about lack of access to research and education in pain management. The most recent studies showed that although there had been considerable improvement there remained some unresolved problems, such as lack of education in children's pain management, low utilisation of research and available assessment tools. Concern was also expressed that nurses may have failed to intervene on behalf of children to ensure they received adequate pain relief when it was under-prescribed, or not prescribed at all. However, the limitations of the studies meant that it is not known whether these nurses had tried to intervene. Ferrell, Eberts, McCaffery and Grant's (1991) finding that lack of cooperation from doctors was a barrier to effective pain management might in fact mean that nurses' efforts to intervene are sometimes thwarted. There may also be other situational constraints to nursing practice. What is not clear is why nurses, as recently

as Altimier et al's (1994) study, still tended to under medicate, or not medicate even when there was a prescription for analgesia.

Many of these studies had methodological limitations including use of: small, non-random samples; single settings; reliance on self-reports; and single method approaches such as retrospective chart audits. Those studies, which used a prospective design and collected a broader range of data, were able to present a more comprehensive (but still incomplete) view of the issues involved. However, only 2 published studies (Dick, 1993; Hamers, Abu-Saad, Halfens & Schumacher, 1994) were found using the CINAHL database, which had used a qualitative approach.

Good pain management must begin with the belief that infants and children are capable of experiencing pain and an attitude of compassion. It also requires that nurses have current knowledge of pain, its assessment and management in children. So, despite considerable advances in the clinical management of pain in children, the publication of specialist books (e.g. McGrath, 1990; McGrath & Unruh, 1988) multidisciplinary journals devoted to this topic (Pain; Journal of Pain & Symptom Management), nursing journals with regular features on pain management (e.g. Paediatric Nursing), the advent of international conferences on pain, and the publication of research based guidelines for the management of pain in children (Hester, Jacox, Miaskowski & Ferrell, 1989), further improvement in nurses' assessment and/or management of children's pain is needed.

In conclusion, further research is needed in order to address these continuing problems with assessing and managing children for pain. Children need not, and should not, be denied adequate analgesia. To date no study of how New Zealand nurses' deal with children's' acute pain appears to have been conducted; there is only anecdotal evidence that similar problems occur here. We need to discover how New Zealand nurses' assess and deal with children experiencing pain, what concerns they have, if any, and what problems they encounter, if any, when caring for children experiencing pain. Only then we will be in a position to plan appropriate undergraduate and postgraduate educational programs and courses and implement best practice in children's pain management in New Zealand clinical settings.

CHAPTER 2

The Research Approach

Introduction

The purpose of this chapter is to provide an overview of the origins, purposes, method, and uses of grounded theory. Glaser and Strauss' (1967) method for discovering and generating theory will be described and some of the ways in which it differs from other research approaches will be highlighted.

The research process used in this study will then be described, including the area of concern, the research question, aims and purpose, access and entrée to the setting, participant, and sources of data. Techniques used for data analysis and concept development will be described in later chapters. Ethical considerations and how these were satisfied for the Ethics Committees, who had to approve this study, will also be described and discussed. Quality issues in qualitative research are presented, and procedures for enhancing quality in this study described. Finally, issues and problems associated with the nurse as researcher are discussed.

This chapter is organised into five major sections: the research method; the research process; ethical considerations; quality in qualitative research; and the nurse as researcher.

The research method

Grounded theory is a method for discovering theory from data systematically obtained from social research (Glaser & Strauss, 1967). Theory emerges and evolves during actual research, and this is achieved through the researcher's efforts to continuously create interplay between analysis and data collection. This interplay is a central strategy of grounded theory and involves "a general method of [constant] comparative analysis" (Glaser & Strauss, 1967, p.1). The constant comparative method and associated strategies will be described in more detail and discussed in the chapter on data analysis. The researcher's insights about what is going on in the substantive area also contributes to

theory development when they are transformed into “relevant categories, properties and hypotheses” (Glaser & Strauss, 1967, p. 254). However, to do this the researcher must go beyond the public discussion about the given area (Glaser & Strauss, 1967).

Origins of grounded theory method

Barney Glaser and Anselm Strauss, two sociologists, together developed grounded theory method in the 1960s during their study of dying patients in hospital. Following this they wrote The Discovery of Grounded Theory (1967) in which they described the strategies they had developed for discovering theory from data systematically obtained from social research. In particular, they described their use of a general method of comparative analysis. Since then the *techniques and thought involved in grounded theory have been advanced and elaborated* (Glaser 1978, p. 1) and further books and monographs have been published such as Theoretical Sensitivity (Glaser, 1978) and Basics of Grounded Theory Analysis (Glaser, 1992) which update the original publication and clarify the emerging method.

However, Glaser and Strauss have disagreed about the proposed directions for grounded theory as described in Strauss and Corbin’s book The Basics of Qualitative Research (1990). The classic approach first described by Glaser and Strauss (1967) and Glaser’s (1978; 1992) later developments were adopted for this study. I was fortunate to be able to attend training seminars with Barney Glaser at the University of Canterbury when he came to New Zealand in 1996 and to have a supervisor who was very experienced with the original method.

According to Glaser (1992) the methodology developed by Glaser and Strauss reflected both their educational backgrounds in research and analysis. Strauss completed his PhD at the University of Chicago, which had a long history and strong tradition in qualitative research and analysis. While a student there Robert Park, W.I. Thomas, John Dewey, George Herbert Mead, Everett Hughes and Herbert Blumer influenced his thinking. According to Glaser (1992) what this background contributed to grounded theory method was, among other things:

The need to get out in the field, if one wants to understand what is going on; the importance of theory [that is] grounded in reality; [the evolving nature of experience in the field for subjects and researcher]; the active role of persons in shaping the worlds they live in through processes of symbolic interaction; an emphasis on change and processes and the variability of and complexity of life; and, the interrelationship between meaning in the perception of the subjects and their action. Strauss' research experience had stimulated his thought on the interplay of data collection, coding and analysis (Glaser, 1992, p. 16).

On the other hand, Glaser received his PhD training at Columbia University in the late 1950s and came from a quantitative research tradition. "He was strongly influenced by the methodology (and how it is generated) of Paul F. Lazarfield [and Lazarfield's colleagues] ... on the theory generation side of his training he was strongly influenced by Robert K. Merton, Hans Zetterberg, Seymour Lipset and Alvin Gouldner all of whom were doing inductive theory generation from quantitative and qualitative research" (Glaser, 1992, p. 16-17).

Thus, both shared a desire to be faithful to the data, to obtain data in the field (natural settings), and generate theory that respected and revealed the perspective's of the subjects in the substantive area under study (Glaser, 1992). However, they also sought to transcend these perspectives through theoretical interpretation, that is, they sought to understand and give meaning to the actions and interactions of those studied. According to Strauss and Corbin (1994) those who use grounded theory procedures share with many other qualitative researchers a distinctive position; they accept responsibility for their interpretive roles. "They do not believe it sufficient to merely report or give voice to the viewpoint of the people, groups, or organisations studied. Grounded theory researchers assume the further responsibility of interpreting what is observed, heard, or read (Strauss & Corbin, 1994, p. 274). The outcome of this interpretation is a theory explaining the phenomenon studied. That is, the grounded theory study aims "to produce abstract concepts and propositions about the relationships between them" (Chenitz & Swanson, 1986, p. 8). This emphasis upon theory development is the major and radical difference between this methodology and other approaches to qualitative research (eg. Burns & Grove, 1993; Chenitz & Swanson, 1986; Field & Morse, 1985; Glaser & Strauss, 1967; Glaser, 1978; Glaser, 1992; Strauss &

Corbin, 1994). According to Glaser and Strauss (1967) and others (e.g. Burns & Grove, 1993; Chenitz & Swanson, 1986), researchers can aim at various levels of theory development using grounded theory procedures. However, most grounded theory studies have been directed at developing substantive theory.

This is because of the overwhelming substantive interests of grounded theory researchers rather than the methodology.... Higher-level 'general' theory is also possible, but when grounded this differs from more deductive types of general theory because of its generation and development through interplay with data collected in actual research (for an example see Glaser & Strauss, 1970). Regardless of the level of theory, there is built into this style of extensive interrelated data collection and theoretical analysis an explicit mandate to strive toward verification of its resulting hypotheses (statements of relationships between concepts). This is done throughout the course of a research project, rather than assuming that verification is possible only through follow-up quantitative research (Strauss & Corbin, 1994, p. 274).

Glaser and Strauss' coding procedures- including *constant comparison*, *theoretical questioning*, and *theoretical sampling*- contribute to this form of verification (refer Glaser & Strauss, 1967; Glaser, 1978; Glaser, 1992). *They also help to protect the researcher from accepting any [of the participants] voices on their own terms, and to some extent [the coding procedures] force the researcher's own voice to be questioning, questioned, and provisional (Strauss & Corbin, 1994, p. 280).*

Enhanced also by its procedures is the possibility of developing theory of great conceptual density and with considerable meaningful variation. Conceptual density refers to richness of concept development and relationships - which rest on great familiarity with associated data and are checked out systematically with these data. This is different from Geertz's 'thick descriptions,' where the emphasis is on description rather than conceptualisation (Strauss & Corbin, 1994, p. 274).

Philosophical orientation

Grounded theory has its philosophical basis in symbolic interaction theory. Symbolic interactionism is both a theory of human behaviour and an approach to the study of individual and group behaviour. The meaning of events to people in natural everyday settings is the focus of symbolic interactionism, and in this sense it is similar to

phenomenology. “Both phenomenology and symbolic interaction are concerned with the study of the inner or ‘experiential’ aspects of human behaviour, that is, how people define events or reality and how they act in relation to their beliefs” (Chenitz & Swanson, 1986, p. 4). According to symbolic interaction theory the meaning of objects, events, or people is not intrinsic but is created by experience; that is, the person interacts with the object and defines it. Once defined, the person attaches meaning to the object and gives it a value. Thus, planned action or behaviour towards an object is based on the meaning and value it has for the individual (Chenitz & Swanson, 1986). Thus, all human behaviour is the result of a *vast interpretive process in which people; singly and collectively guide themselves by defining the objects, events and situation they encounter* (Blumer, 1969, p132). In social life, individuals must align their behaviour with others and with groups and this is achieved through communication of shared meanings. *These shared meanings are communicated to new group members through socialisation processes. [...] Interaction may lead to redefinition and new meanings and can result in the redefinition of self* (Burns & Grove, 1993, p. 68). Thus, experience changes self and hence changes behaviour (Blumer, 1969; Denzin, 1970).

Chenitz and Swanson (1986) suggest that the symbolic interactionist perspective has the following implications for research activity: in order to understand behaviour we must examine human interaction; the context in which this interaction takes place must also be examined for its influence on human interaction; and the full range and variation of behaviour in a particular setting or in relation to a phenomenon must be examined to discover self and group definitions and shared meanings. This is achieved by examining social behaviour in its natural setting, looking for social rules, ideologies, and events that both illustrate these group definitions and shared meanings and affect behaviour in the interaction. They describe this as follows:

The researcher needs to understand behaviour as the participants understand it, learn about their world, learn their interpretation of self in the interaction and share their definitions. In order to accomplish this, the researcher must ‘take the role of the other’ and understand the world from the participant’s perspective. The researcher,

therefore, must be both a participant in the world and an observer of the participants in that world (Chenitz & Swanson, 1986, p. 7).

In addition, the researcher needs to understand behaviour from the participant's perspective and the researcher must then translate the meaning derived from the study into the language of the research discipline (Burns & Grove, 1993). Thus, for symbolic interactionists social interaction has great theoretical significance. Also, the focus of a grounded theory study on the social interaction around a known or emergent problem "allows us to understand behaviour in new and different ways" (Chenitz & Swanson, 1986, p. 7).

Methodological issues in grounded theory

The terminology used in qualitative research and the methods of analysis and reasoning are different from those used in traditional scientific methods and reflect the different philosophical orientations (Burns & Grove, 1993). Indeed, some of the central concepts in quantitative research are quite problematic, even inimical to doing grounded theory. Its focus on discovery and theory generation rather than verification, and its basis in symbolic interactionism, has influenced the kinds of strategies developed by Glaser and Strauss. In particular, reading and use of literature, the research question, data analysis, and study findings are handled quite differently. The emphasis on theory development as the expected outcome of a grounded theory study is another major difference that is acknowledged by many writers (e.g. Burns & Grove, 1993; Chenitz & Swanson, 1986; Glaser & Strauss, 1967; Glaser, 1978; Glaser 1992; Strauss & Corbin, 1994). Finally, Glaser and Strauss propose different criteria for judging the credibility of a grounded theory study.

Reading and using the literature in a grounded theory study

According to LoBiondo-Wood and Haber (1994) traditionally the scholarly literature is critically reviewed to determine the state of knowledge, as well as any gaps, consistencies or inconsistencies in the substantive area of interest. This occurs before the research commences and usually involves a comprehensive review of recent and key literature. It is a means of discovering unanswered questions about a subject, concept or problem. In

addition, the strengths and weaknesses of designs/methods and instruments that have already been used are explored. All of, which enables the researcher to establish the need for further research, generate useful research questions and assists in the selection of an appropriate design/method.

However, reading the literature before commencing a grounded theory study is considered methodologically problematic. Glaser (1978, 1992, 1998) has warned about the risks associated with reading the literature before the theory is generated. His dictum is not to read the literature in the substantive area under study. The aim is to keep “the grounded theory researcher as free and open as possible to discovery and the emergence of concepts, problems and interpretations from the data” (Glaser, 1998, p. 67). He contends that a pre-research literature review would be inimical to generating grounded theory. The concern is that knowledge of the literature would:

Contaminate, be constrained by, inhibit, stifle or otherwise impede the researcher's effort to generate categories, their properties and theoretical codes from the data that truly fit, are relevant and work with received or preconceived concepts that may not really fit, work or be relevant, but appear to do so momentarily. It is hard enough to generate one's own concepts without the added burden of contending with the 'rich' derailments provided by the related literature in the form of conscious or unrecognised assumptions of what ought to be found in the data (Glaser, 1992, p. 31).

This is because the purpose of grounded theory is the discovery of concepts and hypotheses, not the testing or replicating of them. Thus, the grounded theorist must be free from the claims of related literature and its findings and assumptions and free from the idea of working on someone else's problems or concerns.

Institutional requirements

However, researchers cannot always follow Glaser's dictum because they have to provide a literature review in order to satisfy the requirements of institutional research and ethical review committees. Historically such committees have had more experience and knowledge of traditional scientific methods than qualitative approaches or grounded theory. Glaser (1998) suggests that the researcher would have difficulty convincing such committees that

s/he would return to the literature at a later date to integrate it with the emergent theory. He says, "If this is the case, do what the people want" (Glaser, 1998, p. 72).

Using literature during research

This stance, however, only applies to the methodology at the beginning of the research endeavour. Once the theory appears sufficiently grounded in a core variable and in an emerging integration of categories and their properties, then the researcher should begin to review the literature in the substantive and related fields and use it as another source of data for constant comparison (Glaser, 1998). "Such comparisons with one's own work also provide a degree of support for it, as the analyst discovers how [s/he] fits into the literature and where [her/his] contributions lie" (Glaser, 1978, p. 32). Thus, Glaser proposes that scholarship in the same area should start after the emerging theory is sufficiently developed, so that the researcher remains firm in her/his discovery and will not preconceive or try to force concepts. "Indeed the researcher may be hard put to know which substantive field [her/his] theory is in until it has emerged sufficiently" (Glaser, 1992, p. 32). For example, in the beginning I did not know that literature related to *risk taking* would be an important category in a study about how nurses deal with children's pain. The aim is to integrate the emergent categories and/or theory with "other literature to show [the emergent theory's] contribution" (Glaser, 1992, p. 33).

The research question in a grounded theory study

Just as reading the literature before theory development has begun may pre-conceive the study, pre-conceived research questions can be equally problematic in a grounded theory study. According to Glaser (1992) the research question in a grounded theory study cannot be stated in advance. Instead, *the problem emerges and questions regarding the problem emerge [and] guide theoretical sampling* (Glaser, 1992, p. 25). The focus of the research gradually emerges during the actual research through open coding, data collection by theoretical sampling, and analysing by constant comparison. Thus, *there is no need to waste time on the debate as to whether or not the research question should dictate the method or the method the research question* (Glaser, 1992, p. 24). Instead, the researcher begins with

an area of interest in which the problem may not be known or is poorly understood, and the researcher aims to discover: *What is going on that is an issue and how it is handled? Or, what is the core process that continually resolves the main concern of the subjects?* (Glaser, 1992, p. 22).

This contrasts with earlier advice on doing grounded theory by Chenitz and Swanson (1986), which tended to follow traditional views of scientific research when describing how to formulate a problem statement, purpose and specific aims. However, this was in the context of writing a research proposal and Chenitz and Swanson may have been acceding to review board expectations, prevalent at the time, to provide a research question or aim.

Sources of data

An important feature of grounded theory is that it allows, and even encourages, the researcher to collect multiple forms of data related to the field. In social research this is typically via unstructured interviews, and participant observation, but in grounded theory may also include using documents, literature, and media, such as film. This meant, for example, that clinical specialty texts on children's pain management, pharmacology texts as well as drug prescription and administration guidelines could be included as sources of data in this study, as well as in-depth interviews.

Elements of a grounded theory

A grounded theory does not resemble one arrived at by deduction and *a priori* assumptions. According to Burns and Grove (1993) theory consists of an integrated set of defined concepts, existence statements, and relational statements that present a view of a phenomenon. Grounded theory method can be used to generate two types of theory: substantive and formal (Glaser & Strauss, 1967). Substantive theories are developed to explain a particular phenomenon in the real world and their usefulness is recognised by the discipline (Burns & Grove, 1993; Glaser & Strauss, 1967). On the other hand, formal theory is developed for a conceptual area of inquiry (Glaser & Strauss, 1967), for example, *stigma, deviant behaviour, formal organisations, and socialisation* (Glaser & Strauss, 1967,

p. 32). Both types of theory may be considered 'middle-range' and are not all-inclusive 'grand theories' (Glaser & Strauss, 1967, p. 32-33).

Glaser and Strauss (1967) and Strauss and Corbin (1994) further contend that grounded theory methodology is designed to guide researchers in producing theory that is 'conceptually dense' - that is, with many conceptual relationships. *These relationships, stated as propositions, are, as in virtually all other qualitative research, presented in discursive form: They are embedded in a thick context of descriptive and conceptual writing* (Strauss & Corbin, 1994, p. 278).

The elements of a grounded theory consist firstly, of conceptual categories and their conceptual properties; and secondly, hypotheses or generalised relations (propositions) among the categories and their properties (Glaser & Strauss, 1967, p. 35).

Categories and their properties.

According to Glaser and Strauss (1967, p. 36) a category stands alone as a conceptual element of the theory. A property, on the other hand, is a conceptual characteristic or element of a category. Both categories and their properties are indicated by the data (but are not the data itself) and both may vary in conceptual abstraction. Excerpts from the data may be reported to illustrate categories and their properties. Some excerpts may illustrate more than one concept, process, or property of these. Lower level categories tend to emerge relatively early and easily during early phases of data collection. *Higher level, overriding and integrating, conceptualisations - and their properties that elaborate them- tend to come later during the joint collection, coding, and analysis of the data* (Glaser & Strauss, 1967, p.36). Once developed, a category or property persists despite any change in the evidence that indicated it. *It takes much more evidence-usually from different substantive areas- as well as the creation of a better category* (Glaser & Strauss, 1967, p. 36) to bring about change in the original category.

In addition categories may be borrowed from existing theory providing they are thoroughly checked for relevance and are not forced to fit the situation under study. However, Glaser and Strauss (1967) caution that doing so may hinder the development of new categories.

Patterns and core categories

Grounded theory researchers are interested in *patterns of action and interaction* among and between those subjects studied (Strauss & Corbin, 1994). In particular, the researcher consciously looks for a *core category* (sometimes termed a *core variable* in earlier works by Glaser and Strauss, 1967 and Glaser, 1978 & 1992) when coding data. During constant comparison of incidents and concepts the researcher generates many categories but searches for the higher level one or two that are core.

The main concern or problem for the people in the setting, for what sums up in a pattern of behaviour the substance of what is going on in the data, for what is the essence [of how those involved deal with the problem under study], for gerunds which bring out process and change (Glaser, 1978, p. 94)

A more detailed description of how core categories are developed, and criteria for judging them will be provided in the next chapter on data analysis.

Process and core processes

The researcher is also interested in discovering *process* (Glaser, 1978; Strauss & Corbin, 1994)-

Not necessarily in the sense of stages or phases, but of reciprocal changes in patterns of action/interaction and in relationship with changes of conditions either internal or external to the process itself. When stages or phases are distinguished for analytic purposes by the researcher, this signifies a conceptualisation of what occurs under certain conditions: with movement forward, downward, up and down, going one way then another- all depending on analytically specified conditions (Strauss & Corbin, 1994, p. 278).

The notion of a conceptual process in grounded theory is termed a *Basic Social Process* (BSP) (refer Glaser, 1978, Chapter 6) and may be another element of a grounded theory. They are a type of core category, but not all core categories are BSPs. The primary

distinction between the two is that BSPs indicate existence of a process- they have two or more emergent stages- whereas, other core categories do not (Glaser, 1978). The stages *should differentiate and account for variations in the problematic pattern of behaviour* (Glaser, 1978, p. 97). Apart from having stages, the other defining characteristics of BSPs are pervasiveness, full variability, and change over time. BSPs are pervasive in the sense that they are fundamental, patterned processes in the organisation of social behaviour which occur over time and occur irrespective of the place- they occur in a variety of situations and settings. They are variable because not every person goes through a process in the same manner. A BSP theory can uncover those conditions which give rise to particular variation, and can therefore theoretically account for them (Glaser, 1978). Full variability and generality also mean that BSPs transcend a particular setting and work in a range of settings:

Their full variability makes BSPs independent of structural units, that is, free of their time and place and the perspective of their participants and fully generalizable as abstract processes to be found anywhere they may emerge (Glaser, 1978, p. 100, emphasis added).

According to Glaser (1978) there are two types of BSPs: basic social psychological process (BSPP) and basic social structural process (BSSP). A particular theory may emphasise either or a mixture of both depending on which mix emerges as the more relevant.

Hypotheses or propositions.

The second main element of a grounded theory is hypotheses or propositional statements about and among the categories and their properties that explain the general theoretical relationships between these. Glaser and Strauss (1967) emphasise that initially these hypotheses are tentative, not tested, relations among categories and their properties, though they are verified as much as possible during the research.

Integration of the theory

The final stage of grounded theory development involves integration of the core category and process to demonstrate how they work conceptually in the particular substantive area

studied. Glaser and Strauss (1967) emphasise that this integration and development of a formal model or theory should be emergent rather than forced. Further, they propose that the integrating framework should encompass the fullest possible diversity of categories and properties, but remain open-ended. It should remain open-ended so that as new categories or properties are generated and related, there will be a place for them in the scheme (Glaser & Strauss, 1967). The integrating scheme, according to Glaser and Strauss, is very likely to be discovered by the analyst within his data, since the data and its theoretical concepts and constructs are so intimately related (Glaser & Strauss, 1967).

Presentation of the theory

According to Glaser *the theory is an integrated set of hypotheses, not of findings* (Glaser, 1978, p. 134). It may be presented either as a well codified set of propositions or in a running theoretical (discursive) discussion (Glaser & Strauss, 1967, p. 31). They contend that use of the discussional form of formulating theory indicates its 'ever-developing' nature and makes its richness, complexity, density, fit and relevance easy to comprehend. Another way to present a grounded theory is to model it pictorially (Glaser, 1978, p.81) being careful that elaboration of the model remains grounded in the data.

Issues of validity, reliability and generalisation

Field and Morse (1985) define *validity* in qualitative research *as the extent to which the research findings represent reality* and *reliability as the measure of the extent to which random variation may have influenced the stability and consistency of the results* (Field & Morse, 1985, p. 139). Validity and reliability are problematic issues in qualitative research and cannot be addressed in the same way as quantitative forms of research because the nature of the research process is so different (Chenitz & Swanson, 1986). Despite these concerns a variety of strategies have been developed in an attempt to demonstrate validity. For example, Miles and Huberman (1984) described 12 strategies for examining the validity of qualitative measures. Others (eg. Denzin, 1989) have advocated the use of *triangulation* which involves the use of two or more theories, methods, data sources, investigators, or

analysis methods in a study (Burns & Grove, 1993, p.782). However, according to Sandelowski such efforts demonstrate that

Qualitative researchers are still haunted by the ghost of positivist science, which, despite its widely acknowledged shortcomings, still manages to 'pull' and survive as 'a set of practices.' There are too many qualitative researchers who, like many of their quantitative counterparts, still worship the 'scientific holy trinity (of) validity, reliability, and generalisation (Sandelowski, 1997, p. 127).

She further criticises those qualitative researchers who, seduced by procedural and mathematised notions of validity, seek to provide *enumerable surface repetitions* of phenomena, conduct *vulgar triangulation* or use multiple methods or techniques in the hope that more is better. Many qualitative researchers in nursing, she contends, are too preoccupied with criteria, standards, and rigour, and not preoccupied enough with connoisseurship and intellectual craftsmanship. *The value/validity of a work is 'transparent' - to the proficient reader- in the work, not in off-the-rack uses or cookbook recitations of method (Sandelowski, 1997, p. 127).*

From the beginning Glaser and Strauss (1967) were concerned about the emphasis on verification theory and the growth of rigorous quantitative research, which had the unfortunate consequence of discrediting the generation of theory through flexible qualitative methods. Instead, they challenged the applicability of these *canons of rigor as proper criteria for judging the credibility of [qualitative] theory based on flexible research (Glaser & Strauss, 1967, p.224).* They proposed that such research and theory be judged, instead, upon the careful and detailed procedures used for data collection, coding, analysing and presenting data, and on the way that people read the theory.

The researcher ought to provide sufficiently clear statements of theory and description so that readers can carefully assess the credibility of the theoretical framework he offers. A cardinal rule for the researcher is that whenever he himself feels dubious about an important interpretation - or foresee that readers may well be dubious- then he should specify quite explicitly upon what kinds of data his interpretation rests (Glaser & Strauss, 1967, p. 232-233).

In addition, they propose (Glaser & Strauss, 1967; Glaser, 1978) that grounded theory should demonstrate 'fit' and 'work' when applied to the area studied. By 'fit' they mean that the categories must be readily (not forcibly) applicable to and indicated by the data; by 'work' they mean that it must be meaningful, relevant to and able to explain the behaviour under study. The participants and others familiar with the area studied ought to be able to readily relate to the theory or model because it reveals something, which is familiar and new, as well as meaningful.

Grounded theories apparently also have 'grab', that is, people find them interesting and meaningful (Glaser, 1978). People remember grounded theories and use them when they find that they have fit and relevance. For example, Glaser and Strauss' book (1965) Awareness of Dying remains relevant and probably changed the way many doctors and nurses who are familiar with it have since dealt with dying patients.

Modifiability is another important feature of grounded theory. Glaser (1992) recognised that change is pervasive in the world and thus any theory must be both tentative and modifiable. Being prepared to modify the theory, as new data appear is the only way that grounded theory will maintain, what Glaser termed, its *tractability* over the area of social life under investigation, and hence maintain its relevance.

The standard approach of verification studies is to generalise the results to a population (Glaser, 1992). *What applies to grounded theory is its generalisability from a substantive theory of limited scope to a process of larger scope with parsimony, based on its ability to fit, work, and be relevant* (Glaser, 1992, p. 117). It is also claimed that a good grounded theory ought to transcend a particular setting and be fully generalisable to any other setting where similar problems emerge (Glaser, 1978, p. 100, emphasis added).

Uses of grounded theory

Grounded theory has been used most frequently either in studying areas in which little previous research has been conducted or for gaining a new viewpoint in familiar areas of research (Burns & Grove, 1993; Chenitz & Swanson, 1986; Glaser & Strauss, 1967). In some cases the researcher generates theory, or models, which can lead to further research and thus contribute to the ongoing development of knowledge in the area of concern. Chenitz and Swanson (1986) further contend that a grounded theory approach is particularly useful to conceptualise behaviour in complex situations, to understand unresolved or emerging social [or clinical] problems, and to understand the impact of new ideologies [eg. clinical guidelines] or services. *The focus of a grounded theory study on interaction allows us to understand behaviour in new and different ways* (Chenitz & Swanson, 1986, p. 7).

Increasing numbers of nurses have conducted grounded theory research (refer Burns & Grove, 1993, p.70-71 for a comprehensive list of grounded theory studies). According to Chenitz and Swanson (1986) the earliest grounded theory study was Quint's titled 'The Nurse and the Dying Patient' in 1967, which came out of her collaboration with Glaser and Strauss. Some years later, Fagerhaugh and Strauss (1977) developed a grounded theory of the politics of pain management in a hospital setting. Christensen's (1990) grounded theory study explored the nature of the collaboration between nurse and patient when a person enters hospital for elective surgery, and she developed the notion of the Nursing Partnership as a model for nursing practice. More recently, Beck (1993) used grounded theory method to develop a substantive theory of postpartum depression which she called 'Teetering on the Edge'. In New Zealand Robertson-Green (1993) investigated public health nurses' perceptions of their work with children and families using grounded theory and developed a theoretical framework for public health nursing practice, which she called 'Enabling Choice'. These nurse researchers, and many others, have demonstrated the usefulness of this method for identifying new concepts, categories, processes, and theories that explain a variety of phenomena of interest to the nursing profession.

The research process

Having described the key methodological concerns and characteristics of grounded theory I will now describe how grounded theory was used in this study. Any departures from accepted grounded theory method will be explained.

The area of concern

As the literature review showed, nurses have been criticised by various researchers since the early 1970s for inadequate assessment and management of children's pain. However, many of these studies were methodologically flawed and only two involved interviews with nurses to determine their rationale for particular decisions to medicate or not medicate. These studies also tended to focus solely on analgesic administration; other strategies that nurses might use to relieve children's pain were often not investigated. Both medical and nursing researchers and other writers have claimed that pain is a complex phenomenon to understand, assess and treat. They have also acknowledged that this complexity is further compounded when children are involved either because children are too young to verbalise their pain or health professionals sometimes lack sufficient knowledge and skill to determine the child's pain level and treat pain effectively. And even when children do voice their pain experience there is a risk that they may not be believed by health professionals, or that the nurse may not act to relieve the child's pain. Thus, despite numerous studies, the clinical area (phenomenon) of how nurses deal with children's pain remains unclear.

The problem, purpose and aims of the research

I did not want to pre-empt discovery by focusing on problems raised by researchers or others in the literature. From the outset I tried to heed the advice of Chenitz by attempting to maintain *a cautious and sceptical attitude about the literature throughout the study* (Chenitz, 1986, p. 44 in Chenitz & Swanson, 1986). This was particularly important at the beginning of the project during initial data collection and analysis as I tried to forget the literature review and remain open to participants' perspectives, focusing solely on the interview data and in this way allowing novel concepts to emerge. This was helped by the

fact that there was a considerable time delay (six months) between writing the proposal and being granted approval to proceed.

Thus, the problem for investigation in this study was kept broad and open: *How do nurses deal with children experiencing pain?* The research intention was to attempt to discover:

- *What was going on in this substantive area?*
- *What was the main concern or problem for nurses in the setting when dealing with children who were experiencing pain?*
- *How do nurses resolve and process this problem?*
- *What sums up in a pattern of behaviour the substance of what is going on, i.e. the essence of how nurses deal with the problem?*
- *What patterns can be identified in the problem and how do these relate?*

In other words, I wanted to go beyond just reporting participants' perspectives *to produce a theoretical formulation or integrated set of conceptual hypotheses about the substantive area under study* (Glaser, 1992, p.16).

Therefore, the purpose of this study was *to generate a detailed description and theoretical analysis of nursing interventions or non-intervention with children experiencing pain.*

Proposed sources of data

Earlier researchers had expounded the limitations of retrospective chart reviews and questionnaire surveys and the advantages of prospective methods and interviews. Thus, at the outset, I believed that the ideal approach would be to combine a variety of techniques that included interviews with children, parents and nurses, observation of nurses' practice and prospective chart reviews. However, when I discussed my proposed research with senior medical and nursing staff in one paediatric unit, they made it quite clear that they would not agree to the involvement of either parents or children. The senior nurse claimed that parents and sick children had enough to cope with, without being subjected to research. The administrator of one Ethics Committee reiterated these concerns and said that approval

was unlikely if the study involved interviewing children. Rather than test these claims I decided to confine the study to interviews with nurses. This meant that I only had access to nurses' perceptions of how they practiced but no way of confirming this. Thus, the research proposal that went to Ethics Committees only included interviews with nurses as the method of data collection.

Access and entrée to the research setting

After gaining ethical approval (which will be described later) I had to gain research access and entrée to the chosen setting. Research access involves negotiating with key persons in the institution for access to the institution's resources, in this case this involved gaining permission to approach nurses working in the setting of interest and permission to use a room for interviewing. Davis (1986), stated that:

Gaining entrée is integral to the conduct of the research process itself and continues throughout the data-gathering phase of the investigation.... [It] is loosely circumscribed and emergent, thus maximising discovery. Very simply entrée consists of all those relationships and contacts made for the purpose of getting into the institution, as well as for furthering research and insuring continuing access to places, persons, and documents within the institution. In short, entrée has to do with getting in, staying in, and getting what the researcher needs (In Chenitz & Swanson, 1986, p. 49).

Some difficulties arose during the course of gaining research access and entrée to the different settings planned for this study. Initially, I proposed to carry out this study in the medical/surgical children's ward in the local regional hospital in the city where I work and live. Once I had ethical approval I wrote to the senior nurse and nurse in charge of the Children's Unit of the local hospital, outlining the proposed study and seeking permission to approach nursing staff.

I also wrote to the Professor of Paediatrics and the Manager as a courtesy, and indicated that I was seeking permission to access a number of registered nurses from the Senior Nurse and nurse in charge of the Children's Unit. The Manager and Professor both responded promptly by letter, indicating their support. The Professor raised some

methodological issues and asked for a copy of the full proposal. He was concerned about the influence of the newly established Pain Service, which he thought might *skew my results*. The senior nurse was already known to me in my roles as clinical supervisor with students in the past, and as a parent of a past patient although I had very little contact with her at that time, and also through her being a registered nurse undertaking a degree in nursing in my workplace, although I had no direct teaching involvement with her. She wrote and expressed concerns to me about doing research on children (even though this was not requested); she also stated that interviews were to take place in the nurses' off duty time and recommended an indirect approach to them which involved leaving information and a contact number for them to use if they wished to participate. I felt that a meeting was needed to discuss these issues so I made phone contact with the senior nurse and arranged a meeting. Consequently, the concerns were resolved, and she gave me permission to come to a staff changeover meeting to talk to the nurses about the study, and to leave the Information Sheets. She also asked for a copy of the full proposal.

Following the meeting with the staff, one nurse contacted me and I set up an interview time. However, no other nurses had contacted me after two weeks so I decided I must try and access nurses in a different setting. I later returned to this setting and talked further to the nurses about the study, indicating that I would like more participants, stressed that my interest was in how they reached decisions in the difficult area of managing children's pain and that the planned research would not be evaluating their performance in this area. On that occasion two further nurses said they were interested in participating if the interviews could be done in work time. I explained that the senior nurse had been quite specific that that was not permissible, and suggested that perhaps two shorter interviews could be done during their meal break but neither of these nurses made further contact with me.

Other nurses doing research about the same time warned me that they had experienced difficulty obtaining even small numbers of participants at this hospital. We thought that the probable reason for this was that this population felt over-researched because of ongoing

medical, nursing and other health professional studies being conducted there. I was able to recruit only one participant in this setting.

A second setting was then approached. This was a surgical children's ward in another urban centre, which was also a university teaching hospital and provided clinical experience for nursing students. A colleague knew the Nurse Manager of the Children's Unit at this other more distant urban hospital, and offered to contact her on my behalf. However, when I heard nothing, I wrote directly to the Nurse Manager of the Children's Unit, as there was no longer a Senior Nurse position at the hospital and permission to access nurses was granted. I then had to identify a key person in the unit who could introduce me. Fortunately, my supervisor knew a nurse who worked in the Children's Unit at that hospital, who then contacted me by e-mail to find out details of the planned research. At this person's suggestion I sent up Information Sheets, Consent Forms, and a copy of my research proposal, which was made available to nursing staff. This nurse's assistance was invaluable and included, recruiting participants, setting up appointment times, and arranging a venue for interviewing then e-mailing me about these arrangements. I travelled to the city and conducted interviews over two days in a meeting room in the unit after meeting the contact nurse and visiting the unit and staff. The nurses who participated had no restrictions about when they could participate in interviews and arranged these to suit their individual workload; two even came during off-duty time and one while on leave. To my delight a fifth nurse also asked if s/he could be part of the study.

I recount this detail about gaining research access because I believe it raised some important issues about nurses as researchers and illustrates that there may be existing tension because of multiple research projects, multiple roles and/or employment issues. Gaining access and entrée is not easy, can take rather a long time to achieve, and has to be maintained for the duration of the study.

The setting

Although two settings were initially used a decision was made later to include interview data only from the second setting. The reason for this is outlined in the next paragraph. Thus, the setting, which was eventually used for this study, was a children's surgical ward in a large, urban, university teaching hospital some distance from where the researcher lived and worked.

The participants

A convenience sample of six nurses volunteered to participate in the study, one from the first setting, and five from the second. As data analysis proceeded it became clear that the context in which the nurses worked was significantly influencing their practice. So, the decision was reluctantly made to exclude further analysis of the single participant in the first setting and focus on the five nurses from the second setting. This second, larger group had been registered nurses for varying lengths of time, ranging from 7 to 16 years, with a mean of 11.4 years. The nurses had worked in paediatrics for 1 to 14 years, with a mean duration of 7.3 years. All of the participants had qualified as registered nurses from three-year diploma programs (baccalaureate nursing degrees for entry to practice were introduced in 1993 in New Zealand). Two of the participants were studying for a post registration Bachelor of Nursing Studies and one had completed a course in paediatrics at an internationally renowned Children's Hospital overseas.

The data

In this study data were collected in the form of individual interviews with the participating nurses. The interviews were unstructured and began with the researcher asking each nurse to describe a recent instance where they had provided care for a child experiencing pain. An interview guide containing a set of broad topics was on hand to use as a prompt by the researcher if the participant had difficulty responding to the initial open-ended question. As the researcher became increasingly sensitive to emerging concepts the dimensions of these were explored with each participant, using more direct questions. Interviews were conducted in privacy in a room near the children's ward. All interviews were tape-

recorded, using two tape-recorders. Even though I had rehearsed using the technology I did not operate one correctly at the first interview, so it was fortunate I had a back-up recording. A private typist was employed to word process the tape recordings into written transcripts. Confidentiality issues were discussed with her/him and a signed confidentiality declaration obtained.

Following this I read each transcript on the computer screen while listening to the tape and made corrections, or filled in gaps where necessary as the typist was unfamiliar with medical terminology. In some instances what the participant had said was inaudible, so to preserve meaning I added text in square brackets. Transcripts were then returned to participants for them to correct and some changes were made at their request. Once the corrected transcript was printed, line-by-line data analysis began. This process was repeated with the second interviews. Because I had to travel a considerable distance to do interviews in another city and I had limited funding and time, the first interviews with the five participants in that setting took place over a two-day period. This meant I had limited ability to treat data collection and analysis as concurrent processes and had to rely on my field notes of particular issues or points made during each interview.

This concurrent process termed *theoretical sampling*, means that categories or issues, which emerge during the interview with one participant, can be explored in interviews with other participants. However, during and after the interviews I did note down particular points to follow up and compare with the other participants that I interviewed that day or the next. The second interviews were held almost three months later by which time I had completed initial open coding of the transcripts. Consequently I was able to do some theoretical sampling on the second visit, and also used the second interview to clarify anything in the first interview, which was ambiguous or otherwise unclear. The nurses used the second interview to clarify and correct information or add new material. For example, one participant told me about the different non-pharmacological techniques s/he used because s/he noticed that s/he had not mentioned any in the first interview and did not want to leave me with the impression that s/he only used drugs (analgesics) for pain management.

Following the second interviews and completion and checking of the transcripts by participants, the next stage of data analysis began. This will be described fully in a later chapter.

Ethical Considerations

As with any other research involving human participants, the ethical principles of respect for persons, beneficence, non-maleficence and justice needed to be upheld. In qualitative research the application of these principles is continuous because the researcher interacts with the participants over a prolonged period of time in constantly evolving, unpredictable situations. Although the researcher may be able to predict certain ethical issues arising others may arise unexpectedly during the course of the research. However, in general, the ethical considerations in grounded theory research include: equality of access to participate; informed consent; maintaining anonymity and confidentiality of information; access to and potential use of findings. In addition, the qualitative researcher's decision trail for generating categories and/or theory from the data needs to be made transparent.

Ethical Approval

Ethical approval for this study was sought and obtained from the University Human Ethics Committee and then the Regional Health Authority Ethics Committees for each setting. Approval also had to be obtained from the Ethics Committee of the educational institution where I work as a pre-requisite to funding approval. Getting ethical approval from these four committees was a lengthy process. Some changes to the Information Sheet and Consent Form were made at the request of one of the committees (copies not included to preserve anonymity).

When it became clear that I would not get enough participants locally, ethical approval was sought from a second Regional Health Authority Ethics Committee three months later, in order to access nurses at a second hospital. A rather protracted correspondence ensued as this committee sought a series of changes to the Information Sheet, and then changed their mind about the wording to be used. Essentially the committee wanted participants with any

concerns to contact the nurses' union rather than the committee. Since union membership is voluntary in New Zealand and participants might have professional associations with other organisations, such as the College of Nurses, this did not seem appropriate to me. This meant that slightly different Information Sheets were used for each setting.

Access to participants

As already mentioned, once ethical approval had been granted, permission for access to the institution was sought from key people in the hospital concerned.

Informed consent

All the prospective participants received a copy of the Information Sheet some time before I met them for the first time to allow sufficient time to make a decision about participation. At the initial meeting the details of the study were again explained to them and their questions answered until they agreed that they were satisfied and understood fully what participation would mean. The nurses were informed that participation was voluntary and that they would be free to withdraw from the study at any time, should they later change their mind. If they did decide to withdraw they were assured that any information already collected would be disposed of as requested. Prospective participants were also informed at the initial meeting that they could decline to answer any particular question during the interview, stop the interview and/or tape-recorder, or have any particular information deleted from the records. If they then volunteered to participate they were asked to sign the Consent Form, which would remain a confidential document held by the researcher (each participant retained a copy of their signed Consent Form) until completion of the study, or the person withdrew from the study. At such time it would be disposed of as requested. At the time of obtaining consent participants were also asked for permission to keep their information for later use in a larger, doctoral study. A declaration to this effect was included on the same Consent Form. If for some reason the larger study did not eventuate the information would be disposed of in the manner requested by the participant at the time of giving their consent to the first study.

Confidentiality

All written and recorded information was treated as confidential and participants' anonymity preserved in the final report. The participants all chose what name they wanted to be known by during the interview, in the transcripts, and in the final report. I kept a confidential record of their real name and chosen name, as well as their preferred mailing address in a locked filing cabinet at work. However, eventually it was decided that even the use of pseudonyms could not guarantee anonymity for each participant. Consequently, all interview excerpts used to illustrate concepts contain no participant details.

Interviews were conducted in privacy at a mutually agreed venue and time, and all reasonable means were used to maintain security of recorded information and computer files. Data analysis and writing up was done at the researcher's home on a stand-alone computer. Backup copies of computer files on floppy disks, tapes and transcript copies were stored in a locked metal filing cabinet in the researcher's office at her workplace.

Potential harms and benefits

Participants were assured that no individual information about them would be made available to her/his manager, nurse in charge or any other staff member unless some very serious concern arose and then the usual organisational procedures would be followed. In retrospect I wondered whether this statement about serious concerns also acted as a barrier to recruitment. I had hoped that participants might benefit from reflection on their practice and that the findings might enable nurses to improve their practice in some way for the patient's benefit.

Access to study information and findings

Each participant was able to check their transcripts for accuracy and sensitivity of information, and could ask for material to be deleted from the record. They were also invited to read the draft analysis and theoretical interpretation for accuracy and 'fit' with their reality. The researcher's academic supervisor had access to the data analysis decisions, the draft and final reports. The private typist who did the transcribing signed an

approved confidentiality declaration, and had no contact with any participants. Colleagues also helped with editing and giving suggestions for the final draft, but had no contact with participants. An executive summary of the findings was sent to all participants on completion of the study.

Quality in qualitative research

Much has been written about rigour in research, that is, the extent to which careful procedures and concern about the accuracy, or 'truth' of the information presented, have been used throughout the research process and in the reporting of findings. Although concepts like reliability and validity cannot really be applied in any meaningful way to such things as an informant's qualitative responses in an unstructured interview, this does not imply that qualitative researchers are unconcerned about the quality of their research.

Polit and Hungler (1993) and others suggest that qualitative researchers are concerned about the truth of their data, and that qualitative researchers are as eager as quantitative researchers to have their findings reflect what they termed the 'true' state of human experience. I suggest that because qualitative research involves interpretation of data it is more appropriate to expect that the account will ring true to insiders and offer new insights. I would further add that qualitative researchers want to have their findings accepted as being of good quality by the research community.

Many qualitative nurse researchers seek to establish the quality of their data and their findings through using procedures that have been outlined by Guba and Lincoln (1981) who proposed four criteria for establishing what they termed the *trustworthiness* of qualitative data: *credibility*; *transferability*; *dependability*; and, *confirmability*. Sandelowski (1986) elaborated these criteria further for nursing research, changing the terminology to: *credibility*; *auditability*; *fittingness*; and, *confirmability*. *Credibility* refers to the truth of the findings as judged by participants and others within the discipline. In other words, the participants and other nurses would recognise the findings in this study about how nurses

deal with children's pain, and the outcome would have meaning for them. *Auditability* establishes the researcher's accountability in demonstrating how the research was conducted, and how they reached decisions about interpretation of the data and findings. The researcher provides sufficient information about the method and procedures used, and identify any problems, which occurred. They may also provide examples of data, or documents (that is, an *audit trail*) that would allow an independent auditor to reach similar conclusions. The procedures used and problems encountered in this study, particularly in relation to gaining research access and entrée, have already been described. An account of procedures used to analyse the data and inductively derive concepts and a process follows in the chapter on data analysis.

The criterion of *fittingness* demonstrates that the concepts or findings are faithful to, or 'fit,' the everyday reality of the participants. Others in the discipline can evaluate the importance of the concept, process or other aspects of the findings for nursing practice, education, and research and theory development. Finally, *confirmability* is present only if the other three concepts are all present. Limited measures to ensure quality were incorporated into this study and included: (1) a member check; and, (2) independent audit.

Member check

A three step *member check* procedure (Hoffart, 1991) was used to see if data and findings reflect the nurse participants' realities: (i) each participant was asked to review the transcripts of her/his own interviews to ensure that the data were accurate and complete; (ii) s/he was given an opportunity to comment on the researcher's preliminary interpretations; finally (iii) s/he was invited to comment on the final interpretations, and conclusions. Prospective participants were informed of their checking role in the Information Sheet. I received feedback from three participants about changes they wanted. One participant wrote to me about my theoretical interpretation and agreed that it had 'fit' and meaning for her/his clinical practice.

Independent audit

A researcher experienced in the techniques employed in the study undertook an independent audit of the researcher's decision trail, data collection and analysis techniques.

The nurse as researcher

Morse (1991b), in a dialogue with Lipson, argues that doing fieldwork in a setting where you already have a role and you are working, or even going to the equivalent area in a different setting, is problematic. One of the issues raised was what do you do with any information that is not very flattering?

In this study I was to some extent attempting to do research in my own setting, in that I was already known by some of the nurses, in different roles as a parent, clinical tutor and lecturer, although I did not currently work there as a clinical tutor. I was certainly attempting to do research in my own culture of nursing, and I had worked in paediatrics in several hospitals in New Zealand and Australia.

I have reflected on the difficulties I encountered in gaining access and entrée to the local paediatric unit and suspect that I was seen as someone who might be critical of nurses' practice because of my teaching role. So, being known in other roles by some of the nurses was I believe a barrier to access, entrée and recruitment. On the other hand, not being known in the other setting was a disadvantage to some extent, because it meant that I had to use what contacts I did have to try and gain entrée. As it turned out I did know one of the participants. However, not being known by all the other nurses in that unit in any role other than researcher was an advantage once access was achieved.

My experience of nursing children, and particularly my experience of having a daughter who experienced unrelieved pain in hospital, led to the development of strong feelings about 'good' management of children's pain. For example, I believe that children who are able to report their pain experience should be listened to and believed, and every attempt made to assess and relieve their pain appropriately. I endorse McCaffery's dictum that *pain*

is whatever the person experiencing it says it is, and occurs whenever the person says it does (McCaffery & Beebe, 1994, p. 15).

Some researchers take the position that qualitative researchers should increase their 'objectivity' by taking into account their biases and feelings and thereby understand their own influence on the research (e.g. Field & Morse, 1985). Thus, I needed try and keep my strong feelings about what I considered good pain management in check as I interviewed participants.

On the other hand, according to Lipson (In Morse, 1991b), other researchers recognise that value free research is impossible because we cannot get, 'outside our heads'. These researchers argue that attempting to achieve 'objectivity' is based on a false premise. Instead, they suggest that subjectivity should not be considered a limitation but rather that personal response to the setting can be capitalised on as a rich source of data and an avenue for learning about the setting.

The goal of grounded theory is to describe the complexity of human experience and interaction in its context with emphasis on learning from 'informants' rather than approaching 'subjects' with preset hypotheses. Such an approach relies heavily on the researcher's use of self.

Grounded theorists describe complex social processes and phenomena using theoretical sampling, participant observation, and interviewing. Researchers use themselves as both data elicitors and processors who do ongoing analysis for the purpose of generating categories of data for theory construction. Interviewers must be flexible and constantly alert to elicit data that are needed for the growing picture (Lipson, In Morse 1991b, p. 74-75).

Another aspect of this issue relates to the impact of participants' perceptions of the researcher as a person, particularly at the beginning of a study. Lipson proposed that:

Because an interview is an interpersonal encounter, it is vastly improved by mutual understanding, rapport, and trust. What informants think the interviewer will

understand relates to their perception of his or her cultural background and personal attributes. Similarity of background can be beneficial or detrimental, depending on the group, the situation, and the individuals involved (Lipson, In Morse, 1991b, p. 78).

There are some things an informant can express only to an interviewer of similar background. In this sense I felt it was an advantage to be a nurse because the participants could use their normal nursing language or jargon, and make references to aspects of hospital organisation that only an insider knows and understands. In fact they said things like, 'But you know all that', or 'You must have come across that too'. Some sharing of experiences or concerns went on between participants and myself as researcher.

On the other hand, perceived dissimilarity between researcher and informant has advantages in other situations. *Some informants will be more open if they perceive the interviewer as a 'foreigner', particularly in groups in which gossip is common and feared (Lipson. In Morse, 1991b, p. 79).* I believe that gossip is rather common amongst nurses and that the participant group, which I travelled some distance to interview, felt safe from this with a researcher from a different part of the country.

Another issue which influences the research, is how the researcher handles their own emotional responses when faced with behaviour or ideas that are contrary to their own values or ideas. Although the researcher can try to control their emotional response, they cannot not know how their attempts to control strong feelings are perceived, and what effect they have on informants. As Lipson said: ... *Is it better to try to control strong feelings or to more openly acknowledge them and try to explain one's reactions? Either way affects both the relationship and the data gathered (In Morse, 1991b, p.80-81).*

Controlling strong feelings, like revulsion at the sight of a suppurating wound, is something, which is part of the socialisation of nurses and becomes a coping mechanism. Lawler (1991), for example, describes the way nurses manage their own embarrassment about the nature of some nursing work, which may be dirty and unpleasant, or have sexual connotations, unless handled carefully. In this study I tried, but was not always successful

at, controlling my response to some things the participants said, and no doubt my reactions influenced their subsequent responses.

The other aspect of self, which I felt influenced my role as researcher was the way my clinical, education and researcher roles overlapped. I was an experienced clinical interviewer of patients, an experienced interviewer of students, but an inexperienced research interviewer. The technology and skills involved in making tape recordings had to be practised and mastered, but the researcher may get so fascinated by what is being said that they forget to deal with the technical aspects (eg. turn the tape over).

As a novice, the researcher also has to develop theoretical sensitivity, that is, an ability to think theoretically: to generate concepts from data and postulate meaningful relationships between concepts. Practice helps this ability; training seminars with Glaser and a supervisor experienced in the method also helped me.

In conclusion, grounded theory's focus on interaction in context makes possible new and different ways of understanding human behaviour. The grounded theory method for doing research is very demanding of the researcher in a variety of ways, and for a variety of reasons, that were discussed here; it is also a process of discovery about the area of concern, the research method and process.

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CHAPTER THREE

From Data Analysis to Grounded Theory

Introduction

As outlined earlier, the aim of grounded theory research is to discover what is going on in the area of interest and to generate an inductive theory from data. *The research product constitutes a theoretical formulation or integrated set of conceptual hypotheses about the substantive area under study* (Glaser, 1992, p. 16).

The major strategy developed by Glaser and Strauss (1967) for the discovery of grounded theory is a *general method of comparative analysis* that they termed the *constant comparative method*. It requires the researcher to simultaneously collect and analyse data; creating a continuous interplay that enables the researcher to discover categories, properties and process from the data. *The method is circular, allowing the researcher to change focus and pursue leads revealed by the ongoing data analysis* (Hutchinson, 1986, p.119).

Glaser and Strauss (1967) propose a four-stage approach for generating theory: *comparing incidents applicable to each category; integrating categories and their properties; delimiting the theory, and writing the theory* (p. 105). In this chapter the key concepts, procedures and processes for data analysis and theory generation, as formulated by Glaser and Strauss (1967) and Glaser (1978, 1992), will be described and applied to this study. Glaser and Strauss' four-stage approach will be followed to demonstrate the inductive reasoning and decisions made during data analysis and concept development in this study. Grounded theory requires the analyst to interact with the data, so it seems appropriate to describe my discovery process in the first person.

Generating the grounded theory

The procedure for the qualitative analysis of data in grounded theory, developed by Glaser and Strauss (1967), is the *constant comparative method* [which] *is concerned with generating and plausibly suggesting (but not provisionally testing) many categories, properties, and hypotheses about general problems* (Glaser & Strauss, 1967, p. 104). The initial stages of the study involves simultaneously collecting and analysing data to discover emergent categories, their properties and process, and progressively focuses the research as these become clearer (Artinian, In Chenitz & Swanson, 1986, p. 18). Decisions about what data to collect next and where to find them are controlled by the emerging theory and the procedure for this focussed data collection is termed *theoretical sampling*.¹

The general procedure of theoretical sampling is to elicit codes from raw data from the start of collection through constant comparative analysis as the data pour in. Then one uses the codes to direct further data collection, from which the codes are further developed theoretically with properties and theoretical coded connections with other categories until each category is saturated. Theoretical sampling on any category ceases when it is saturated elaborated and integrated into the emerging theory (Glaser, 1992, p. 102).

In order to do this, the researcher needs to be sufficiently *theoretically sensitive* so that he can formulate a theory as it emerges from the data (Glaser & Strauss, 1967, p.46). The researcher's *theoretical sensitivity*² refers to his/her knowledge, understanding and skill in being able to conceptualise from data or experience. Throughout the life of the project the researcher creates a continuous interplay between analysis and the data, that enables development of insights about what is going on in the data and the identification of emergent categories, their properties and process. The analyst searches for a *core variable* or *category* – the 'main theme' – *for what – in their view - is the main concern or problem for the people*

¹ *Theoretical sampling* is the process of data collection for generating theory whereby the analyst jointly collects, codes, and analyses his data and decides what data to collect next and where to find them, in order to develop his theory as it emerges (Glaser & Strauss, 1967, p. 45).

² *Theoretical sensitivity* refers to the researcher's knowledge, understanding, and skill, which foster his generation of categories and properties and increase his ability to relate them into hypotheses, and to further integrate the hypotheses, according to emergent theoretical codes.... and to relate them according to the normal models of theory in general, and theory development in sociology in particular.... It is a personal attribute of the researcher who has the ability to give conceptual insight, understanding and meaning to the substantive data (Glaser, 1992, p. 27).

in the setting, for what sums up in a pattern of behaviour the substance of what is going on in the data, [...] for gerunds which bring out process and change (Glaser, 1978, p. 94).

Generating theory, according to Glaser and Strauss (1967), is a continuous, evolving process:

Each stage after a time is transformed into the next - earlier stages remain in operation simultaneously throughout the analysis and each provides continuous development to its successive stage until the analysis is terminated (p. 105).

1. Comparing incidents applicable to each category

The researcher begins by reading the transcripts (or field notes) incident by incident and being open to the underlying meaning, or patterns within the data. As meanings or patterns emerge they are coded or named. Glaser (1978, 1992) proposes that there are two possible sources for naming these: sociological or other discipline specific constructs and *in vivo* (words used by participants). For example, a term or descriptor frequently used by participants in this study was '*knowing the child*'. Other incidents were coded using Glaser and Strauss' (1967) technique of questioning the data in a neutral fashion. For example: '*What category, or property of a category, does this incident indicate?*' '*What is actually happening in the data?*' And lastly, '*What is the basic social psychological process or social structural process that processes the main problem?*' (p. 51). This initial stage of constant comparative analysis is, therefore, termed *open coding*³ because the researcher starts with no preconceived codes but remains open to what the data suggests.

Transcripts of the interviews in this study were printed with a wide page margin for writing in such things as open codes, categories, or properties of categories, as incident-by-incident data analysis proceeded. Approximately 400 pages of narrative data were obtained from the participants. Emergent categories were then individually written up as separate files and printed on different coloured paper for each participant. The data

³ *Open coding is the initial stage of constant comparative analysis.... The analyst starts with no preconceived codes- he remains entirely open* (Glaser, 1992, p. 38).

excerpts from which the categories emerged were listed under each category heading, and the interview and page reference noted. In this way I was able to track, and compare, the properties of particular categories within the data from each participant, and between participants. I found that I quickly became more proficient at this process of open coding as I became more attuned and theoretically sensitive to the data with each reading.

Glaser and Strauss (1967) emphasise that the basic defining rule for use of the constant comparative method is: *while coding an incident for a category, compare it with the previous incidents in the same and different groups coded in the same category* (p. 106). Thus, when I coded an incident as ‘*assessing pain*’, for example, I compared this to other incidents where a particular participant talked about ‘*assessing pain*’ as well as comparing this with other participant’s incidents that illustrated ‘*assessing pain*’. As I became more familiar with the data I found I could remember what particular participants had said, and identify similarities and differences in the ways they each processed the problem under consideration.

This constant comparison of incidents very soon starts to generate theoretical properties of the category. The analyst starts thinking in terms of the full range of types or continua of the category or its dimensions, the conditions under which it is pronounced or minimised, its major consequences, its relation to other categories, and its properties (Glaser & Strauss, 1967, p. 106).

For example, ‘*assessing pain*’ was found to have eight distinctive properties that represented strategies the nurses used, these included: ‘*asking the child*’; ‘*knowing the child*’; ‘*using pain rating scales*’; ‘*observing pain behaviours*’; ‘*consulting others*’; ‘*considering pain norms*’; ‘*problem-solving complex pain situations*’; and, ‘*believing the child*’.

The participants also frequently talked about *safety* as it related to clinical practice. I was, therefore, interested in *safety* as a possible category and began to explore its dimensions and the conditions under which it was strong (dominant) or weak and the actual or potential consequences of each state. In order to ‘tease out’ how *safety* operated I wrote down my theoretical ideas about it (Glaser and Strauss call this

*memoing*⁴). I also found it helpful to draw a 'mind map' of *safety*, so that I could visualise its properties. Other possible categories were explored in this way and some were found to be properties of larger categories. Following this I proceeded to the next step of the constant comparative method which involved integrating the categories, their properties and the ways they were processed.

2. Integrating categories and their properties

This stage begins with *sorting memos* into a theoretical outline to discover how the categories and their properties relate to one another and are processed. I found it useful to do this pictorially so that I could visualise tentative relationships and explore how well they worked. Several outlines were developed and discarded until I was satisfied that I could account for the essence of the problem and its variation to the fullest extent possible with the data. This process is helped when you have opportunities to discuss what is emerging from the data, in the way of categories, their properties and processes, with a mentor. In my case my mentors were my supervisor and a colleague with experience of grounded theory.

At an early discussion I mentioned to the colleague that I was puzzling over how the nurses were concerned about the safety of what they were doing. The nurses were primarily concerned about giving intravenous increments of morphine to children, and they commented about how useful and safe the protocols were, that they were expected to follow when administering intravenous morphine and other opioids. Yet in the next breath almost, they described incidents where they ignored these protocols⁵. The colleague said to me something like 'It sounds as though they are *'pushing the boundaries at times'* - this inspired comment opened up a whole new way of looking at this phenomenon.

After this breakthrough I went back to the data with renewed enthusiasm looking for properties of *'pushing the boundaries'*. As I explored this potential category and

⁴ *Memos are the theorizing write-up of ideas as they emerge, while coding for categories, their properties and their theoretical codes. They are written up as they strike the analyst when constantly comparing, coding and analysing* (Glaser, 1992, p. 108).

⁵ References for protocols not supplied to preserve anonymity of participants and the setting.

discovered the forms it took, and under what conditions, I realised that while the nurses were indeed '*pushing the boundaries*', what they were doing also contained an element of risk. So, the category '*pushing the boundaries*' became supplanted by a new category that I called '*taking risks*'. Gradually, the properties of the category '*taking risks*' became more integrated, and its relationship to the other emergent category '*being safe*' became clearer. As I compared these two emergent categories I tried to make sense of their relationship from a theoretical perspective.

This reminded me of some work I had done in sociology some years ago, in the final year of my undergraduate degree, where I explored the properties of humour and horror. In this piece of work I was able to demonstrate that they were obverse sides of the same coin by using examples of poetry written by soldiers who had served in the Vietnam War and other literature sources, the content of which, I argued, reflected both black humour and horror.

In this exploration of the categories '*being safe*' and '*taking risks*', I concluded that these were also obverse sides of the same coin. When we are '*being safe*' in our everyday living, we are trying to avoid risk. When we take conscious risks, in whatever we are doing, we also are aware of how far we can stretch the boundaries of safety and get away with it. In other words, we do not usually take unnecessary risks. From the viewpoint of semantics, safety and risk have opposite meanings and consequently each logically implies the other.

Glaser and Strauss (1967) said that: *the theory develops, as different categories and their properties tend to become integrated through constant comparisons that force the analyst to make some related theoretical sense of each comparison* (p.109). This inductive process is helped, according to Glaser and Strauss (1967), by ***theoretical sampling*** that is:

The process of data collection for generating theory whereby the analyst jointly collects, codes, and analyses his data and decides what data to collect next and where to find them, in order to develop his theory as it emerges. This process of data collection is controlled by the emerging theory, whether substantive or formal (p. 45).

Thus, in grounded theory there is no effort to totally replicate every interview in exactly the same way as the first. Rather, theoretical sampling guides the open-ended questions the researcher uses to elicit data about some emergent aspect, or type of incident, with the next participant(s) to be interviewed. It may also guide the researcher to look for data in other sources like documents and in the literature. For example, the participants talked about analgesic and epidural protocols they used and so I requested copies to examine. In this way I was able to discover what the protocols recommended, and explore the underlying assumptions about safe intravenous or epidural administration of morphine and other drugs to children.

Ideally, the researcher would interview one person and have sufficient time to analyse field notes or a transcript before interviewing the next person. However, my limited access to the participants constrained the extent of the theoretical sampling I was able to do, particularly at the first interview. During the initial interviews, as certain aspects of the emerging data struck me as interesting, I jotted these ideas down and later reflected on the data and my notes before deciding what I wanted to ask the next participant. At the second interview with the participants I was able to use this technique much more effectively because by then I had had the opportunity to read and analyse the transcripts, and knew what data I wanted to collect in order to develop the emerging theoretical codes. In other words, I could do more theoretical sampling.

3. Delimiting the theory

Glaser and Strauss (1967) describe this third stage of the constant comparative method as follows:

As the theory develops, various delimiting features of the constant comparative method begin to curb what could otherwise become an overwhelming task. Delimiting occurs at two levels: the theory and the categories. First, the theory solidifies, in the sense that major modifications become fewer and fewer as the analyst compares the next incident of a category to its properties. Later modifications are mainly on the order of clarifying the logic, taking out non-relevant properties, integrating elaborating details of properties into the major outline of interrelated categories and - most important - reduction. By reduction we mean that the analyst may discover underlying uniformities in the original set of categories or their properties, and can then formulate the theory with a smaller set of higher-level concepts. This delimits its terminology and text (p. 110).

Initially, I identified twenty-one categories in the data that appeared quite distinct. Then, as I became increasingly interested in the category 'safety' I searched for direct or implied references to 'safety' embedded in what I had initially seen as a different category, or in relation to a different incident. References to 'safety' within other tentative categories such as; 'protocols', 'practice', 'attitudes to morphine', 'drugs', 'nurses' knowledge', 'ethics' and 'time', began to expand the properties of 'safety' and delimit the number of categories within the emerging theory. For example, as I explored the category 'safety' in relation to the category *ethics*, it became clear that *safety* was viewed as being in the best interests of the child, and involved both doing good and preventing harm. Thus, I concluded that '*being ethical*' seemed to be emerging as an overarching principle that guided practice in this area.

Finally, 'safety' was eventually given the gerundive form '*being safe*' to demonstrate that nurses view this as an ongoing desirable directive for their practice, particularly when administering potent drugs, like morphine, to children. I was beginning to identify an underlying pattern that provided the rationale for nurses' practice. '*Being safe*' had emerged as a tentative core category.

At this point I began to read the scholarly and professional literature, including the Standards for Registration of Comprehensive Nurses (Nursing Council, 1992), to explore the context of 'safety' in nursing and relate it to my own work. Glaser and Strauss (1967) recommend going beyond the original data to make comparisons with other data and literature sources. Glaser (1978) argues that comparing one's own work in this way may provide a degree of support for it and will show the researcher how he or she fits into the literature and what they have contributed.

Thus, with reduction of terminology and consequent generalising, forced by constant comparisons (some comparisons can at this point be based on the literature of other professional areas), the analyst starts to achieve two major requirements of theory:

- (1) *parsimony* of variables and formulations, and
- (2) *scope* in the applicability of the theory to a wide range of situations, while keeping a close correspondence of theory and data (Glaser & Strauss, 1967, p. 110-111).

Although safety emerged as an important category, it was not new in nursing. Safety is a constant concern for diligent nurses in professional practice, their patients, their medical colleagues, their employer and the profession. It is emphasised during clinical training and education at all levels - undergraduate and postgraduate. In particular, safety is a key concern when administering drugs to patients. I was concerned that I had discovered nothing interesting. This concern, I believe, is captured well by Glaser and Strauss (1965) in their seminal work titled Awareness of Dying when they wrote:

A sociologist contributes most when he reports what he has observed in such a fashion that his account rings true to insiders, but also in such a fashion that they themselves would not have written it. That is, most useful sociological accounts are precisely those, which insiders recognise as sufficiently inside to be true but not so 'inside' that they reveal only what is already known. And since insiders, especially those in stressful circumstances do not always agree with each other on all matters, a sociological narrative must also take this disagreement into account. The sociologist's obligation is to report honestly but according to his own lights (Glaser & Strauss, 1965 p. 9).

The next day I realised that 'risk taking', the other side of 'safety', was not made explicit in what nurses said about their practice. I then did a literature search on risk taking and nursing, using the CINAHL database and found that almost all of the literature related to risky health behaviours on the part of nurses or health care clients. For example, there were studies that investigated whether nurses adhered to universal precautions when disposing of used syringes.

That same day, a colleague asked me how my research was going and what I had found. My reply was something like: "I've interviewed nurses about how they deal with children's pain and I think my data analysis shows that nurses attempt to manage children's pain by 'being safe and taking risks'." She expressed surprise that nurses engaged in risk taking when managing pain. I tested this out with other colleagues who were also intrigued by the concept of risk taking in nursing practice and encouraged me to explore this further. Suddenly I felt I was onto something and that I had the first inkling of a tentative theory about how nurses deal with children's pain.

Glaser and Strauss' second level for delimiting the theory is reduction of the original list of categories, which I had begun to do by extracting incidents or propositions that referred to '*safety*' from the wider group of categories.

At this point I felt that the two main categories I wanted to work with were '*being safe*' and '*taking risks*'. As I worked with both these categories I discovered the range of conditions under which each occurred and what their properties were. Constant comparative analysis revealed nine properties, or defining characteristics, for *being safe* and eventually a number of subcategories. The emergent grounded theory was thus both growing and being reduced. Glaser and Strauss (1967) suggest that, as the theory grows and becomes reduced, it increasingly works better for ordering the mass of qualitative data, and the analyst becomes committed to it. Once I felt committed in this way I was able to reduce the original list of categories, and to focus on selective coding data for these primary categories according to the present boundaries of the developing theory. I was then able to devote more time to the constant comparison of incidents that were applicable to this smaller set of categories.

At this stage, I had reduced the terminology and number of categories that I was working with and could now code more selectively, comparing incidents applicable to this smaller set of categories. Another factor that delimits the categories even further is that one by one they become *theoretically saturated*⁶. After I had coded incidents for a category a number of times I began to notice if the next applicable incident demonstrated a new aspect, or was merely more of the same. *If 'yes', then the incident is coded and compared. If 'no', the incident is not coded, since it only adds bulk to the coded data and nothing to the theory* (Glaser and Strauss, 1967, p.11). However, if theoretical saturation is incomplete for some aspect of the emerging theory, Glaser and Strauss (1967) recommend returning to data collection and doing more theoretical sampling. Overall, I felt confident that the categories I was working with were theoretically saturated.

⁶ [Theoretical] saturation means that no additional data are being found whereby the sociologist can develop properties of the category (Glaser & Strauss, 1967, p. 61).

4. Writing the theory

According to Glaser and Strauss (1967), at this stage in the process of qualitative analysis, the analyst possesses coded data, a series of memos, and a theory. The discussion in memos provides the content for discussion of the categories that become the major themes of the written theory. For example, the major themes or categories discovered in this study were '*managing pain*', '*being safe*', '*taking risks*', and '*being ethical*'. Glaser and Strauss suggest that a grounded theory is always evolving, and that you can return to the data later when necessary *to validate a suggested point, pinpoint data behind a hypothesis or gaps in the theory* (Glaser and Strauss, 1967, p. 113).

In his later exposition of the method, Glaser (1978) provided further concepts, procedures and processes for researchers to use in grounded theory. In particular, what was missing from the earlier publication was the notion of a *core category*, which he sometimes also called a *core variable*. Glaser (1978) recommends that the analyst should consciously look for a core variable when coding the data. According to Glaser, the analyst should be:

Constantly looking for the 'main theme,' for what - in their view - is the main concern or problem for the people in the setting, for what sums up in a pattern of behaviour the substance of what is going on in the data, for what is the essence of relevance reflected in the data, for gerunds which [sic] bring out process and change. ... Possible core categories should be given a 'best fit' conceptual label as soon as possible so the analyst has a handle for thinking of them. The analyst may have a feel for what the core variable is, but be unable to formulate a concept that fits well. It is OK to use a label, which is a poor fit until a better fit eventually comes (Glaser, 1978, p. 94).

As I mentioned earlier, *safety* revealed itself quite early in the data analysis process and this was later put into the gerundive form of *being safe*, and became a core variable, or category. The category *pushing boundaries* was also adopted as a potential core variable, but I found that it did not fit with the core variable of *being safe* so well. When I explored the conditions under which the category *pushing the boundaries* emerged, it became clear to me that what was going on had a risk element. Thus, I renamed the category *taking risks*, but was not sure whether this was a second core category, or not.

Glaser (1978) presents some criteria for determining whether a category is a core one or not. The main criteria are:

1. It must be central, that is, related to as many other categories and their properties as possible and more than other candidates for the core category. This criteria [*sic*] of centrality is a necessary condition to make it core. It indicates that it accounts for a large portion of the variation in a pattern of behaviour.
2. It must reoccur frequently in the data. By its frequent recurrence it comes to be seen as a stable pattern and becomes more and more related to other variables. If it does not reoccur a lot, it does not mean the category is uninteresting. It may be quite interesting in its own right, but it just means it is not core.
3. By being related to many other categories and recurring frequently, it takes more time to saturate the core category than other categories.
4. It relates meaningfully and easily with other categories. These connections need not be forced; rather their realisation comes quick and richly.
5. A core category in a substantive study has clear and grabbing implication for formal theory (Glaser, 1978, p. 95-96).

The core category is able to account for much of the variation in the problematic behaviour, and it is also a dimension of the problem. Thus, in part it explains itself and its variations (Glaser, 1978, p. 96).

Being safe certainly meets the criteria for centrality, frequent recurrence, clear and ready connections with other categories; it is a dimension of the problem of dealing with children's pain; and when tested with participants and colleagues, it fits their view of nursing practice.

By contrast, I found that **taking risks** is a latent⁷ condition that only emerges under certain conditions. It is also a dimension of the problem because *taking risks* has the opposite meaning and hence illustrates the variant state of *being safe*. Although the risk dimension could also be termed *being unsafe* without jeopardising semantic meaning,

⁷ *Latent*, adj. potential but not obvious or explicit. Collins Concise English Dictionary (3rd ed. 1992)

this term would not have so much 'grab,' as Glaser (1978) puts it. Thus, I made the decision to call the core category: *Being Safe and Taking Risks*.

The other key concept in grounded theory described by Glaser (1978) is a *Basic Social Process (BSP)*, which is a type of core category that accounts for process within the data. A BSP is also stated as a gerund (*a noun formed from a verb, ending in 'ing' denoting an action or state*) to suggest movement, and change, or process over time. It must have two, or more, clear emergent stages *that differentiate and account for variations in the problematic pattern of behaviour* (Glaser, 1978, p. 97). The process must also occur over time, involve change over time and these changes over time ordinarily have discernible breaking points, that is -

Discernible to the extent that stages can be perceived, so they can be treated as theoretical units in themselves, with conditions, consequences (which may be another stage), other properties, and so forth, which are unique in, form to each particular stage.... Stages may be in vivo (generally perceivable by those persons involved), or purely heuristic (generally not perceivable by the persons involved, but demarcated by the sociologist for theoretical reasons), or some shade in between (Glaser, 1992, p. 98).

Glaser (1978) further proposes that the stages may be learned as people go through them or are taught them. Novice nurses, for example, learn how to assess patient's pain as well as a variety of strategies under the general rubric of pain management, sometimes also termed pain control, for relieving it. The BSP that emerged in this study was *managing pain*. Again, I was concerned that this was not a novel concept in nursing; the term *pain management* is prevalent in the literature and in everyday usage by nurses and other health professionals. It was probably inescapable. On the other hand, the nurses in this study did not generally perceive of *managing pain* as a process.

The participants in this study did not all process the problem of dealing with children's pain in the same way. Conditions varied, such as the availability of doctors (needed for prescribing purposes) and equipment (such as PCA pumps), the nurses' workload, and the severity of the child's pain, and nurses responded differently to the various practical challenges they faced. Nevertheless, despite constraints the nurses still attempted to

relieve children's pain and sometimes had to go to extraordinary lengths to achieve a satisfactory outcome.

Thus, the process of *managing pain* was fundamental, occurred over time, and remained intact even when conditions varied considerably. To determine whether a process is central to the social phenomenon under study, Glaser and Strauss (1967) propose that there are two criteria to consider: the core process discovered in the data should account for most of the variation in behaviours, be it varied in type or degree; and, the parts of the process should be logically linked. I believe that *managing pain* meets both these criteria.

Once a BSP emerges, the researcher selectively codes only those data that relate to it so that the BSP becomes the guide for further data collection and analysis. The BSP then serves as the central focus of the proposed theory that aims to describe the basic social process occurring in a given context.

At this stage, the emerging theory consisted of *being safe and taking risks while managing pain*. However, I still did not know how to account for the ethical aspect that emerged. When Glaser's criteria were applied it was found that *being ethical* related well to the core category *being safe* because it represented actions that were perceived by the nurses as doing good as well as those that prevented harms. It also accounted for advocacy behaviour and the nurses' concern with fidelity, or being trustworthy in the eyes of the child. However, it also implied that *taking risks*, when it occurred, was unethical. Paradoxically, the nurses justified their *taking risks* by arguing that it was for the child's benefit, because the benefit of relieving unnecessary suffering, they believed, outweighed any potential harm, such as causing respiratory depression. At times, the nurses explained their actions or decisions in ethical terms; at other times I believed ethical aspects were implied by what they said. It appeared to me that *being ethical* could be both a motivating force, as well as the justification, for choosing to 'be safe' or 'take risks'. Thus, *being ethical* was both a manifest and a latent category that emerged from the data.

The final step when developing a substantive theory is integration: that is, to propose tentative hypotheses about the general theoretical relationships between the emergent categories and/or processes. *Generating hypotheses requires evidence enough only to establish a suggestion – not an excessive piling up of evidence to establish a proof* (Glaser & Strauss, 1967, p. 39-40). Glaser and Strauss (1967) propose that these general relations are often discovered *in vivo; that is, the fieldworker literally sees them occur* (Glaser & Strauss, 1967, p. 40). They also note that at first one's hypotheses may seem unrelated, *but as categories and properties emerge, develop in abstraction, and become related, their accumulating interrelations form an integrated central theoretical framework – the core of the emerging theory* (Glaser & Strauss, 1967, p. 40). The core becomes a guide to further analysis and insights about what is going on in the data, for the researcher. They emphasise that integration of the theory is best when it emerges, like the categories. According to Glaser and Strauss (1967) the truly emergent integrating framework (or model) will encompass the fullest possible diversity of categories and properties and suggest their general relationships to one another.

When the researcher is convinced that his analytic framework forms a systematic substantive theory, that it is a reasonably accurate statement of the matters studied, and that it is couched in a form that others going into the same field could use- then he can publish his results with confidence (Glaser & Strauss, 1967, p.113).

This is easier said than done. For the novice researcher, although s/he may feel quite convinced that the model works well and is a reasonably accurate depiction about the problem studied the ultimate test is whether it works and has meaning for others who read it. However, Glaser and Strauss (1967) also emphasise *theory as process; that is, theory as an ever-developing entity, not as a perfected product [...] it is written with the assumption that it is still developing. Theory as process, we believe, renders quite well the reality of social interaction and its structural context* (Glaser & Strauss, 1967, p. 32).

Thus, the outcome of this grounded theory study is not meant to *provide a perfect description of an area, but to develop a theory [or model] that accounts for much of the relevant behaviour* (Glaser & Strauss, 1967, p. 30). I believe that this tentative model

suggests how nurses' in this study processed the problem of how to deal with children experiencing pain; it is a *one-case study* (Glaser & Strauss, 1967, p. 25). The next step would be to compare this model with how nurses in other paediatric settings process the problem of dealing with children's pain to determine whether it fits and is relevant to other settings or represents a 'deviant' case study. Comparisons with nurses working with adult patients would identify whether the model had a broader applicability or was specific to child patients. However, Glaser and Strauss caution that *models of integration for substantive theory that are derived from data are not necessarily applicable to other substantive areas* (1967, p. 41).

Conclusion

The constant comparative method and associated procedures for generating theory as developed by Glaser and Strauss (1967) were used in this study. The core category that emerged was *Being Safe and Taking Risks*. A related variable that emerged was *Being Ethical*, which influences the nurse's decision about whether to take risks, or not. The basic social process that accounted for variations in how nurses deal with children's pain was *Managing Pain*. Each of these major categories and process is described and discussed in the chapters that follow. Finally, the core category and process are integrated by proposing theoretical relationships between *Being Safe and Taking Risks*, *Being Ethical* and *Managing Pain*, a diagram is presented to illustrate these relationships.

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CHAPTER FOUR

The Process of Managing Pain

Introduction

When the nurses in this study described how they dealt with children's pain a central, and frequently recurring pattern of behaviour that emerged was an underlying process that was termed *managing pain*. The nurses used the term 'pain management' or spoke in terms of particular aspects, for example, 'assessment'. The *process of managing pain* is fundamental, involves change over time, and remains intact even when conditions vary it considerably. The changes over time have discernible breaks that represent stages of the process, each with its own particular properties, or characteristics. There are more than two stages, which logically link to one another and are sequential. All of which means that *managing pain* meets Glaser's (1978) criteria for a type of core category that involves a process, termed a Basic Social Process (BSP). However, the nurses in this study did not describe 'pain management' in process terms, but did identify 'assessment' 'giving analgesia' and 'monitoring response' as aspects of dealing with children's pain. They were not aware of the other stages, in other words, only three of the stages were *in vivo*. The other stages generated are purely *heuristic* devices, which denote the theoretical properties of *managing pain*.

The nurses' hypothetical descriptions of how they dealt with children's pain tended to follow both the steps of the nursing process and textbook guidelines for the safe administration of medicines. In other words, it could be inferred from the nurses' descriptions that they used a kind of composite and systematic decision-making process for dealing with pain. However, when the nurses described clinical examples of how they had dealt with a particular child's pain, something different sometimes emerged. It was evident that the nurses decision-making did not necessarily follow each of the steps of the nursing process all of the time and the time spent on a particular step or stage

varied. In addition, the six rights for drug administration and unit protocols were not always adhered to. Instead, the nurses sometimes bent or ignored these rules for the benefit of the patient. A full description and discussion of this aspect of the nurses' clinical practice is in the chapter titled *Taking Risks*.

A five-stage process for *managing pain* emerged from the data. The stages were named using either *in vivo* terms or terms inferred by the analyst from the data and comprise: *assessing; checking and interpreting; choosing; giving; and, monitoring and responding*. In order to delineate the meaning and application of each conceptual stage, its specific characteristics will be described and accompanied by selected substantiating passages from the data (including all the substantiating passages would render this document too lengthy). Finally, the significance of each concept and other relevant issues will be briefly discussed.

Managing pain: general features

The nurses described general features of managing pain and the acquisition of specific skills for working with children experiencing pain. They considered that the assessment and management of children's pain is primarily a nursing, rather than a medical, role and responsibility. According to the nurses, *managing pain* is also a significant part of nurses' work particularly in surgical wards.

I just think that it really is, pain assessment and the whole management [...] its nursing work [...]. Its really up to us to see that it is managed properly because if we don't it just doesn't happen because the medical staff [...] OK they chart the medication but they're not there, they're not in that sort of assessment mode because they don't see the child often enough so they cannot do that, it is up to the nurse to do that [...] They do chart it and that's fine but it is up to us to make sure its managed properly. If the doctor's charted some analgesia [and] if its not working its up to you [the nurse] to get back to them and say 'Look this isn't [working]'.

I think its good that the nurses [are] responsible for [assessing and managing pain] because we have the most contact [...] with the child. It would be just about impossible for any of the doctors to adequately assess on a regular basis how the children were reacting to pain and medication.

It [is] the nurses responsibility even though the doctors chart it you don't just keep giving something because that's what's charted [...] Its up to the nurses, if something isn't adequate [or] its an inappropriate dose, if its an inappropriate

method of administration, that we must go back to them [the doctor] and say [so] You must also have the knowledge to be able to do that and make your case. We [manage pain] a lot as part of our ward work because we are a surgical ward. I'm not saying that children with medical conditions don't have potential for pain. [But] you can expect [that nurses in surgical areas] are going to have to make pain assessments and control pain postoperatively.

The nurses reported that their initial educational preparation contained very little content on either assessing or managing children's pain. Only one nurse had undertaken a post-registration course in paediatrics.

There was actually very little paediatrics of any sort in [my initial training].

I don't think its covered in the basic course. Certainly not from what I can remember. And as an [...] experienced [adult patient] nurse coming to paediatrics I found that it was very much on the job learning. It was very much what I picked up from my own errors [and] also from watching other experienced nurses to see what they do. You can pick up an awful lot from report, from verbal report, but also from reading. [You learn it] on the job, just getting a feel for [it] seeing [when] you don't do it very well for a start, often.

Assessing and managing a child's pain, therefore, are skills that have to be learned through clinical experience and in-service education when it is available. The Pain Team nurse at this hospital had conducted some in-service education in specific pain management methods, such as nursing care for epidural analgesia. Some skills the nurses had learned in adult nursing settings they were also able to apply to children, such as using biofeedback techniques (alternative techniques will be discussed later in the chapter). Many writers (eg. Altimier et al, 1994; Asprey, 1994; Beyer & Wells, 1989; Bradshaw & Zeanah, 1986; Margolius, Hudson & Michel, 1995; McGrath, 1990; Miller, 1996, Rauen & Holman, 1989) contend that children's pain is more challenging to assess and manage than adults. This is partially due to the varying levels of cognitive development; children at various levels recognise, interpret, and express pain differently.

I can't even remember how I started to be able to assess a child's pain, only that it's something that happened very much by experience and after a period of time. And its always very distressing, especially to new nurses, to have children who are crying and just trying to be able to do something about it is very.. You feel very 'at sea' when there's a child who is crying but who won't [...] take their

analgesia and you're trying to do all these things to get it into them and they won't take it and spit it out and you're always wondering whether its a good idea or not to take them away and hold them down [to] give it to them, which would be an absolute matter of last resort really [...]

[Children's pain is] different to assess [...] I suppose its more difficult in that children are so different because developmentally [...] the pain's going to be expressed so differently. So that makes it more difficult.

[Managing children's pain] is definitely [different from managing adults in pain]. I find [...] adults can tell you exactly what's wrong with them and where the pain is and describe the pain. Depending on the age of the child, they can't and they'll say their tummy is sore and it can be anything from the throat down to the bottom, [...] if they can describe it at all [...]. Generally, it [is] totally different from an adult because you have to assess the whole child, how they are looking, [...] and the parents often can understand the child better than you can. The child will tell the parent [what] they won't tell us.

We have a seven-week-old baby in at the moment [who has] got an infected joint and assessing his pain is quite difficult. We had a situation the other day where his mother felt he was really grizzly and he looked quite sore to me, he had his legs drawn up. So we gave him some codeine and shortly after he let out a huge belch and went to sleep. So actually he had wind [...] he may have been sore but I think the main problem was he actually had wind pain. So I think we missed the boat with that one [...] they're quite difficult to assess really and you don't always get it right. But I think a certain amount of it is looking at what's wrong and thinking 'Well that is likely to be sore.' And giving regular analgesia I think is probably not a bad way to function.

I think there really are two differences [between managing children's and adult's pain]. Adults can let you know ... often a lot clearer than children can, about their pain ... I think there's probably still some hangovers from the old days that children don't experience pain, [and] that there's some reluctance from some quarters to accept the degree of pain which the children are [experiencing].

The acquisition of the necessary skills for *managing pain* in children may also be a developmental process. The nurses identified differences in the ways they had practised as beginning registered nurses and as more experienced nurses.

Nurses who are new to paediatrics are [...] unlikely to have developed the skills in assessing children's pain or administering analgesia. They are the things I found so hard when I started.

[You need] an awful lot of experience, I think, [before] you realise as a nurse what you're actually trying to do with the analgesia. Not [just] to give it [...] as a

new graduate I was very pre-occupied with giving things on time and less able to see what sort of difference they made. I think as a more experienced nurse now the significance of my interventions is a lot more important to me than just to get things [done] on time.

When nurses lacked particular knowledge or skills, they tended to consult colleagues that are more experienced.

I think [the amount of experience a nurse has had with particular types of patients and clinical problems] is very important. This nurse had experienced another patient with a [plaster] blister before. [Whereas], people like the house surgeon [and myself] had never seen one before, so it wasn't something [we] could think of as a possibility [...] We quite often rely on our peers as experts. In fact one of the librarians as part of his masters, on our ward at looked at where we get our information from and our colleagues and peers was the key place that most of us get our everyday information from [...] And that's OK as long as the information is up to date and reliable. So I think we rely on our colleagues a lot for making decisions, particularly if we're doing something that's not quite normal [...] that's not part of our everyday practise. We usually consult two or three of our colleagues and get their opinion on it.

Nurses who have children of their own find that this personal experience is an advantage when working in paediatrics.

I know it has helped me to have my own children [I have] more experience [of children]. Otherwise. I think it's very dangerous in paediatrics if you haven't got that [...] It's an art you have to very quickly get.

The nurses also described specific aspects of managing pain that related to discrete stages in the process.

1. Assessing

Assessing readily emerged as the first stage of the *process of managing pain*. When the nurses were asked to relate to the researcher how they dealt with children's pain they all tended to begin by describing their assessment of a particular child for whom they had recently been caring. Their accounts led to the generation of eight distinctive strategies, which nurses may use when assessing the pain level of a child. The strategies used included: *asking the patient; knowing the patient; using pain rating scales; observing pain behaviours; consulting others; considering pain norms; problem-solving complex pain situations; and believing the child.*

Asking the patient

The assessment process used by nurses began with asking older children to describe their pain.

*How I made my assessment ... part of it was ... just asking him.
My decisions about pain relief were based on what the child said.
[I'd say] 'Does it hurt?' and she'd say 'Yes, its just so sore.'*

Children can be very direct and clear about the pain they are experiencing. In addition, they may display behaviours that indicate the pain they are experiencing.

Interviewer: *What made you think she was in severe pain?*
Nurse: *She was crying, she was distressed, she was verbalising pain, she was telling me it was so sore, 'It's so sore' and her non-verbal facial expression and posturing was very consistent with her complaint of pain.*

On the other hand, younger children are sometimes not so clear about their pain and consequently the accuracy of their pain report may be doubtful.

On the whole children don't say they're sore unless they are. [...] You might say to a child 'Is your head sore?' and they go 'Yes' and you say 'Well, is your tummy sore' [and they say] 'Yes'. And like everything's sore [...] they say 'Yes' equally to everything and you can't [decide whether they are in pain]. They're going to say 'Yes' no matter what you're asking especially a younger child in which case you have to assess it in a different way. Say, you know, 'Point to where it's sore.' But you know kids they think 'Oh, OK what's the right answer? I'll point to my head.' So you know they miss the point a wee bit there.

If the child's going to say 'Yes' to everything [you ask] including picking some part of the body that's extremely unlikely to be [sore][...] Then I think you can assume that they're not able to describe that pain accurately.

Sometimes it was felt that children tend to report no pain or under-report their pain. For example, the stoical child may not report their pain, or may under-report it, and nurses need to be aware of this possibility. Conversely, sometimes children report pain but the nurse believes they are not really experiencing pain.

Some children are quite stoical and particularly if the parents mentioned beforehand that the child is quite stoical and put up with pain and [do] not say a lot about it. ... I think sometimes you'll get children that will lie still in the bed and say that they're not sore and part of that is fear and they're scared of moving (emphasis added).

I'm not sure [why some children do not report pain] I think it often tends to be children that are scared of moving. I [also] wonder if it's because they think we'll give them some pain relief and make them move and that the pain relief won't be enough. I'm not sure [of their reasons]. It doesn't happen that often but we do get children that say that they're not sore and you think they are. I usually ask them to move and then ask them why they can't move and then they will admit they're sore. Why they do that I really don't know. [...] Sometimes the parents sort of reinforce that [by saying] 'Hey you're okay, its not sore now.'

I don't know that I can think of a situation where a child said they had pain and I didn't think they did or that it wasn't appropriate to treat it. [It is] probably more common [for] a child [to say] they haven't got pain and you think they have.

I have [met children who said they were in pain but I did not think they were]. I do meet children like that but usually they have something else going wrong in their lives or something else going wrong with them. They're not usually [...] playing tricks. A child who says they are in pain and presents as being in pain, once you've ascertained that the pain doesn't really fit what the complaint is and they still say they are in pain [then] there's usually something else going on in their lives. [...] We involve the social worker very quickly once we realise something is wrong.

Another girl behaved as if she were in severe pain and reported severe pain, but consistently rated her pain level quite low. This could be quite misleading for a nurse who did not know the patient very well. This patient's persistent low pain ratings may have contributed to under treatment of her pain. It was not clear whether this girl was taught how to use the rating scale reliably.

So all those things [such as] her being rigid in the bed, crying and shaking and saying 'No don't do it', I guess they're part of the assessment but she also uses the zero to five scale well, where zero is no pain and five's the worst [pain] you can imagine. She understands it quite well [but] she'll tend to under report her pain. So, where its [her pain rating] reasonably useful perhaps for me because I think I know her quite well now, its not that useful for other nurses because if she said her pain was at one and a half you might think that it was quite good but it was quite sore. So [she rates] most of her pain between zero and two or three. She's never reported it, well; I haven't known her to report it at five.

It was also noted that in cases of severe and prolonged pain children might reach a point where they are unable to verbalise their pain any longer and nurses will need to use other strategies to assess their level of pain.

Later on when the pain became worse [and] she had the bowel obstruction, there was this sort of 'just give up thing', the pain had got so bad and she just couldn't ... she got to a stage where it was too sore to even complain and so she just [...] it was like [she was saying] 'I just can't say this anymore.'

In addition to asking the child about their level of pain the nurses also found it useful to ask them how they usually deal with pain.

What's good preop is to actually ask the child [...] what they like to do if they're sore, what they do at home if they are feeling sore [or] if they hurt themselves [...] and you find out little bits and pieces about [...] the child and how they cope. Its sometimes [...] about coping mechanisms as well and it may mean that you don't have to leap in with yet another analgesia, [...] you certainly have to keep on with the regime, you may need to increase it. But maybe there are other things that you can bring in that help the child and the parent with coping.

Significance of asking the patient

Asking the patient is the most direct way to determine location, nature and intensity of pain. Children's verbal descriptions can be very clear indicators of their pain experience. On the other hand, their learning from previous pain experience, situational, familial, cultural and emotional factors, influences children's verbal descriptions. In such cases, how well the nurse knows the child and their attitude to the child's pain behaviour may strongly influence her or his evaluation of the child's pain report. It is also useful to ask the child how they usually deal with pain so that these strategies can be incorporated as part of managing the child's pain.

McGrath (1990) also discusses the importance of asking the child about their pain experience. She proposes asking the child to verbally describe their pain, their feelings, their expectations, and their perceived control in order to provide the necessary information for identifying environmental and internal factors that may exacerbate their pain experience. Such information, she contends, is critical for designing optimal pain management for a child.

McCaffery and Beebe (1994) consider talking with the child, initiating discussion and obtaining self-reports about pain, if possible, essential to a multidimensional approach to good pain assessment in children. They further point out that it should not be assumed that children would spontaneously report pain. Children and their parents should be told that the nurse would not always know when a child is hurting. The child should be regularly reminded to tell the nurse when s/he hurts. Self-reports, they suggest, may be obtained by talking or playing with a child and the nurse should use whatever words the child uses to denote pain.

Betz, Hunsberger and Wright (1994) note that children's ability to describe their pain increases with their language skills but highlight some concerns about asking children about their pain. The authors acknowledge that research has shown that school-age children from a number of cultures can discuss pain and describe strategies they use to cope with pain (Abu-Saad, 1984a, 1984b, 1984c, 1990). However, the authors remain concerned about whether children actually mean what they say because regardless of their ability to interpret painful sensations, children (like adults) sometimes choose to deny pain. For example, they point out that other researchers found that children provided conflicting information to the nurse and the researcher (eg. Hester et al. 1989). *Children's agendas for admitting pain might differ depending on the consequences of pain and on the way in which the children are asked about the presence of pain* (Betz, , Hunsberger, & Wright, 1994, p. 890).

Wong (1995) also notes that children may deny pain and proposes that they do so because they fear receiving an injectable analgesic or because they believe they deserve to suffer as punishment for some misdeed. *They may also deny pain to a stranger but readily admit it to a parent. This behaviour should not be interpreted as seeking attention from the parent, but as a valid indication of pain* (Wong, 1995, p. 1084 emphasis added). Despite these concerns Wong (1995) maintains that children's verbal statements and descriptions of pain remain the most important factors in assessing pain. She highlights the fact that young children may not know the word 'pain' and may need help in describing it in familiar language and further suggests that it is helpful to ask a child to locate their pain, which can be done using play for younger children.

This brief review of selected literature suggests that *asking the patient* is a good starting point for eliciting descriptions of pain being experienced by children with the proviso that children may either report or deny pain for a variety of reasons and further assessing strategies may need to be used.

Knowing the patient

Talking to the child is valuable for reasons other than obtaining reports about pain. *Even when the child has no verbal ability, such as the case with the infant, talking to the child may convey at least an attitude of caring* (McCaffery & Beebe, 1994, p. 231). It is also a means of getting to know the child, and forming a trusting relationship. In the context of pain experience, it is important that the nurse knows how a particular child usually reacts to stress and pain and how they usually handle difficult situations (cope). This can be determined at the initial interview with the child and parent, or caregiver, and provides baseline data for later comparison. Such knowledge of the child also allows a more accurate assessment of their pain experience.

I certainly think it's helpful.... You can build up a picture.... I think knowing a child previously means that you, and this is obviously if you've done an assessment with them and talked to them about ... past experiences of pain ... you know what they like to do to help if they're feeling sore. You know words that they might use ... those sorts of things.... [It] is helpful if you've had some experience looking after the child for knowing how they might deal with [their pain].

[You get to know] the whole child, the dynamics of the child, how the child has been coping, if they've been here for a few days or within a day I suppose you get a good idea of what the child is like but not really in the acute phase when they are sore. But after a wee while you do get to sort of assess the child. Also you get to talk to the parents. If they're usually a stoic child then that's a good key to how they're coping. If the child is usually not very good with pain or blood or something or is normally [an] uptight child or if the mother is saying something like 'There's no way my child would normally cope with this but she's coping really well.' Those are little key points [to note].

Knowing the words that children use to report their pain, will make the difference between the nurse realising that the child is in pain, or not. Similarly, knowing how a child usually reacts to pain and copes with it will help the nurse with subsequent

assessment and treatment of pain. It may also cue the nurse to particular strategies that might help the child cope better.

I knew this boy reasonably well, he had a chronic illness and spent quite a bit of time in hospital so I did know him reasonably well and he was post-operative.... I popped into the room expecting to see the boy that I usually knew and I went into his room and I thought 'Oh, he doesn't look so good.' He was lying ... rigid in the bed ... and his eyes were closed.... I had a quick look at his obs chart ... he was quite tachycardiac. He wasn't febrile. ... I looked at his treatment sheet ... and he had been having morphine increments.... I bent down [and] I said 'John it's Kim, I've come down [to help]. You're not looking your usual self this morning.' He opened his eyes and he just looked at me ... I got out my trusty Faces Scale, I said, "You don't have to say anything. You just point to the one you feel like." Well, he immediately pointed to Face 5, like the worst you can imagine. You don't have to be crying, I mean he was a boy that didn't ... cry. So I just knew 'Well OK he's just in a lot of pain.' [emphasis added]

Sometimes children report experiencing more severe pain than staff believe should be associated with a particular procedure or condition. In such cases, it is helpful if staff know the patient so that they can more readily reach an accurate assessment. For example, several nurses described the case of a 13 year old girl with abdominal pain who had attended both a private After Hours Medical Centre and an Accident and Emergency service at the public hospital on many occasions over a long period of time until eventually she was diagnosed with acute appendicitis and admitted to hospital for surgery. Several of the nurses reported that this girl had experienced great difficulty being believed by the medical staff and consequently she had gone to great lengths to convince staff that she was experiencing significant pain. This girl also experienced a number of serious complications, which required readmission and surgical treatment. According to some nurses and doctors, this girl was very anxious, hysterical and had a low pain tolerance. However, her primary nurse had developed quite a different view of this girl's pain experience and behaviour:

I've decided because I know her quite well because I'm her primary nurse and I've ... looked after her nearly every shift that she's actually quite stoic and she's actually in a whole lot of pain and that's what we're seeing rather than someone whose got a low tolerance to pain. I suppose it's always very relative for each person [but] she'll tend to under-report her pain a bit with that [rating scale].... So where it's reasonably useful for me because I think I know her quite well now, it's not that useful for other nurses [who don't know her so well] because if she

said her pain was at 1-2 you might think that was quite good but it was actually quite sore. Most of her pain is between 0-2 or 0-3. She's never reported it, well I haven't known her to report it at 5 [even when she was reporting severe pain] (emphasis added).

For some staff, it appeared to be difficult to accept this girl's reports about her pain experience because they felt she was exaggerating it. However, her primary nurse believed that s/he knew her well and recognised that her behaviour and manner of pain expression were the result of not being believed in the past, consequently s/he accepted that the girl was experiencing pain that warranted analgesia.

Knowing the child also enables the nurse to tailor her or his strategies for getting the child's cooperation during procedures. If the nurse fails to obtain the child's cooperation, this may add to the child's distress and prolong the time taken to carry out the procedure. Thus, spending time getting to know a child may save time in the longer term.

I guess I know this boy quite well and he gets quite [verbal] when he doesn't want something to happen. He wants to do a whole of things beforehand [He says things like] 'I'm not ready, I'm not ready, I'm not ready Mummy. I'm not getting up on the bed yet. I'm not ready yet.' And often [his] Mum is trying to hurry him along and so these are all things that let you know that he's not that thrilled about what is going to happen [...] A bit of procrastinating goes on.

[This] child that I'm thinking of was perhaps not very good at dealing with things that he's not used to [his usual response] is to panic and [...] become very anxious [...] He had to have dressings done regularly [which] was a very painful procedure for him. So we've changed it to his liking. We tried things like Entonox and morphine [but that wasn't enough]. He had a walkman and he liked to listen to the music [so I'd] do things like I'd have one bit of walkman [ear phone] in [my] ear and he'd have the other one in [his ear], so that was sort of a game. [I was] trying a bit of distraction. It helped. Yes, I think it definitely helped. It certainly wasn't a pain free procedure for him but it did help.

However, sometimes the nurse will have had less experience of looking after sick children or a particular child and will not yet 'know' them. The nurses expressed their uneasiness about 'not knowing a patient' and the implications this had for making an accurate assessment and appropriate interventions.

- Nurse: *I would need to also find out more about the source and quality of the pain [from the child] ... sometimes if you haven't looked after a child before ... there might be more nuances to the situation than you've cottoned onto already.*
- Interviewer: *Yes, it must be hard when you meet a child for the first time.*
- Nurse: *Yes, sometimes it can take half of a shift to really figure out what's going on. Which is a bit frustrating when you realise that perhaps you've been under medicating them for half a shift sometimes.*

Having some knowledge of the developmental characteristics of children's normal coping behaviours may assist the nurse until they develop personal knowledge of a particular child. One nurse described how s/he would tailor her/his approach to an adolescent.

The way in which you inform them would be different in that they get more information probably [and they] probably get a bit more technical, scientific explanation and [you] give them some choice, where possible, over how they would have their medication. I'd sort of give them some control over that.

Significance of knowing the patient

It takes time to form a relationship, win the child's trust and get to know something about them. In acute and emergency situations, the nurse will not have the luxury of time to develop in-depth knowledge of the patient. When the nurse does not know the child very well, this may lead to inaccurate assessment and result in unintentional under-medication. On the other hand, when the nurse does know, how the child usually reacts to stress and pain and how they usually cope, this allows her or him to assess the child's pain more accurately. Thus, *knowing the patient* is a very important aspect of the assessing process.

McGrath (1990) also discusses the importance of *knowing the patient* and says that the key to determining the reliability and validity of children's pain information is to evaluate the context in which children perceive their pain.

An understanding of their frame of reference for reporting pain, and of the factors that may influence their pain and their pain behaviours, enables health professionals to accurately interpret children's descriptions of their pain (McGrath, 1990, p. 67).

Knowing what a child is like pain free and how they usually cope with pain are both crucial for forming an accurate assessment. Knowing what the child is normally like also moderates prejudicial thought when observing a child who is very distressed by their pain, and whose pain expression appears excessive to the nurse. Such information can be obtained at the initial admission assessment from either the child or parent, or as soon as possible after that. Another source of information, that will assist nurses in their assessment, are studies, which have investigated the developmental characteristics of infant and children's pain expression. For example, Wong's (1995) paediatric nursing text provides a useful table, which summarises this research. The nurse who knows the developmental characteristics of children's responses to pain will presumably find this useful when first meeting a child experiencing pain until s/he can develop particular knowledge of that child.

Other authors who discuss the management of pain in children (eg. Betz, Hunsberger & Wright, 1994; McCaffery & Beebe, 1994; Wong, 1995) do not discuss knowing the patient as part of the assessment of pain. Jenny and Logan (1992), however, in their grounded theory study of expert nursing practice during ventilator weaning of adult patients found that the concept *knowing the patient* was very significant. *The concept signified a cognitive and relational process by which the study participants determined salient aspects of a particular patient situation, while at the same time demonstrating their credibility and eliciting patient trust* (Jenny & Logan, 1992, p. 254).

According to Jenny and Logan (1992) *knowing the patient* is not only an important aspect of clinical knowledge, it has long been a valued aspect of humanistic nursing practice. They further point out that it has been associated with the concept of individualized care which in the literature has been described as a patient's right, a hallmark of professional nursing practice, and an ingredient of quality care.

In her qualitative study of nursing practice Benner showed that *experienced nurses reach an understanding of a person's experience with an illness, and hence their response to it, not through abstract labelling such as nursing diagnosis, but rather through knowing the particular patient* (Benner, Tanner & Chesla, 1996, p. 1). Nurses in Benner's study described detailed knowledge about particular patient's patterns, responses, physical functioning and body topology: *how she moves, what positions are*

comfortable, how her wound looks, how the patient eats, how she tolerates being off a ventilator, how infants tolerate feedings and respond to comfort measures, what rituals soothe and reassure, what timing of care works best (Benner, Tanner & Chesla, 1996, p. 22). The nurses also talked about their uneasiness about ‘not knowing the patient’ and about making what they termed ‘decisions from a distance.’ According to Benner, Tanner and Chesla, these practical maxims suggest that nurses prefer engaged moral and clinical reasoning based on in-depth knowledge of the patient and family as well as the patient’s responsiveness to treatment. Thus, knowing your patient is *the nurse’s basis for particularising care* (Benner, Tanner, & Chesla. 1996, p. 24) and is central to good clinical judgment and practice.

This brief review of the literature suggests that *knowing the patient* is a very important aspect of nurse’s clinical practice and judgment. *Knowing the patient* enables nurses to particularise, or individualise, the way they manage a patient’s care including relief of pain.

Observing pain behaviours

Nurses also observe children’s behaviour for signs of pain or distress, such as how the child is lying in the bed (e.g. relaxed or stiff, restless or unmoving), their facial expression (e.g. relaxed or tense, smiling or grimacing), what they are doing (e.g. agitated, restless, playing, reading, watching TV, awake, drowsy, asleep), and their emotional state (e.g. crying, distressed, calm, happy, withdrawn). The nurses described this aspect of their assessing process as follows:

[I look at their body], *looking at the posture, how they’re moving, the facial expression, whether they’re eating or drinking [...] and looking [at] how they are lying. For example, the girl with multiple problems that we were talking about before, she lay perfectly still and perfectly stiffly for days and days.*

He wasn’t moving freely about the bed and facially he didn’t look all that distressed but he only had limited movement of his toes.

Nurse: *I use the body language of the child, whether they’re moving or not, how they’re breathing, what their recordings are like ... and also I take into account what’s wrong with them...*

Interviewer: *What about their vital signs, are they any help in your pain assessment?*

Nurse: *Oh a big help, yes ... if they're sore their resps go up, their pulse goes up, they're great signs.*

You go to do something to her and she cries and shakes and says "Don't do it, don't do it!" and gets very tense. She'll tend to lie in the bed as stiff as a board and not move very much.

I had an incident yesterday where a girl who had just had a chest drain put in ... she was in severe pain ... it was really difficult to manage her pain. She was a teenage girl and [...] she's had recent major surgery, which she also found very painful. She seems to now be very verbal with her pain and become very distressed and quite hysterical when she is in pain [...] She was just weeping with the pain and she said 'Its just so sore.'

However, sometimes pain behaviours evoke negative responses from parents and staff.

She screamed and said "Something's just burst inside me" and her appendix had perforated in the Emergency Department.[...] [Her] mother was very distressed by it and she was also, like us, very confused about what was going on. On the one hand she had her daughter who was in terrible, terrible distress and she could see this young woman who was behaving in a way that she didn't find acceptable. [Her daughter was] screaming and squealing and crying in a way that she was very concerned about and was not typical of her daughter. And she said a number of times to us "It's just not like her. She's not normally like this, its like somebody's put a different girl there. Its like she's gone mad or something." And she was torn between feeling terribly concerned for her daughter and feeling sort of ashamed of her behaviour that she interpreted as being 'bad' behaviour.

One of the most valuable clues to pain is a child's behaviour after administration of an analgesic.

Well I guess it still hurt [to have the chest drain removed]. She didn't cry out so I guess the morphine was some use. It didn't take the pain away altogether but I guess she felt reasonably comfortable because she recovered very quickly, she was quite relaxed, she was able to sit up and have her nightie changed and things like that and have a drink. So I guess if the morphine hadn't worked very well and if she'd experienced a great deal of pain she would still have been lying in the bed unable to move

According to one nurse, very young children who are distressed and cannot be calmed are probably still in pain.

If I find the child can't be diverted, can't be placated at all you can't sort of say 'Wait a wee bit longer, it's not due' and they can't be calmed down [you] know they're still in pain.

Observations about the child's behaviour and facial expression are particularly important if the child lacks the necessary language skills to communicate verbally, or use a rating scale. In such cases the nurses in this study tended to ask the parent or caregiver for their assessment of the child's pain, as well.

Probably the most difficult group of children to assess in terms of the pain are the younger children [who are] preverbal [...] that can be quite difficult [...] Then you can go on the facial expressions and the cry and their functional capability [...] and whether the parent thinks the child [is in pain] or not because sometimes [it] can be hard to assess whether their behaviour is associated with a nurse walking into the room [or whether they are in pain] They [the parents] are the expert on their child.

Nurses learn from experience what pain behaviour characterises particular ages and developmental levels but also recognise that children are individual in their response.

You may be able in some instances [...] to predict, depending on their age what [...] some of the behaviours [are that] you may expect to see. But I think [you also have to remember] that everyone's got their differences.

Children's pain behaviours can be quite disruptive in a hospital ward and upsetting for other children as well as parents and staff.

A boy, I think he was about 11 [who] had an Ilizerov on his legs, a big frame with lots of pins going into his tibia and one on his femur on the other leg. He had to have his pin sites cleaned every day and found it very uncomfortable. [It was quite] nerve wracking [because] he would cry and scream, you know scream really loud [so that] he could be heard all over the ward.

The situation was getting a little bit out of control where she was becoming very verbal, her mother was tearful, all the other kids in the room were petrified that she was about to expire [...] She was panicking, it was like a panic attack. [...] It's [usually] more of a problem with young [er] children who really become extremely uncooperative and terribly upset with pain.

I think her mother was a bit frightened as well because she [her daughter] was breathing very very fast and going 'Oh, Oh, I can't breathe, I can't breathe and getting really worked up and it was quite scary really ... But it wasn't a physical problem with her breathing. She was well saturated [oxygenated] and she had

good air entry [...] that was [just] her being really [distressed]... with pain and anxiety. I think the anxiety was every bit as much of a problem as the pain.

In summary, the nurses in this study noted the child's behaviour and emotional state as part of their assessment procedures to determine pain. As none of the tools, which have been developed for assessing pain behaviours in children, were available in the unit there was no agreed format for assessing the children's pain behaviours among the nursing staff.

Significance and issues associated with observing patient pain behaviours

If the child is unable, for any reason, to verbally report their pain then observing their behaviour becomes crucial for determining pain. McCaffery and Beebe (1994) recommend including observations of non-verbal behaviour, such as crying or groaning, particularly for those children who cannot communicate verbally as part of a multidimensional approach to pain assessment in children. Wong (1995) also contends that observing pain behaviour is very important as part of assessment and such observation may reveal the source or location of the pain. Depending on the type and location of pain, children may display behaviours that indicate localised pain, *such as pulling the ears for ear pain; rolling the head from side to side for head and ear pain; lying on the side with legs flexed for abdominal pain; limping for leg or foot pain; and refusing to move a body part* (Wong, 1995 p. 1087).

Several behavioural scales have been developed to objectively evaluate children's overt responses to acute pain produced by invasive medical procedures (eg. Observational Scale of Behavioural Distress (OSBD); Jay, Ozolins, Elliot, & Caldwell, 1983) and to assess postoperative pain (eg. Children's Hospital of Eastern Ontario (CHEOPS; P.J..McGrath, et al., 1985 cited in P.A.McGrath, 1990, p. 53)¹. The reliability and validity of the OSBD for assessing children's distress behaviour has been established (P.A. McGrath, 1990, p. 53). However, Patricia McGrath² points out that children's overt behaviours do not always constitute direct expressions of the intensity or quality of their pain.

¹ Original source not available in New Zealand.

² To avoid confusion between these two authors with the same surname and first initial, their first names are included.

Caution must be used in inferring children's pain solely from their pain-inducing situation. Children's behaviours in a medical or dental situation are influenced by the environmental cues (the sights and sounds associated with invasive procedures), familial factors (parental responses and expectations), emotional factors (fear, anxiety, sadness), and situational factors (children's expectations, their [sense of] control. Parents exert a strong modifying influence on children's behaviours, particularly when children have a chronic or life-threatening disease. Parents may have difficulty adjusting to the illness and necessary medical treatments, with the result that they may place excessive demands on their children to be compliant and cope like 'little adults' during invasive procedures. Children's natural responses (either verbal or nonverbal expressions of their emotions) may be restricted in stressful situations, so that their overt distress behaviours increase. [Their] behaviours may then reflect their underlying emotion about a disease or medical procedure, rather than the strength or quality of the pain evoked by the procedure (P.A. McGrath, 1990, p. 54-55).

Thus, children's distress behaviours are not passive reflections of their pain. Instead, their behaviours are complicated responses to the noxious stimulus and the context in which it is experienced.

Betz, Hunsberger and Wright (1994) and Wong (1995) provide guidelines, in their respective textbooks, designating characteristic behavioural responses to pain for children of different ages that reflect the available research. However, Betz, Hunsberger and Wright (1994) raise some concerns about the usefulness of these behavioural indicators. One concern is that it can be difficult to distinguish pain behaviours from coping strategies. They also make the point that pain behaviours are to some extent a learned response; the child learns the kinds of behaviour that attract attention and get them help. Consequently, infants and young children often display atypical pain behaviours. *More recognisable pain behaviours develop as children learn to reproduce actions that result in pain relief and in the desired response from caregivers (p. 891).* The authors propose that if nurses underestimate the adaptability of infants and young children to a painful event then behavioural pain scales will mislead them.

For example, some pain scales suggest severe pain is accompanied by loud crying and thrashing behaviour. Whereas this may be a typical response to short term procedural pain, it rarely applies to pain of longer duration. Even young infants learn to lie quietly when crying and their movements exacerbate pain. Therefore, a more appropriate guide for assessment would be to note the ways in which responses deviate from well behaviours. Using this parameter, an exaggerated lack of movement following surgery would be suspect of pain rather than assessed as 'resting quietly.' (Betz, Hunsberger & Wright, 1994, p. 891).

Although this brief review of the literature suggests that *observing pain behaviour* can be a useful adjunct to other assessment strategies, concerns were also raised. Children adapt to painful events and sometimes exhibit atypical behaviours, both of which can make it more difficult to determine the presence and degree of pain experienced by the child.

Using pain rating scales

As well as asking children to describe their pain verbally, the nurses also usually asked the children to rate their pain using one of two pain-rating scales that were available in the unit studied. The nurses termed one 'The Faces Scale' (0-5 scale) and the other 'The Pain Thermometer' (0-10 scale). A copy of those used in this unit is included below³.

Wong - Baker Faces Pain Rating Scale (*Paediatric Nursing 14 (1) 9-17 Feb 1988*)

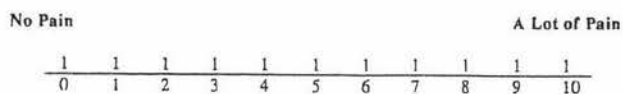


Explain to the child that each face is for a person who feels happy because he has no pain (hurt) or sad because he has some or a lot of pain.

- Face 0 is very happy because he doesn't hurt at all
- Face 1 hurts just a little
- Face 2 hurts a little bit more
- Face 3 hurts even more
- Face 4 hurts a whole lot
- Face 5 hurts as much as you can imagine (although you don't have to be crying to feel this bad)

Recommended for children age 3 years and older.

Numeric Scale for Pain Assessment



Ask the child to choose a number that best describes their own pain.

I made my assessment by just asking him and by using the Faces Pain Rating Scale [a] 1-5 scale. I think the morning nurse had been using a 1-10 scale so I sort of stuck to what the morning nurse had been using as a pain scale.... He rated his pain about 6.

³ Reference not supplied to preserve anonymity of unit.

I mostly use the rating scale, the 0 to 5 [Faces] one, not so much with older children but anyone from 10 and under. I would probably use the Faces rating scale just to help [my assessment] and I try to explain [what its all about] with some preoperative teaching. I carry one around in my little bag [...] it's just very handy to have it and parents and children relate to it very well. They're always very interested and it always amazes me how quite young children even two and a half or three year olds can point to the face they think [depicts how they are] feeling. It works; you know that they are reporting their actual pain

We have a Pain Thermometer which is a sliding scale of 1-10 and the Faces [scale]. So I'd use the Faces scale of 1 to 5. The scale of 1 to 5 is a lot more effective than 1 to 10 because it gets a bit bamboozling when you've got ten different choices. It works better [with] five. We [also] had a rather fabulous stuffed toy, which was a frog that had a tongue that unfurled that had the Faces chart on the tongue [that a student nurse made]. The children were so mesmerised by the toy and the unfurling tongue [that they] found it difficult to concentrate on choosing a face ... but it was a really good tool. [...] Often you just use a verbal scale, you say "If one is 'I feel good and I'd like to go and play' and number two is 'I'm feeling a bit sick and I'm feeling a bit sore and I'd like to lie in bed' and number three is 'I'm so sore' and number four is I'm in agony, I'm dying and I can't stand this' which one would you be?

I always have my pain faces scale in my little pouch [wears a bun bag] so I got that out. I didn't know whether anyone had had time to explain that to him preoperatively so I gave him a little run down on what my happy and sad faces were about. And I thought 'This will let me know [...] how he's feeling.' He was whispering so I couldn't hear him very well and he tried really hard and he did in fact point to face naught, which was the 'No pain.'

I do like the Faces Scale. I think it is a pretty universal one and it seems to cross the age groups. [...] We actually have got a Thermometer [scale] which I'll use on some of the older children in case they think its a bit babyish using the [Faces scale] But most kids tend not to mind and I think its a pretty good one to use and its great that I can carry it round with me.

Most of the nurses reported that the Faces Scale worked best with younger children and that the Thermometer Scale was best used with older children, although they did not explain what actual age ranges they meant. It seems reasonable to suppose that the Faces Scale will have greater appeal for younger children than older children who may find it less appropriate for their age.

I find the little ones respond beautifully to [the Faces scale], the middle ones are a bit shy and the older ones can tell me [...][We also have] a Thermometer scale,

that's used with older ones. I think that's better than the smiley face [scale] because I think perhaps the older ones think the smiley face is a bit silly, a bit babyish

[I feel] that if I show my Faces scale to a big 14-year-old lad he might think this is a bit babyish. But in fact I think its more [...] me thinking they might think that. I haven't had an older child say 'I'm not using that, that's babyish.' [...] It does seem to be something you can use with a 3 year old or a 13 year old.

The nurses reported that a few older children misused the rating scales by claiming to be in more pain than they really were, and these children joked about getting some morphine.

We get the odd comment from the thirteen year olds 'Oh a bit of morphine today would be really good' and here's the pain scale 'Oh I'm definitely that' and point to the worst face.... You have to be aware of who you show the [faces] pain scale to. [Otherwise] it's a wonderful thing (emphasis added).

Children with genuine pain also sometimes joked about 'getting high.'

We had a teenage boy the other day who wanted to know 'Would it make him high?' I laughed and said 'If you're lucky.' He said 'This is going to make me high?' and I said 'No, that's not exactly what it really does [it will relieve the pain]. He was a bit disappointed but [also] relieved to have the analgesic because he was really sore.

However, the nurses reported that most children used the rating scales appropriately. I asked the nurses how well the pain rating scales worked with non-European children and most reported that they had had trouble with it.

Nurse: *We have actually [had difficulty using rating scales with non-European children]. Its quite difficult to initially explain it, like you really need a translator to say this is what this means. But once you've got that sorted out [...] then that's fine. If they don't understand a single word after that they're still able to point to which one.*

Interviewer: *So provided you get an interpreter to explain...*

Nurse: *Yes, even if it's a family friend or a brother or sister or someone like that just to initially say what exactly it is they're looking at.*

One nurse had used the Faces Pain Rating Scale with a Somalian boy whose pain rating was consistent with the level of pain he described verbally.

I worked with a little Somalian boy [...] and he loved the face thing. He would point to the smile first, but then he'd point to the one he really felt. I think [what] he was really trying to say was he'd like to be there [the smiley face representing 'no pain'] but this is where I'm at.

However, it was not always well understood by other non-European children. For example, another nurse found that it was difficult to assess an Indian child's pain even though she spoke and appeared to understand English very well.

Nurse: *It can be quite difficult. Just recently [I] looked after a little Indian girl and I did find that assessing her pain was quite difficult. I don't know whether it was [a cultural problem]. She has lived in New Zealand most of her life and I think she probably wouldn't remember living in India because she was brought out here as a young baby. I don't know particularly that it was a cultural thing that [made] it difficult to assess her pain. She certainly didn't respond so well to the Faces Scale. But then [...] not all children are going to cooperate with your pain assessment. They're just not going to be interested. So it doesn't always [work]. It's not always as wonderful as you might want it to be.*

Interviewer: *So it wasn't a language problem?*

Nurse: *It wasn't a language thing, no. I'm just not quite sure ... I never did quite know what the [difficulty was] She was actually a very timid, frightened little girl [who] was really only comfortable when [her] Mum was close by. I thought that pain assessment with her was actually quite difficult.*

Interviewer: *So if she wasn't able to tell you in terms of using the Faces rating scale, how did you decide?*

Nurse: *A lot of it was [based] on her general mood and demeanour at the time. I talked to [her] Mum about this [...] She was very good at taking medicine, that wasn't a problem. So I did rely on her mother a lot. [Her mother] would ask her how she was feeling and I think she was quite honest with [her] Mum about how she was feeling.*

Interviewer: *How old was she?*

Nurse: *She was four [...] and she spoke English [...] I never heard her speaking anything but English even with her mother. They certainly all spoke English. I didn't hear them speaking any other language.*

The nurse was unable to determine what the difficulty was, and resorted to asking the mother how much pain her daughter was experiencing. Another nurse had difficulty

using the Faces Pain Scale with a Japanese high school girl who spoke little English, and when the nurses tried to mime the meaning the girl thought it was very funny:

We had a Japanese school girl in a couple of months ago who injured herself while over here on a school trip and she didn't speak any English at all ... She was a teenage girl, and she thought it was really very funny that we were pulling all these faces... There was no interpreter available that day so we just had to ... point to the ... sad face and clutch your abdomen and groan and carry on. She soon got the idea of it, ... I think. ... She was a little bit hesitant to use it [Faces Rating Scale] ... She didn't quite get it but I think she understood what we trying to do [the miming].

In addition, the nurses were concerned about how well some European children understood the meaning and use of the Faces Pain Rating Scale.

Some children have difficulty with understanding the symbolism of the Faces Scale ... like, 'What does it mean?' and you know they might think that number 5 meant you were angry because it was sort of a scrunched up face and number 1 might mean you were 'being a good girl' sort of thing. So that might confuse [their response] Its a case of individualising it to their age and their understanding.

Interviewer: *Because, I just wondered for a child who doesn't speak English it would be hard to explain to them what those faces are. It might be perceived by them more as whether 'I feel happy' or 'sad' which isn't the same thing as feeling 'sore'*

Nurse: *Yes, and that's always the risk with using it with anyone because it could, well it might measure sadness or distress or fear or separation anxiety or just about anything else.*

At the follow-up interview this nurse said our discussion about the meanings which children might attach to the Faces Pain Rating Scale had led her/him to think more about this, and possible misconceptions, so that s/he now used more pain specific language when explaining its use to a child.

After you were talking [to me] about the Faces Scale I've been thinking about that more and when I've been showing people the Faces Scale trying to be very specific about saying 'Can you look at the faces and point to which one shows how much it hurts or how much your tummy cut hurts' to try and get away from that feeling of 'Do you feel happy or sad? Sad [perhaps] because mum's not here, or something like that.

Some nurses also recognised the importance of using valid and reliable rating scales.

There has to be a standard [...] The Faces rating scale has to have 0 - 1-2-3-4-5; you can't sort of decide to make up your own numbers [scale]. That has to be standard.

Significance and issues related to use of pain rating scales

Next to asking the child directly, use of a rating scale to determine pain intensity in children is the most reliable method. The types of scales used in the unit studied were a horizontal numerical scale that the nurses called the 'Thermometer Scale,' the 'Faces Scale' (Wong/Baker, 1988) and a verbal zero to ten scale. The nurses in this study believed that the Faces scale worked best with younger children, although older children, particularly teenagers, may find it inappropriate for their age and may prefer the Thermometer Scale or a verbal scale. The nurses reported some difficulty using the Faces Scale with both English speaking and non-English speaking children. The reliability of some children's pain ratings was questionable which meant that the nurses had to resort to using other assessment strategies.

How reliably a child can use a thermometer or any other type of numerical scale will depend on their ability to understand and use numbers, prioritise and recall numbers, all of which may influence their response. As mentioned earlier, the nurses in this study believed that some children tended to rate their pain quite low despite other indicators, which suggested more intense pain. This raises three questions: (1) whether the facial scale values they were using had been assigned from an adult or child perspective, that is, whether validity had been established with children; (2) whether the child had been trained in the use of the rating scale and (3) whether they were confused by the different scales being used by different staff. The nurses were unable to name the source of the Faces Pain Scale except that someone brought it back from the US after attending a conference there. However, when a copy of the unit's Paediatric Nursing Handbook (1994) was reviewed it was found that the 'Faces' scale they were using was that developed by Wong and Baker (1988). The scale termed the 'Thermometer Scale' by the nurses in this study, is a horizontal numerical scale with zero representing 'No pain' and ten 'Worst pain' and is quite different in appearance from the Pain Thermometer

described by Patricia McGrath (1990) which has a perpendicular 0-10 scale and is scarlet with white writing. The numeric scale, used in the unit studied, is one of several illustrated in Wong (1995) and its source is not stated. A verbal scale can be used with children old enough to think in more abstract terms that can respond to the question "How much pain do you have if zero is no pain and ten is the worst possible pain?" Tesler (1991) reported that this scale was valid and reliable with children 8 years of age and older. The Wong and Baker Faces Pain Scale is available free or may be copied. Whereas, other scales such as the Oucher developed by Judith Beyer (1984) is available for a fee. Therefore, which rating scales nurses use is likely to be influenced by knowledge of their existence as well as their availability and cost.

The nurses reported some concerns about cross-cultural reliability when using the 'Faces' scale. Translations of instructions for use of the Wong/Baker Pain Rating Scale are available in Spanish, French, Italian and Portuguese (Wong, 1995, p. 1944). However, in New Zealand instructions in languages such as Maori, Samoan, Chinese, and Vietnamese are needed.

When I asked the nurses how they taught the children to use the rating scales it appeared that they explained their use to the child only in terms of rating the present pain experience, which is consistent with the instructions on the Wong-Baker Faces Pain Rating Scale in the unit handbook. However, elsewhere Wong (1995) proposes that ideally children should be taught how to use the scale before pain occurs, such as pre-operatively. She also recommends using the same scale with children to avoid confusing them with different instructions and to use it only for assessing pain (eg. not as a general measure of the child's feelings). Consequently, it is a concern that nurses in this study reported that a variety of rating scales was used for a particular child.

McCaffery and Beebe (1994), provide guidelines for using any pain rating scale, which are more detailed. The guidelines include finding out what words the child, uses for pain, and only using a numerical scale if the child can count to the highest number on the scale. They also recommend that the child be taught to differentiate between pain experiences of different severity by recalling past painful experiences, and using the

scale to rate these. In this way, the child is taught how to use the tool and can then rate their present pain experience reliably.

All of these points raise validity, reliability and educational issues related to the use of assessment tools, such as the Faces Pain Rating Scale. Being consistent about the type of rating scale used for a particular child would ensure inter-rater reliability and validity of the child's pain rating. However, when focused questions about these issues were asked at the second interview it became clear that these nurses had not had any training in the use of these assessment tools, they did not know what type of scale they were using, who developed it, whether its validity and reliability had been established and how to ensure that a child used an assessment tool reliably.

Thus, using *pain-rating scales* can be a reliable means of assessing pain intensity in children, providing a valid and reliable tool is used that is appropriate for the age and development of the child. Problems can arise when nurses lack training in the use of such tools which in turn will probably mean that children are not taught how to use a particular scale reliably or they are offered more than one type of scale which is confusing for them.

Consulting others

When a child is too young, or incapacitated, to either verbalise or rate their pain nurses tend to ask the child's parents for their opinion. The nurses in this study all said they frequently consulted the parents and that parents varied as to whether they would spontaneously tell the nurse when their child was in pain.

I use the parent. I use the parents a lot.... The parents are my greatest resource [I ask them] 'How do you feel about your child?' 'Are you worried about him?' Parents just throw it all out, they tell you straight up and they know their child well. [They might say] 'I've never seen her like this.' or 'This is not my child.' and things like that.

Talking to parents about how they feel their child is, that's really important too.

We [...] use the parents as a support and seek [their] advice about how they normally manage [the child's fears and pain] at home [...] and try to deal with it along the same lines.

The parents often can understand the child better than you can. The child will tell the parents what they won't tell us [...] They're the ones that pull you up and say 'My child is sore.' And that helps, its a great help, [I] couldn't do without them.

I usually ask parents preoperatively about how their children react to pain.

Sometimes parents like to tell you that their child's sore and give the analgesia and report back to you whether they think its worked or not. Other parents like to share the pain assessment saying 'My child's crying and I think its because they're sore but what do you think?' [...] Other parents won't come out and tell you that their child is in pain. They'll just sit quietly in the room beside [their child] until you actually come in. {You} come in and see that their child's sore and you might question them but they don't offer very much about what they think. So its much more up to you to be in there doing it [assessing].

Some of the nurses suggested that some parents sometimes 'over-react' to their child's pain, that is, they are very anxious themselves and this may affect the parents' ability to provide objective information.

The biggest thing is to learn how to read your parents and your child and put them together as a unit.... Sometimes parents are worse than the children are.... So yes you do have to be a bit wary of that. So if I've got a very sick child and I've got parents wringing their hands and absolutely distraught themselves I wouldn't involve them.

It can range from a parent that niggles at you all the time saying 'My child's really sore.' And you look at the child and the child's looking okay and of course you've got to have time to assess that. The other danger is the parent not saying anything, not wanting to be a bother and you're seeing the child looking upset or there's a low conversation in the corner of the room where the parent's trying to console the child herself or himself and they're not bothering you.

One of the nurses also consulted parents about the child's reliability in reporting pain:

Usually I'll try to liaise with the parents ... I'll just say 'OK they say they're sore ... do they normally report pain? Try and establish if they are a reliable reporter of pain (nurse's emphasis).

Nurses also consult each other about assessing or managing pain, particularly when dealing with complex or unusual pain problems.

It takes a lot of assessment and you have to be very careful before you say that child isn't in pain. Plus the handover time [outgoing shift reporting to incoming

shift of nurses] *passing on to other nurses what you think, getting other people's opinions.*

One of the nurses described how s/he consulted another nurse who had more orthopaedic experience. The child s/he was caring for was a boy of about 12 years of age, with a lower leg fracture, who was complaining of lower leg pain despite analgesia.

It was 3 or 4 days down the track but he was requiring a lot more analgesia than you'd expect and his pain seemed a lot worse than you'd expect.... In the end I... consulted another colleague who had been looking after this patient and who had a lot more orthopaedic experience than me and he actually ripped the plaster right open and sure enough he had a plaster blister under there and it had been causing the pain and so we got him sent back down to the orthopaedic outpatient clinic and got a new plaster with a window over where the blister was.

In summary, when these nurses experienced difficulty assessing or identifying the cause of a child's pain, they consulted parents and/or nurses that are more experienced.

Although the nurses thought that parents could help them assess pain, particularly in the case of very young children, they also expressed the concern that at times some parents are too upset, or emotional, to be objective.

Significance and issues related to consulting others

Consultation with parents can provide helpful information that aids assessment of the child; however, it should not be a substitute for asking the child directly. Because, as McGrath (1990) points out, different people interpret behaviour differently so that behaviours that represent pain to one individual may represent anxiety or emotional arousal to another. For example, Manne, Jacobsen and Redd (1992) compared child, parent and nurse ratings of acute paediatric pain and distress during venipuncture. They found that parents ratings of their child's pain and distress during venipuncture were strongly influenced by their pre-procedural expectations of how much pain the child would experience and on their own anxiety. They suggest that parents may be focusing on their own feelings and expectations when evaluating their child's pain during procedures and less on the child's actual distress and pain behaviour during the procedure. Thus, they concluded that parent ratings may not provide a good indication of the amount of actual distress or the child's pain experience. Consequently, they

caution that parent ratings should not be viewed as a substitute for child self-report, because they appear to be influenced by the parent's psychological state during the procedure. Nurse ratings (particularly experienced paediatric nurses) of acute pain may most closely approximate objective assessment of pain and distress behaviours. Instead, since pain is a subjective perception, self-report should be relied upon as the "gold standard" for assessing pain (McGrath, P.A. 1987) and even very young children are able to describe their pain (Lollar et al. 1982; Ross & Ross, 1984).

Benner's (1984) work supports the notion of nurses consulting colleagues that are more experienced when they have trouble. One of the implications of her 'Novice to Expert' model of skill acquisition applied to nursing is, that expert nurses can act as consultants for other nurses. According to Benner, nurses with a background of experience with similar patients develop specialised knowledge and we can a lot learn from the wisdom embedded in the practice of expert nurses. *Expert clinicians.... can be particularly effective in making a case for further medical evaluation when they detect early clinical changes* (Benner, 1984, p. 35).

Thus, as this brief review of the literature suggests *consulting others* can be helpful particularly when children have difficulty telling the nurse about their pain or their pain seems unusual.

Considering pain norms

It was shown in the previous section that sometimes nurses have expectations about a child's pain experience related to the type of procedure they have had, and time since surgery. For example, one nurse indicated that s/he had expectations about the kind and amount of pain a child would experience related to particular medical or surgical conditions.

Depending on the operation they had or what condition they've got you estimate what sort of trajectory the pain will [follow].

And also I take into account what's wrong with them. I mean if its a sutured finger or something, not minor, but something not quite as deep pained then you'll notice the child just lying there holding their hand compared to the child in the next bed

playing with their hand. [I make] some comparisons and [I have] some expectations of how I feel the child should be.

The child's pain will reduce over the next while depending on the operation they had or what condition they've got you estimate what sort of trajectory the pain will [follow].

With children they seem to 'turn the corner' quite quickly in terms of their postoperative pain. One day they'd be sore and the next day or even sometimes in a matter of a few hours they seem to 'turn the corner' and be able to cope with a lot less analgesia.

Similarly, a nurse had expectations about the amount of pain that a boy should be experiencing several days after an orthopaedic procedure.

It was 3 or 4 days down the track but he was requiring a lot more analgesia than you'd expect and his pain seemed a lot worse than you'd expect.... So we do get situations like that where the pain doesn't seem to match what you would normally expect on that sort of trajectory.

Another nurse was concerned about unusual pain experienced by another boy.

My concern was also that in relation to the procedure [he had had] his pain did seem quite severe. I said to the nurse "Has the surgical team been down to see John? Is everything alright with the tube?" There's not usually too many complications following [insertion of a gastrostomy tube] but there's always the odd thing you can perforate [such as] the bowel. I was a bit worried that maybe something was going on.

In summary, nurses may develop expectations about patients' recovery time and pain experience based on their experience of many similar clinical cases. When patients do not conform to these expectations the nurse may then need to revise her or his expectations or investigate whether the patient is experiencing complications. Some of the nurses in this study demonstrated expectations about children's recovery time and pain experience during and following medical and surgical procedures which they considered when assessing children and deciding whether they needed analgesia, medical review or something else.

Significance and issues related to the concept of pain norms

Other researchers have also found that health professionals develop expectations about treatment and recovery in patients. For example, Roth (1963) reporting on his hospital

study of patients with tuberculosis found that both patients and physicians tended to develop expectations about how long given aspects of treatment should take. He termed these expectations 'timetables' and argued that the development of these timetable norms helped the patients anticipate their future, whereas for the physicians it helped them make reasonable decisions in a highly uncertain situation. Sometimes, he said, the timetables of the patients and physicians conflict and the two must bargain with one another to resolve their differences.

Roth proposed that the reason for developing these norms was that people do not like uncertainty and will attempt to structure it in some way.

One way to structure uncertainty is to structure the time period through which uncertain events occur. Such a structure must usually be developed from information gained from the experience of others who have gone or are going through the same series of events. As a result of such comparisons, norms develop for entire groups about when certain events may be expected to occur. When many people go through the same series of events, we speak of this as a career and of the sequence and timing of events as their career timetable. (Roth 1963, p. 93).

I suggest that nurses, too, develop norms about pain experience and recovery timetables from medical and surgical procedures. Pain norms would define how people 'ought' to behave and the nature and intensity of the pain they 'ought' to experience during and following particular medical or nursing procedures. Like the physicians in Roth's study, nurses may use such norms to help them make reasonable decisions in what would otherwise be a highly uncertain situation, such as a child's postoperative career.

The purpose of norms, according to Robertson (1987), is to ensure that social life proceeds smoothly and this function of norms is so important that there is always strong social pressure to conform. When children do not conform to these pain norms it may be quite disruptive to the organisation of the ward, particularly if they engage in loud crying or screaming and require more nursing time. Nurses may consult each other and enlist parental support in an effort to resolve the problem and restore order. The nurses in this study also described how they played games with a particular child as they carried out a dressing procedure in an effort to distract him and prevent him screaming.

Benner (1984) proposes another way of viewing the nurses' attention to typical patient pain behaviour and recovery. According to Benner the proficient nurse has learned from experience what typical events to expect in a given situation and how plans need to be modified in response to these events.

The proficient nurse can recognise when the expected normal picture does not materialise. This holistic understanding improves the proficient nurse's decision making, it becomes less laboured because the nurse now has a perspective on which of the many existing attributes and aspects present are the important ones. [...] The proficient nurse uses maxims as guides, but a deep understanding of the situation is required before a maxim can be used [...] The maxim provides direction as to what must be taken into consideration. Maxims reflect nuances of the situation. (Benner, 1984, p. 28).

The nurses in the two excerpts cited earlier both recognised that their respective patient was experiencing unusual pain that did not fit what was expected following the type of procedure each had had. In the first case the nurse lacked experience of the orthopaedic problem but consulted a more experienced nurse who accurately identified the problem. The second nurse was able to determine the salient aspects of John's situation and intervene appropriately.

Thus, it appears that over time and with vast experience of similar cases nurses may tend to develop perspectives on typical patient behaviour and recovery from common medical and surgical procedures. Amongst these appears to be a perspective on pain norms related to particular procedures, for example, appendicectomy and tonsillectomy. The use of norms goes against the nursing ideal of individualised care but does appear to facilitate decision-making. Several authors supported the notion of norms developing and being used by health professionals as part of their decision-making skills.

Problem-solving complex pain situations

Nurses also consider pain and treatment norms when faced with puzzling clinical situations. In this case the nurse believed the patient response was atypical and s/he considered several tentative hypotheses which s/he got doctors to investigate.

I gave her all the oral analgesia that she had been charted. My initial concern was that there was a problem with the [chest] drain because I felt that it shouldn't

be that sore. So I got her reviewed by the surgical house surgeon (junior doctor) just to check that her drain was okay, that she was okay and that it wasn't a physical problem causing excessive pain. I taped her drain so it couldn't pull and that helped quite a bit. Once it was ascertained that there was not a physical problem with the drain I got the paediatric house surgeon to review her pain management. He actually charted a non-steroidal anti-inflammatory which I gave her in soluble form which worked quite quickly and helped her pain a lot [...] and the other thing was she did relax a little bit after the doctor had seen her [...] so I think a little bit of his reassurance helped as well.

At other times, when the child's pain experience did not match the nurses' expectations, they considered various possibilities and tried to discover the reason for more severe or different pain. For example, if the patient's pain location shifted this made assessment more difficult.

Nurse: *The child with the fractured tib [tibia] and fib [fibula] ... we'd given him pain relief.... He had the PCA and then he developed chest pain on the right side and it was ... it was obviously pain for him and it was scary for him.... So you know I thought about PE [pulmonary embolus] and post-operative pneumonia ... both of those.... Well, post-operative pneumonia seemed particularly unlikely because his chest was clear he was afebrile and the PE ... I guess there was a possibility in that he had a compound fracture but they're not particularly common in young children.*

Interviewer: *Do you mean a fat embolus?*

Nurse: *Yes. But he was obviously also an anxious child. His mother was there and his mother was fairly anxious about his [allergic] reactions to [earlier] medications.... I found it was quite difficult to ascertain how much was ... an anxiety component was contributing to what he was feeling ... he appeared to be using the PCA appropriately.... His pain in his leg wasn't such a problem. [I used] distraction and relaxation and got him to do relaxed ... breathing.... I put a pulse oximeter on him to check his oxygen [saturation] level... [I was] worried about PE and got him to try and relax and drop his pulse rate using biofeedback, if you like, with the pulse oximeter and getting him to do some diaphragmatic breathing [to lower his respiratory rate] ... and that seemed to be quite effective in terms of the chest pain.*

This nurse formulated several tentative hypotheses about the cause of the child's chest pain. S/he tested the anxiety hypothesis and found that by encouraging the child to relax and breathe more slowly s/he was able to relieve the chest pain. Medical or surgical complications following on from the initial diagnosis or procedure also complicate ongoing pain assessment.

But it was really one of the most difficult pain... cases I've come across because the appendix sort of came right and then there was the pleural effusion and that came right then there was the bowel obstruction so there was pain there but it was from a different source each time. So the pain kept moving and it was difficult to believe because it was inconsistent and ... it sure was there... I certainly learned something from that, I think.

Another nurse described her/his decision making process when faced with a puzzling situation as a *process of elimination*. S/he was trying to decide whether a young child was experiencing pain or distressed by something else.

I'd describe [it] as a process of elimination. Eliminate everything that could possibly, could reasonably be wrong. Then if there's still something obviously wrong then I guess you're left with the fact that there must be pain.[...] When you're looking at a baby the first thing I'd probably think of is 'Are they hungry?' And another one we look very closely at is their IV site annoying them because with a baby it can be a powerful irritant. But ruling out all those things. Looking at them physically and seeing if there's any sign of pain, like they won't move that limb or [they're] holding themselves stiffly [or] not moving freely.

This description suggests the nurse formulates hypotheses and tests them until s/he solves the problem or accepts that it may never be completely resolved.

Significance and issues related to problem-solving complex pain problems

Thus, pain assessment is more difficult in young children because they tend to have difficulty describing and locating the pain. It becomes even more complex when the nature, quality or source of pain is difficult to determine, or changes. When this happens nurses use problem-solving approaches to try to discover the problem by collecting more data about the child, generating and testing hypotheses until the problem is resolved, if possible.

Guilio and Crow (1997) also reported that nurses in their study collected more information and generated hypotheses about the cause or presence of pain before making a decision about administering an analgesic.

Believing the child

After working through some, or all, of the above strategies during the assessing stage, the nurses in this study agreed that, generally, if a child says they are in pain they believe them.

I tend to believe [them] if the child says they've got pain that they've got pain and to treat it.

It takes a lot of assessment and you have to be very careful before you ... say that child isn't in pain.

Occasionally a nurse may doubt whether a child is experiencing pain. One nurse said s/he would sit down and talk to the child to try and elicit what was really wrong.

Like McCaffery says ... 'the pain is whatever the person experiencing says it is' and I can't get inside someone ... I personally don't feel that ... even if I think I have given all the pain relief that's necessary I don't like to dismiss [it] ... if someone says to me 'I'm still sore' or Mum comes and says 'Johnny's still sore.' I tend not to ... like I don't like to hear other people ... say: 'Well you can't be like that because you've had [an analgesic].' That to me is inappropriate. So I think in that instance I'd probably want to try to sit down with the child, maybe have a chat about where its hurting the most, what's happening ... see if its something else, are they feeling scared about something? What else can we do?.

The 13 year old girl (previously mentioned) who had had difficulty convincing medical staff that she had severe abdominal pain was very expressive, and insistent, whenever she subsequently experienced any pain. One nurse described the girl's behaviour and her assessment of this girl as follows:

She'd become very distressed ... she was afraid we didn't believe her and she was really being very expressive with the pain. ...She seemed to be going so far overboard with her description of the pain because she was so afraid. ... So it built up into a situation there where, she was very, very frightened that we weren't going to believe her pain. [She] had become quite ... agitated and distressed when she had pain because she was so afraid that nobody would believe her.

Later when this girl had had surgery for her latest complication the nurse compared the girl's pain behaviour with her behaviour when she was pain free.

When I came back on [duty] she was a completely different, completely different once her pain was gone and the problem [acute bowel obstruction] was gone. She was like a completely different girl. She was not a hysterical girl, she was a very polite and quite a shy, nice girl. She certainly wasn't attention seeking in the slightest way. It just reinforced to me how extremely sore she must have been to behave like that. It was made more complicated by the fact that [her] mother said she thought the girl was putting it on. The mother didn't believe the pain either.

This nurse identifies the importance of knowing what a child is like when they are pain-free as a means of comparison when they are experiencing and expressing pain. S/he went on to explain the importance of believing the patient and the effect this had on patient behaviour.

In both those cases I've said to her right from the start "Well I know that when you say you're sore there's something wrong. So I do believe you. If you say there's something sore [...] I'll do something about it" And her attitude was just so different [after saying that]. She recovered from both those episodes really quickly.

Once the nurse reassured the girl that s/he believed her, the girl stopped the exaggerated pain behaviour and appeared more relaxed.

Significance and issues related to the concept of 'believing the patient'

Thus, the nurses described complex situations where they found it difficult to believe the patient's pain report for a variety of reasons. However, rather than doubting the child they continued to investigate to determine the cause and treated the pain. Sometimes there appeared to be an anxiety component to the child's pain experience that responded well to relaxation techniques. If they knew what the child was like pain-free this helped their assessment because they could make comparisons.

When children tell us they hurt we should believe them. Failure to do so may lead to misdiagnosis, inappropriate management or under treatment and unnecessary suffering. For example, Miser et al's (1987) study of children showed that in an extreme case, pain caused by cancer was experienced for as long as 821 days before treatment was initiated. Obviously, such delays may mean the disease is too advanced for treatment to be successful. If health professionals do not really believe the patient's pain report and do

little to help, and the patient senses their disbelief and concludes that they will not do much to help, the patient is likely to still try and convince staff that they are in pain. Several nurses in this study described the desperation of a 13-year-old girl whose reports of abdominal pain were not initially believed, who resorted to what appeared to be exaggerated pain expression in an effort to get help. McCaffery and Beebe (1994) propose that in such situations the patient may react with anger, sadness or depression and may become irritable and demanding.

Perhaps the patient tries a different approach because the truth did not work, resulting in exaggeration or lying to get others belief and help. The health care team see this change in behaviour and become frustrated, perhaps believing the patient is manipulative. Thus, evolves the adversarial relationship, with the health care team and the patient disagreeing about whether the patient has pain. Enormous emotion and energy are wasted on the part of both patient and health care team over something that can never be proved or disproved (McCaffery & Beebe, 1994, p.16).

McCaffery and Beebe propose that whenever this occurs you ask why it is difficult to believe that this patient hurts. It is essential to remember that an adversarial relationship is not a therapeutic one. *It is doubtful that anything helpful can be done for the patient in the context of an adversarial relationship* (McCaffery & Beebe, 1994, p. 16). Because every time we show by our actions, or tell the patient, that we do not believe them we are effectively calling them a liar. *This is insulting and degrading and is not a professional approach to the patient. It is an unethical and unprofessional response to a [patient's] stated need* (McCaffery & Beebe, 1994, p. 16).

The phenomenon of pain is complex and the subjective experience of pain can obviously only be known by the person. McCaffery's definition that pain is *whatever the experiencing person says it is and exists whenever he says it does* (McCaffery & Beebe, 1994, p. 15), acknowledges the subjective aspect of pain. For this reason, McCaffery's dictum should be central to the nursing assessment and management of pain in children. For the child patient being believed; that is, having the level of pain they are experiencing acknowledged by the nurse is crucial not only for good pain management but also for the development of a trusting relationship.

In summary, this initial stage (*assessing*) in the ***process of managing pain*** included multiple strategies for finding out about the child's pain experience. These strategies included: '*asking the child;*' '*knowing the child;*' '*using rating scales;*' '*observing pain behaviour;*' '*consulting others;*' '*considering pain norms;*' and, '*problem solving.*' When children are too young to report their pain, observation of their behaviour and consulting the parent become important assessment strategies. Older children can report and rate their pain and pain experts admonish us to 'believe the patient.' Although the nurses said they believed children who said they were in pain they tended to act as if they did not believe them by using concomitant assessing strategies as if to confirm the child's report.

2. Checking and interpreting

The second stage in the managing pain process involved *checking and interpreting* prescriptions. The nurses checked the child's analgesic prescription for accuracy because in their experience sometimes doctors' prescriptions were incorrect, particularly if the doctor was new to paediatrics.

I would first check the dose in comparison with their body weight and see what the minimum and maximum range is [from the] guidelines on our Ward ... The analgesia is frequently charted wrongly ... so we always check the doses before we give them anything.

We will ring up and ask them to come and chart something, they'll come and chart it, can't find us [and] go. We [then] find they've charted it wrongly, inappropriately.

I always check the milligrams per kilogram, that they've [the doctor] actually got it right ... it does pay to check that it [the dosage] has been worked out correctly.

Checking the accuracy of prescriptions ensures quality patient outcomes. Nurses also have to interpret prescriptions because often there is a choice of drug, dosage and frequency. Analgesic prescriptions are often written PRN (as required) and the nurse must use her, or his, discretion about whether to give the analgesic or not. PRN prescriptions ought to be given on an as required basis up to the frequency stated. The

nurses reported that the analgesics in their unit tended to be prescribed PRN so they were asked how they would interpret a PRN prescription.

I would interpret it as to give it regularly if its required, if there's pain there. [...] If you anticipate [that] there's no reason why the pain has diminished then you would continue to give it regularly. Nearly all our analgesia is charted PRN.. We usually give it regularly for a certain amount of time postoperatively and then see how they go skipping a dose at night. You just assess the pain more frequently. [...] The morphine increments [are charted] PRN we give them literally as required ... just give them as frequently as necessary [...] to try and get on top of the pain.

Another nurse identified a potential problem with PRN prescriptions for analgesia.

Interviewer: *Often Doctors prescribe analgesics PRN ... how do you interpret that?*

Nurse: *Often it's interpreted as 'Don't give at all' ... which I do not like. I think that if it's PRN, or four hourly PRN ... I think it's better that you actually have a [consistent] level of analgesia rather than getting into peaks and troughs ... where you actually don't have [analgesia] and [the child gets] sore and you never really get [good pain control].*

Interviewer: *We were talking about PRN prescriptions and you said "Often its interpreted as don't give at all.*

Nurse: *Or as little as often.*

Interviewer: *I wondered why you thought that. Had you seen people interpret it like that?*

Nurse: *Yes. [...] Probably we don't tend to in Ward [...] because we're quite keen on good pain management. But I do believe that sometimes people do assume that because it's on the 'as necessary' basis then it doesn't get given maybe regularly when it should be.*

This nurse recognised the importance of maintaining a consistent, rather than a fluctuating level of analgesia. S/he could see that nurses who interpreted PRN prescriptions incorrectly would tend to under medicate children so that the child would have to endure more pain.

Significance and issues related to the concept of checking and interpreting

Thus, nurses check and interpret prescriptions for analgesics and other drugs.

Sometimes prescriptions for analgesics are PRN, or on an 'as needed' basis leaving the nurse to use her or his discretion about whether or not to give it. Problems arise when

nurses interpret PRN prescriptions for analgesia as 'don't give at all' rather than, 'as needed' because this leads to under-medication and consequent poor pain control.

McCaffery and Beebe (1994) suggest that giving medication on an 'as needed' or PRN regime is appropriate when the pain is intermittent or unpredictable. In such instances the patient and family needs to be educated to request the analgesic as soon as the pain starts and before it becomes severe. PRN analgesic doses are also appropriate to supplement regular analgesic doses when the child has to undergo some activity or procedure, which is expected to cause some pain. However, using a PRN regime for continual pain is inappropriate because it will lead to peaks and troughs of analgesia and poor pain control. Instead, according to McGrath (1990) analgesics should be administered regularly and prophylactically in a time contingent manner, that is, when the dosing interval is determined according to the drug's duration of action and the child's need for pain relief. Regular dosing provides a relatively continuous level of analgesia and minimises side effects such as sedation and respiratory depression. Use of PRN prescriptions for pain has been discredited and according to Schecter, Allen and Hanson (1986) is not favoured in adults for pharmacological and humanitarian reasons. A PRN regimen *may place children at an even further disadvantage because of their inability or reluctance to communicate their discomfort* (Schecter, Allen & Hanson, 1986, p. 15).

McGrath further warns that pain problems may develop when children are subjected to PRN dosage schedules over a long period. For example, there may be variable or lengthy delays between the times at which the child requests pain relief and when they receive it, particularly at change of shift or during busy periods. This may lead to children requesting their medication at progressively shorter time intervals or developing exaggerated pain behaviour as they try to convince staff that they really need pain medication. These problems do not generally occur when children receive their analgesic in a timely manner.

3. Choosing

After checking and interpreting the prescription the third stage in the process of *managing pain* involves **choosing** which drug (or combination of drugs), dose, and

route of administration to use when choices are available. Children in this unit were prescribed one or more analgesics: sometimes only an oral analgesic; sometimes both an oral and an intravenous analgesic; and, following some types of procedures a rectal analgesic. Nurses consider the origins and intensity of the pain, as well as the pharmacological action and time for peak effect of different drugs when choosing which drug or combination of drugs, and dosage to use.

For acute pain [or breakthrough pain] we use something short-acting and strong like morphine and codeine [and] paracetamol for background pain [...] to take the edge off the pain. To give a low but continuous level of analgesia for pain that's continuously there.

I think it's quite good to combine the use of a non-narcotic, being Panadol, with a narcotic because your narcotic tends to act on the central nervous system whereas your Panadol will act on the peripheral nervous system and so I work on the premise that that combination sort of provides like an additive effect ... and they also have different side effects (emphasis added).

Morphine and codeine work centrally ... in the nervous system ... Paracetamol works peripherally and that's why it's good to use them together.

[If I had to choose between morphine and Panadol] it would depend [...] how sore I could ascertain that the child was and what they could tell me about the nature of their pain and using the faces rating scale [...] if it was appropriate, their age, their behaviour and also what their diagnosis was too.

I [...] also think about the [...] levels of the drugs and how quickly they take to work. Obviously there is a difference [between] Panadol and morphine [...] Peak levels [for] Panadol occur in 30 to 90 minutes after they take it orally. Whereas [...] if you're giving an IV bolus of morphine the analgesic [peak] effect [is] about 6 to 10 minutes. But it only lasts for about 45 minutes to an hour [...] If he was in a lot of distress with his stomach pain even if his Panadol was due I suspect I would think about giving an increment [of morphine instead] because of the quicker action rather than having him having a lot of tummy pain and [having to wait] 30 to 90 minutes for the Panadol to start helping.

It is also important to choose the best sequence for obtaining optimal analgesic and duration of effect.

In some cases both morphine and Panadol [are used together] [...] because morphine gives [...] short acting pain relief and the Panadol will tide [them] through [for] four hours. Use the morphine until they're under control and then hopefully the Panadol will hold [them. Give them] morphine increments until

they're comfortable, continue with Panadol and increment [with morphine] as required.

The nurses expected that children's requirements for analgesia would reduce twenty four to forty eight (24-48) hours post-operatively. Thus, as pain severity subsides, the frequency of morphine administration is reduced and oral analgesics introduced until eventually the child is receiving only oral analgesics. The nurses talked about getting the child used to taking oral analgesics before discontinuing intravenous or epidural analgesia.

Because both drugs [morphine and Panadol] act differently and there'll come a time when there is less need for ... a strong analgesic like morphine and more need for something less strong just to tide the person over until they don't need it as often and then they don't need it at all and its getting them ready for discharge, really too because that's the analgesia [Panadol] that children would be taking on discharge.

Thus, the nurse works out a graduated process that involves simultaneously increasing the oral analgesic while decreasing intravenous analgesia as the child's pain reduces over time.

Lastly, nurses consider the potential side effects of particular analgesics when choosing which drug to use. For example, morphine induces vomiting in some children and other unpleasant side effects, such as feeling dizzy, which may be particularly alarming to young children.

A lot of them [children] ... complain of feeling dizzy ... and the odd child will hallucinate ... it is very scary [for them] and scary for the parents too.

[Some] children who have morphine infusions and sometimes children who have epidurals with fentanyl ... they start to get side effects, we call them 'morphine jumps' Their body starts twitching and that becomes a problem in itself.... So then you're left with a choice of [giving] less morphine or [giving] another medication to counteract the 'morphine jumps'.

I asked the nurse about these 'morphine jumps,' a term I was unfamiliar with, and whether s/he knew of any literature about it. After the first interview s/he said s/he talked to some of the other nurses about it because s/he wondered whether it was 'just

an old wives tale' that they had imagined. S/he also went and asked the hospital pharmacist about it and s/he had provided her/him with some written information and references, which document this adverse effect. For example, Littrell, Kennedy, Birmingham and Leak (1992) reported severe muscle spasms (myoclonus) associated with intrathecal morphine therapy in an adult, which was successfully treated with midazolam.

Morphine was the most frequently prescribed intravenous analgesic in this unit, and the nurses reported that the very few children who had adverse reactions to morphine were prescribed Pethidine, instead. However, the nurses reported that morphine has negative connotations for some people, because of its association with cancer, dying and addiction. The nurses all agreed that the risk of addiction was low although they did not specify how low the risk was. For example, one said:

Children [won't] become addicted to morphine just because they are having it post surgery.

Although morphine may be the drug of choice to manage a child's moderate to severe pain, some nurses reported that occasionally parents raise concerns about addiction or even object strongly to its use. The nurses attempted to educate concerned parents about the appropriateness of using morphine to relieve moderate to severe pain in children.

Nurse: *Sometimes parents have concerns about their children being on morphine, then its really just a matter of education.*

Interviewer: *What would they be concerned about?*

Nurse: *That they would get addicted to it.*

Interviewer: *So what would you say to them?*

Nurse: *What I tend to say is you tend to get addicted to morphine if you take morphine and you haven't got pain. When you've got pain you don't get addicted.[...] Addiction and [...] that morphine's a drug that's given to patients who die. Those sorts of things make them a bit worried [they are] things that I sometimes find parents are concerned about.*

You have to be very careful when you introduce morphine. My speech to them [the parents] is "Your child is really sore and our next form of pain relief is morphine. [...] You may be feeling worried about your child having morphine but we use morphine all the time as an acute form of pain relief and its given in [small] amounts to get on top of the pain for a short period of time and its not addictive

[when given for acute pain for a short time].” [...] *And I watch their faces as I go and [...] I will chat on “I can see you’re [still] really worried. Would you like to speak to a doctor about it? We use it all the time [...] and its very carefully administered. Then I usually finish off by saying ‘You will see how well your child responds and you’ll feel a lot better about it.’ [...] I haven’t had any terrible situations where they’ve [become] addicted.*

Parents nearly always ask: ‘Are they [their child] going to get addicted to morphine?’ ... There are just lots of negative connotations with morphine unfortunately. Well, good in a way, but if you call it Omnopon or pethidine no one’s that worried about it really.... When a child’s sick people associate it [morphine] with death and especially ... children under the oncology team it’s a real big deal. [Parents say] ‘Oh no I don’t want you to start my child on morphine yet’ and you can just about see it running through their mind ‘Oh that means that the end is very near’ so it’s quite sad really. After a lot of education [they might see it differently] but not for a start. ... You should see the look of horror, which passes across someone’s face when the idea [of giving morphine to their child] is mooted.

Some parents, particularly in the oncology area ... will say. They’ll think if [their child] was put on morphine it means they’re dying ... you need to go right through that ... what it is and what it does ... a lot of parents say ‘Will they become addicted to this?’ and you explain about morphine when used appropriately for pain doesn’t cause that.... We’ve had some parents completely refuse morphine ... because of the stigma of morphine ... despite what you say to them they just will not have it [for their child].

The way I usually explain it to children and their parents is that if they have pain the morphine takes away the pain. If you don’t have pain and you take morphine for recreational use because there’s no pain there to deal with it [...] it makes you high. But when there’s pain there it deals with the pain and doesn’t give you those other side effects [...] It gets used up by the pain. I don’t know how you describe [that] physiologically.

If [parents] know somebody [...] who was on morphine [...] its that powerful association especially with cancer and morphine and death. Its like you get cancer, you go on morphine [and] you die. And that’s a difficult one for a lot of parents to get their heads around. It is used so frequently to treat ... in palliative care. You have to explain right from the start that its a very small safe dose we give and why we are giving it, how long we are giving it and address the addiction thing [their] addiction questions

If [parents have concerns about morphine] particularly with the oncology children where morphine is the drug of choice, where you really do need morphine and nothing else is going to be as good ... you would normally [...] get the Consultant to speak to the parents to explain it more fully [...] If they still absolutely put their foot down then you think well its really their right and you’ll really have to try and find some alternative.

On the other hand, one nurse reported that s/he had never had a parent express concerns or refuse morphine for their child.

- Nurse: *I can't recall any parent actually saying to me 'I'm very worried about my child having morphine.' I don't know whether that's because I always [tell] them what I'm doing, what it is. Trying not to make a big deal about it while explaining why we do some of the things we do when they're having this drug.*
- Interviewer: *And so parents have been happy with your explanation?*
- Nurse: *Yes, I haven't met anyone that has refused. I [can't] think of anybody [who] has said 'No, I don't want my child to have that.' Somebody else may have had a different view.*

This nurse suggested that nurses themselves might influence parent's beliefs about morphine.

I wondered whether [it] was more to do with not feeling very confident yourself about [giving morphine] or [worrying that] by talking to the parents [...] will make them more anxious. But a lot of that depends on how you approach [it] and how they perceive you. Do you look like you know what you are doing?

Careful explanations, which aim to allay anxiety, as well as demonstrable nursing competence, are needed if parents are to feel confident about the care their child is receiving.

Selecting the appropriate administration route is probably a more important consideration for children than for adults and is mainly a medical decision.

Generally in our ward it is our paediatric anaesthetist [who] decides [which method of administration to use] depending on the type of surgery. For example, the paediatric anaesthetist works with our paediatric urology surgeon. We use epidurals for a lot of the urology surgery [and] even some of the big orthopaedic surgery.

However, doctors and nurses also consider parent and child preferences when making decisions about the preferred method of analgesic administration.

Often the anaesthetist will involve the parent and the child in the decision. If a child's had a good experience with a PCA ... I listened to a paediatric nurse [...]

recently who I think probably would have favoured an epidural but [s/he] listened to the child and the parent who said that she had had a PCA in the past and had found it really good. So [s/he] was more than happy to go with that if they'd found that helpful in the past

Although nurses do not prescribe the route of administration, sometimes the prescription contains a choice of drugs, each by different routes. In such situations, the nurse's preference may be for a particular route of administration based on patient considerations.

I would choose a morphine infusion over a PCA if the child were quite unwell and unable to really administer its own medication. I would ring the doctor and say, 'This child [has] had so many increments I think it needs a morphine infusion'.

Nurses use their discretion to decide whether the present route of analgesic administration is appropriate and effective, or not, and make requests to the prescribing doctor accordingly. Children may also gain experience of different routes of analgesic administration and be old enough to make their preferences known.

[A boy experiencing a lot of pain was given the choice of a PCA or a continuous infusion]... They actually had asked him what he ... wanted ... and he actually opted for a continuous infusion.

This boy had prior experience of a continuous morphine infusion. He may also have felt too sick to take responsibility for administering his own analgesia via a PCA pump. Children less than six years-of-age are generally considered too young to manage a PCA.

They were both on morphine infusions ... because they were both too young [two and fours years of age] to manage a PCA.

When choosing which administration route to use, the child's age and cognitive level needs to be considered.

Significance and issues associated with the concept of choosing

A variety of analgesics is available to control pain in infants and children. According to McGrath (1990), the primary concern is how to select and administer the most

appropriate analgesic to alleviate a child's pain. From a professional viewpoint, according to McGrath (1990), the choice of drug is simply a matter of matching analgesic efficacy with the child's pain level after careful consideration of side effects, onset and duration of analgesic actions. However, nurses in this study reported that some parents have concerns about the use of analgesics and morphine in particular. In such cases, the nurses and doctors need to educate parents about the appropriateness of morphine as an analgesic for children. If parents still refuse morphine for their child, then rather than antagonise or distress the parents, the doctor may decide to prescribe a different analgesic. Older children may also have preferences about which drug, dose or route of administration is used based on their experience, and their preferences should be taken into consideration when making these decisions.

Nurses in Hamers, Abu-Saad, Halfens, and Schumacher's (1994) study also reported that parents influenced their decisions about children's pain, however, the researchers argued that this was questionable. They proposed, instead, that if information obtained from parent's influences nurses' decision-making than this influence would decrease, as the child grows older. However, the extent of parental influence on nurses' and doctors' decisions is not known and needs further investigation.

When *choosing* which drug and dose to give, nurses consider the origins and intensity of the pain, onset and duration of analgesic effect, and possible side effects. When choosing which route to administer analgesics (when a choice is available) nurses consider the child's developmental characteristics, needs and preferences. Such considerations may lead the nurse to request that the doctor prescribe a particular, preferred method of analgesic administration in order to get better pain control. For example, some children lack the necessary cognitive skills to operate patient controlled analgesia (PCA), either because they are too young or they have developmental delay. Very sick children may be too ill or tired to operate a PCA. Children may be afraid of injections or may not like the taste of oral medicines. In addition, some children will have experienced a variety of routes and will have discovered what worked best for them or which they liked best. Optimal analgesic administration, therefore, requires some flexibility, when possible, in selecting a route according to children's cognitive abilities, needs and preferences.

4. Giving analgesia and using non-pharmacological interventions

The fourth stage in the *managing pain process* involves giving analgesic drugs and using non-pharmacological methods to relieve pain. The nurses in this study described giving analgesic drugs by most routes except intramuscularly because the unit policy was to avoid this route and the pain associated with it whenever possible. Nurses also did not administer epidural analgesics, in this unit only an anaesthetist 'topped up' the epidural with an analgesic. Usually oral analgesics were prescribed for all children likely to experience moderate pain and, for some children (eg. post-tonsillectomy), it was the only type prescribed. However, getting young children to take oral medicines is not easy.

I think the biggest problem with children is getting them to take medicines ... oral medication some children just will not take medicines and that can be a real problem. We have to be extremely creative ... to get those medications into them that can be a real problem. It's probably our number one problem with analgesia actually. ... [If I put medicine into a drink or with ice cream] ... I always tell the child when there is medicine, [in the food or drink]. It just doesn't work to try and slip it in with their food ... they'll know it's there and they'll never take anything from you again.

Although giving oral medicines to young children can be difficult, this nurse identified how important it is that children are not deceived into taking it. The child would be unlikely to trust a nurse in the future who attempted to deceive them. The oral route is also uncomfortable for children who have had tonsillectomy and this may affect their willingness to take oral medicines.

One area that I feel we don't do quite so well is [...] tonsillectomy [...] they get morphine in Recovery Ward but once they leave Recovery they don't get morphine and so you're left with paracetamol and codeine. They tend to be often younger children, under five and with a sore throat. So swallowing paracetamol and codeine can be quite difficult for them.

Giving drugs by other routes can also be problematic. For example, while the procedure for giving rectal medicines requires skill and is not very comfortable for the patient, it also raises special concerns for children and their parents.

Quite often children that have had tonsils (tonsillectomies) ... will be given PR paracetamol intra-operatively ... with parental consent ... there tends to

be a wee bit of a reluctance to give PR analgesia probably just in terms of the connotations of abuse and ... in terms of putting things up children's bottoms. Everything is done with parental consent, or, where possible, done with parental consent.

You explain it fully to their parents that there's 'bottom medicine' you tell them it sort of goes up into their stomach from that end which isn't strictly true but it gives them a general idea [I tell them] that it gets absorbed into the blood stream from their bottom ... I usually say that [although] you don't normally let people touch our bottoms ... this is special 'bottom medicine' You ... have to be careful with that.... We ... use ... paracetamol PR a lot especially for ... children who have had neurosurgery that tend to be vomiters and so we use suppositories for them.

Another nurse pointed out that generally people in New Zealand have little experience of rectal medicines and will not understand how a rectal medicine works.

It's important that it is explained so that [it doesn't appear] we're just sticking foreign objects up their child's bottom, which is entirely unacceptable. I think it's very important that the children understand that too. That its special bottom ... I always call it 'special bottom medicine' and endeavour to have the parents there and also let them know that we don't normally let people touch our bottoms because its all part of a safe play thing. To make it acceptable to them. The other thing is if you're giving rectal medicine or analgesia and the child is very frightened, very tense [then] it hurts because their sphincter is so tight closed [that] it hurts. Then if it hurts its like an injection. You're saying 'This will make you feel better' and you're hurting the child. It just doesn't make sense [to a child].

Thus, there is concern that giving medicines rectally may be confused with unsafe touching and even child abuse, unless parents and children have the procedure and how rectal medicines are absorbed explained adequately.

After giving oral analgesics, such as paracetamol, the most frequently given analgesic was intravenous morphine, and this was prescribed usually as intermittent increments, or bolus injections. The nurses had received in-service training in administering medicines by the intravenous route.

Nurse: *The IV morphine that we use I find very effective ... [The morphine increments] must be given five minutes apart and you must wait each time you give it.... Though we do*

sometimes load the child, ... when the child is in agony we generally take two increments down to the bedside, give one, perhaps wait a couple of minutes and give another.

Interviewer: *From the sound of it this idea of having these very small increments is probably good when you're trying to titrate it, but it can take a long time ... if they actually need about three increments one after another.*

Nurse: *The five minutes, it's a lot of nursing time, yes. I guess in a way it shows a pattern, which is quite good if we're giving eight to ten increments in a shift, then you know that child isn't coping.... I suppose it's a hindsight thing.... But you think 'Oh gosh, this child's having lots of increments and I'm not getting on top of it'.... Compared to a child where I give an increment and they sleep for an hour and they're better.*

Giving morphine by small incremental doses is effective for some children but for others it is problematic. The procedure for giving intravenous increments can be very time consuming for busy nurses, since protocols usually recommend waiting at least 10 minutes after administering an incremental dose before repeating the dose if necessary and then observing the child for a further ten minutes for respiratory depressant and analgesic effects. The incremental method does not always provide adequate pain control and this may be a reason for choosing, or requesting a different route of administration.

I gave her numerous increments of morphine to try and control her pain. She was becoming so distressed with her pain [...] the morphine had a very good effect in calming her but it wasn't really giving her very sustained relief at all. After about half an hour she needed another 2 increments

Nurse: *If you look back ... and see that you're giving four or five increments in an hour that's getting a lot.... Then it's a matter of giving them an infusion, or if it's appropriate, a PCA. I think it's just assessing that OK you're giving lots of increments during the hour and it's taking up [a lot of] nursing time and the child is relying on you to be available to them to relieve the pain.... It would be a lot more efficient if they changed to perhaps an infusion or a PCA.*

Interviewer: *And more effective for them because it takes you time to go and find the [drug cupboard] keys and get organised.*

Nurse: *Well they're relying on you mucking around getting to them.... Plus we're very busy also with other people.... [So] it's more efficient for the patient and the staff member if they can have a better way of receiving it. It's not often that [that] happens but you get the odd*

child where they're having a lot [of morphine increments] and I guess I mean four or five every hour.... You realise that they're going to need a lot of morphine over a 24 hour period.... [You ask yourself] is it [the present dose, frequency and route] effective enough? Do I need to give [a] more regular amount as an infusion? Do I need to get a second opinion like the Pain Team?.

If we're finding that we are needing to give a child a lot of increments to keep on top of the pain then we will get in touch with whichever [medical] team [and let them know that] we're using a [lot of increments and that] this [child] needs to be on a continuous infusion.

Nurses, therefore, consider the effectiveness and efficiency for both the patient and the nurse when choosing which route of analgesic administration they prefer. Although the nurse might prefer to use a continuous infusion or PCA, these were not always readily available. The use of morphine infusions and PCA pumps depended on the availability of equipment, which was shared with adult wards. Giving analgesics by these parenteral methods was also usually short term.

[What] I favoured most was to get the morphine up and running on an infusion basis and then bring in paracetamol and codeine as well.... Then as things were going well to decrease the morphine infusion.

Sometimes nurses need to give additional increments, or bolus doses of morphine even when the child already has a continuous intravenous infusion or PCA, for breakthrough pain, or during painful procedures.

Often even if they're having a morphine infusion we will also have increments charted as a back up if we need some [extra analgesia].

A child who was on a continuous morphine infusion whose infusion rate had earlier been lowered because he was too drowsy, started to complain that the pain had returned.

He was complaining that his tummy had started to hurt again ... so what I said to [his] mum was 'I need to give him something that's going to help him straight away.... I've got some medicine that we can put in through the drip that will actually get in ... straight away [and] help to take the pain away that he's feeling now.... I think this might be the time that I ... just have another fiddle with the rate again and move it back up again because he's certainly [feeling more pain again]. So we've [had] a bit of adjusting of the morphine rate over the morning.

Giving analgesics by continuous intravenous infusion requires frequent and regular monitoring and evaluation of therapeutic effect. The nurse must use her, or his, discretion about when to increase, or decrease, the rate of infusion to achieve optimal analgesia and minimum side effects. Giving analgesia via gas inhalation (Entonox) was the other route used in this unit, particularly during painful dressing procedures.

Significance and issues associated with giving analgesia

Thus, the nurses in this study gave analgesics by oral, intravenous, rectal and inhalation routes. Each of which had its particular problems for the nurse to consider when making pain management choices. A full range of routes for administration of analgesic drugs was available for children in this unit most of the time. However, some routes of administration can be problematic for nurses. In particular, having to give small incremental IV (bolus) doses of morphine is time consuming, provides only short-term analgesia and often pain control is poor. One could even say that giving opioid analgesics, in general, is problematic because of all the procedural requirements related to legal custody, prescription and administration.

Betz, Hunsberger and Wright (1994) and Wong (1995) both provide information about the relative merits, contraindications and concerns associated with different types of analgesia and different routes for giving analgesics some of which were identified by the nurses in this study. Wong further discusses the importance of adhering to the four "rights": right drug, right dose, right route, and right time when administering drugs. She notes that although nurses may not prescribe medicines knowledge of these essential principles assists in the optimal implementation of analgesic orders and when discussing with other practitioners possible strategies for improving pain control. Factors to consider when choosing which drug, dose, route and time are also discussed in some depth. For example, the right timing for administering analgesics depends on the type of pain.

"For continuous pain control, such as for postoperative or cancer pain, a preventive schedule of medication around the clock (ATC) is effective. The ATC schedule avoids the low plasma concentrations that permit breakthrough pain. If analgesics are administered only when pain returns) a typical use of the PRN, or 'as needed,' order), pain relief may take several hours [or never be achieved].

This may require higher doses, leading to a cycle of under medication of pain alternating with periods of overmedication and drug toxicity” (Wong, 1995, p. 1097).

Wong proposes that preventive pain control is best achieved via continuous IV infusion rather than intermittent boluses. However, if intermittent boluses have to be given then the time intervals between doses should not exceed the drug’s expected duration of effectiveness. On the other hand, when pain is not continuous, such as during a procedure, temporary, intermittent pain control is needed before the scheduled procedure. In such cases, administration of the drug should be timed to coincide with the painful event so that peak effect occurs during the procedure.

Using non-pharmacological interventions

The fourth stage in *managing pain* also involves *using non-pharmacological interventions* as adjuncts to giving analgesia. Nurses in this study used a variety of non-pharmacological interventions in conjunction with analgesics including distraction, guided imagery, biofeedback, therapeutic touch, creative visualisation, reassurance, and play. For example, children could bring their own books, toys, games, radio, cassette or CD player and TV from home to play with. The ward had some toy resources, such as Sega video games. One nurse carried around (in a ‘bum’ bag worn around her/his waist) a selection of items, which could be used to distract a young child, such as a bubble pipe and soap mixture (for ‘blowing the pain away’) and finger puppets. This same nurse also sometimes used creative visualisation with some patients when there was sufficient time.

A girl with leukaemia who had bone pain [after receiving IV morphine increments] ... then after a while when they seemed to be giving her some [pain] relief we actually used some creative visualisation. We imagined that she was lying in a field of grass and we talked about all the sounds and senses and smells and things. She really got into that; she really cottoned onto it and in the end she ended up by saying ‘Oh I’ve been there its near home.’ She was actually a country girl.

Several of the nurses described distraction techniques used with a particular child; a boy in an Ilizerov frame (a big metal frame with metal pins going into his tibia and femur designed to gradually lengthen his bones) who had to have his numerous pin sites cleaned every day. The child found this procedure very distressing and painful, and one

of the nurses described the war game the child had invented, and which the nurses participated in, to distract him.

He would cry and scream ... scream really loud.... He could be heard all over the Ward.... He was very keen on He-men and Star Wars, and things like that. In the end he pretended that every swab with Betadine on it was a Star Wars fighter plane and [it] would come ... and ... kill the germs around his pin sites, and we used that.... But it was with other things ... Entonox and sedation, as well.

A teenage girl, who had just had a chest drain inserted for a pleural effusion, was in a very distressed state, and telling the nurse that it was very sore, despite having had an analgesic. In this case, the nurse tried a form of biofeedback and reassurance, which s/he said worked well.

Well it was partly because the situation was getting a little bit out of control where she was becoming very verbal [about expressing her pain] her mother was tearful, all the other kids in the room were petrified that she was about to expire.[I was] concerned that maybe she couldn't breathe and maybe she was heading for a medical crisis. So ... I put an oxygen saturation monitor on her and once ... she could see there was oxygen saturation [readings] of 99%-100% [she seemed to be reassured]. I [said] 'This is the percentage of oxygen in [your] blood that means that you're alright' It was a bit of a biofeedback thing where she could see it. There was proof that she was alright and she started to do some breathing exercises ... some deep breathing and trying to relax [I] explained to her how when you get very upset that it can make you breathe more quickly and make you feel more uncomfortable which goes in a cycle and that if she could just slow down and keep looking at her little magic number there and see what it was on [the reading] it would start to come right, and it did.

Another nurse who looked after the same girl a few days later described how she used touch, reassurance and talking to help the girl through her anticipated discomfort and anxiety about having the chest drain removed.

I'll use lots of tender loving care, she definitely needs that and holding her hand, touching her face and head, just patting her on the head. I did that and just lots of positive reinforcement. I started the shift this morning knowing that the chest tube would probably come out anyway....I started talking about it way at the beginning of the shift just trying to anticipate that it would come out. She said to me this morning when I turned her 'Just take it out. Take it out!' She just wanted it out and so we talked about the fact

that it wasn't draining anything else and the doctors would probably say it could come out. Then ... she had an x-ray and medically it was decided that she could have it out.... It was quite good that we had talked about taking it out all day. I'd promised, well she'd asked if it would hurt and I said, 'Yes' that it would hurt a bit, it wouldn't be as bad as having a pleural tap, which she'd had a few days before, she'd had 3 of them actually, it would be a short sharp pain and that I would give her morphine while we were doing it. I was pleased that we had talked about it like that because it doesn't always work quite so well, but it did [that] day because I wasn't all that busy.... I don't know, just lucky too, because the registrar fronted up on the ward and said 'Oh well, I'm going to take it out now'.

Significance and issues associated with using non-pharmacological interventions

In summary, these nurses used a variety of *non-pharmacological interventions* for alleviating pain in conjunction with pharmacological methods. Mostly they had learned about these from their own reading, although one nurse had learned about these interventions as part of a paediatric course for registered nurses in another country. Games and other distractions, some of which were developed by the children themselves, were used as alternative interventions to ameliorate pain and distress. Which non-pharmacological pain alleviating intervention can be used depends on the time available, as some, like guided imagery and relaxation techniques, require a reasonable amount of time to accomplish as well as a quiet setting (it can be difficult to find a quiet setting in a paediatric unit!).

The use of non-pharmacological interventions in children's' pain relief is strongly supported by experts in pain control. The US clinical practice Guidelines for the Management of Pain in Infants, Children and Adolescents Undergoing Operative and Medical Procedures (Hester, Jacox, Miaskowski & Ferrell, 1992) recommends that non-pharmacologic strategies can be used alone for less painful procedures, such as venipuncture, or as adjuncts to pharmacologic strategies for more painful procedures.

- *For infants, sensorimotor strategies include pacifiers, swaddling, holding, and rocking.*
- *Cognitive behavioural strategies include hypnosis; relaxation; distraction; music, art, and play therapy; preparatory information; and positive reinforcement. Rehearsal before the procedure may be helpful.*

- *Child participation strategies focus on involving children in age-appropriate decisions about the procedure and in activities related to its conduct.*
- *Physical strategies include the application of heat or cold, massage, exercise, rest, and immobilisation.*
- *Older children and adolescents who find non-pharmacologic strategies helpful may prefer these strategies over pharmacologic agents for procedures that are not excessively painful (Hester et al, 1992, p. 150).*

According to Betz, Hunsberger and Wright (1994) two non-pharmacological interventions, in particular, are essential to the care of all infants and children, regardless of the type of pain or health care setting. Reducing fear, reducing anxiety and enhancing a sense of control help children to cope more effectively with painful experiences. The nurses in this study acknowledged the importance of both of these strategies in general terms but did not necessarily identify these as non-pharmacological strategies for pain relief. This may have been because the interviewer used the term 'alternative techniques' and the nurses viewed such strategies as normal practice.

Betz, Hunsberger and Wright (1994) provide information about age-appropriate educational strategies to use when preparing the child and parent for invasive procedures and/or for reducing fear and anxiety. They also discuss a range of non-pharmacological strategies from simple comforting ones, such as holding and rocking an infant, to the more complex. Wong (1995) also provides a full range of guidelines that includes general and specific strategies. Use of distraction, relaxation, guided imagery, positive self-talk, thought stopping, behavioural contracting, massage, hypnosis and transcutaneous electrical nerve stimulation (TENS) are all discussed. However, training in the use of any of these is needed if nurses are to be able to offer these strategies as part of their repertoire of pain relieving skills. For example, in particular both hypnosis and TENS require specialist knowledge and training.

5. Monitoring and responding

The fifth and final stage of *managing pain* involves *monitoring* patient response to drugs administered and *responding* appropriately and promptly when there are serious side effects. When opioid drugs are administered, regular monitoring of the child's respiratory rate and level of sedation is needed to detect serious side effects such as

respiratory depression. When morphine is administered IV the peak effect, and hence the peak respiratory depressant effect occurs at 7-10 minutes. The nurses all mentioned the importance of careful monitoring for serious side effects as the following excerpts show.

The protocol is to check their respiration every hour and if their resps are getting less than 12 per minute ... to give them Naloxone ... but that has never happened to me.

We hear of the potential side effects in terms of respiratory depression and we hear of allergic reactions. But I'm also aware of what to do about it in terms of giving them something that will reverse the narcotic.

The epidural's charted so that if the block [anaesthesia] goes above a certain level the epidural should be turned off.

The respiratory parameters and the dose of Naloxone and the dermatome level for that child's epidural are all handwritten into the prescription sheet.... It also includes who to call if there's a problem with the epidural and exactly what to do.... It's quite specific.

It's just a continuing assessment. I think it's just so important. You've just got to keep going back and seeing if what you're doing is actually making [a difference] having the desired effect. We need to be aware of the things [...] that morphine can [do] it is a respiratory depressant, so you need [...] to be cautious. You need to be sure that you have the correct amount for the weight of the child

These nurses not only reported that they monitored children's response to analgesia but they also showed that they knew how to respond if there was a serious side effect, such as respiratory depression, by giving the antidote. However, none of the nurses had had to give naloxone to a child with respiratory depression.

The other major side effect reported by the nurses was 'morphine jumps' or myoclonus. All the nurses had had some experience of this phenomenon and its treatment with Diazepam. However, they did not know the proper term or the pharmacological basis of myoclonus.

Significance and issues associated with monitoring patient response to medicines

The US clinical practice Guidelines for the Management of Pain in Infants, Children and Adolescents Undergoing Operative and Medical Procedures (Hester, Jacox, Miaskowski & Ferrell, 1992) contains an abbreviated pain management flow-chart which includes the requirement to assess the effect of interventions. The Guidelines further recommend that if there are unacceptable side effects or inadequate analgesia then the drugs, dose, interval, route or modality may need to be changed or an adjuvant or side effect treated. In other words, nurses are expected to not only monitor but also respond appropriately to negotiate more effective pain management with the prescriber.

However, sometimes side effects are more serious and even potentially life threatening such as respiratory depression or severe allergic reactions. In such cases, the nurse must know how to respond rapidly and even initiate emergency treatment until medical assistance arrives. Benner (1984) discussed the general importance of adequate monitoring and effective responding by the nurse when a patient's condition deteriorates and emergencies occur.

Because it is the nurse who most often picks up the first signs of deterioration in a patient's condition, it is the nurse who must often manage rapidly changing situations until the physician arrives (Benner, 1984, p. 109).

Nurses are often confronted with medical crises that require immediate medical attention; for example, it is most frequently a nurse who initiates a resuscitation effort (Benner, 1984, p. 116).

Benner proposes that this area of skilled practice includes the ability to grasp the problem quickly, to intervene appropriately, and to assess what help is needed and mobilise that assistance. Because, although hospitals try to have back up in the form of doctors available at all times patient emergencies repeatedly outstrip the best of planning, and the nurse must manage until the doctor arrives. This domain of practice had received little attention until Benner's explication of the domains and competencies of skilled nursing practice. According to Benner, this area of nursing practice has been fraught with ambiguity. It is usually implied that the nurse has overstepped the boundaries of her or his scope of practice and the nurse's skilled performance has tended to be overlooked or denied. Benner contends that if the nurse is expected to monitor patient response to treatment then

surely the nurse is also required to manage rapidly changing patient situations when they arise until the doctor arrives. *We cannot afford to relegate a major area of our actual performance to 'non-nursing' or 'incident report' only status* (Benner, 1994, p. 119). If we fail to document and legitimise this major area of our actual practice then *we contribute to the recognition lag in nursing* (Benner, 1984, p. 119).

Paediatric specialists have highlighted these concerns in their respective textbooks. For example, Wong (1995) reminds nurses to *watch for side effects* and highlights respiratory depression as the most serious side effect that may occur with opioids. She points out that the patient's respiratory rate may decrease gradually or cease abruptly and that lower limits of normal for children have not been established. *If respiratory depression or arrest occurs, the nurse must be prepared to intervene quickly* (Wong, 1995, p. 1098). Specific guidelines (American Pain Society, 1992) about appropriate interventions should the patient be unrousable or apnoeic are included in her textbook.

Betz, Hunsberger and Wright (1994) also highlight the importance of monitoring for respiratory depression following the administration of opioids. However, they note that the incidence of respiratory depression in adults is very low and the incidence in children remains poorly documented. The authors recommend increased surveillance of respiratory rate and level of consciousness when the child receives the first dose of an opioid, an increase in dose, or administration of an adjunct medication that may also depress respirations (such as Diazepam).

Thus, experts agree that nurses must take responsibility for monitoring the effect of interventions, understand the nature of optimal and inadequate analgesia, unacceptable and serious side effects. In addition, nurses must take responsibility for advising doctors of concerns and negotiating more effective pain management. Finally, nurses need to know how to respond appropriately in an emergency including when doctors are not immediately available.

Conclusion

In this study, a five-stage *managing pain process* emerged: *assessing; checking and interpreting; choosing; giving; monitoring and responding*. Each stage has its own properties, with the assessing stage being the most complex, and containing seven

subcategories: *asking the child; knowing the child; using rating scales; consulting others; considering pain norms; problem-solving complex pain situations; and, believing the child.*

Initially it was thought that the nurses used a systematic process for pain management that combined elements of nursing process and rules for the safe administration of medicines. However, it was found that use of these steps and rules was variable and not necessarily linear. The final stage of *managing pain* included 'right responding' a concept which until recently had been largely overlooked in the nursing literature. The *managing pain* process described in this study meets Glaser's criteria for a BSP (Basic Social Process) and is able to account for variation in task difficulty, relational aspects, context, nurses' intentions and interpretations, and variation in skilled performance.

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CHAPTER FIVE

Being Safe

Introduction

In this study, *safety*, as the quality of being free from danger or risk of injury was an *in vivo* category, which emerged from the data. It was a primary consideration in the nurses' *managing pain* process with their paediatric patients, which they frequently named or alluded to; awareness of *safety*, influenced the nurses' clinical decision-making and practice. Concern with *safety* is also evident in nursing texts that provide foundational knowledge for clinical practice, including knowledge for *managing pain*. It was appropriate, therefore, to show the ongoing nature of the emerging category by changing its name to the gerundive form, *being safe*. Excerpts from the data will be used to illustrate the category *being safe* and its properties during the managing pain process. *Being safe* in this study has four properties: *following the rules*; *being cautious*; *managing risk*; and, *right responding*. Finally, the significance of each concept and other relevant issues will be briefly discussed.

Following the rules

In this study, one of the ways that nurses demonstrated *being safe* was in their adherence to rules. They referred directly to a variety of rules that they attempted to follow, for example, the five rights (careful checking procedures) for administering medicine safely, and unit protocols (professional guidelines) for administration of analgesia. As a nurse, I was aware of another type of rule that might guide the nurses' practice during the handling and giving of medicines: health care legislation. In New Zealand, the relevant statutes and regulations are Misuse of Drugs Act 1975, Medicines Act 1981 and, Medicines Regulations 1984. In institutional settings, these requirements are usually operationalised as policy or protocols that staff are expected to follow. For example, I would expect a hospital to have a policy on the storage and

administration of controlled medicines (drugs). This insight led me to return to the data and systematically compare incidents for indicators of nurses' awareness of legal requirements related to the handling of controlled medicines such as morphine.

The nurses in this study demonstrated their knowledge and adherence to these various rules in their clinical exemplars as they sought to be safe while *managing pain* in children. For example, the nurses all described concerns about the potential adverse effects of giving opioids parenterally.

I suppose the first concern is about giving it [an increment] safely and not wanting to depress someone's respiratory rate so much that they're not going to breathe enough. So one of the things we always do is always count someone's respirations before we give an increment of morphine.

Another nurse demonstrated legal accountability when confronted with an incorrect prescription.

Obviously you would never give more [a greater dose] even [if] it was incorrect, even if it weren't the appropriate dose for that child's weight. You would never think 'Oh that's wrong I'll give it without the actual order being changed'. But what we will often do is if an order is [incorrect] maybe we can always give less than what's charted ... if it's something that is inappropriately charted [that is] it's high. You would also want that changed. But usually, yes, I think we always work within a view of what's charted and if it's not [correct] you need to get it changed (emphasis added).

This excerpt illustrates the standard of practice expected from a registered nurse; accurate knowledge of the legal requirements relating to the prescription and administration of medicines. In New Zealand, it is not lawful to administer a controlled medicine if any aspect of the prescription is unclear or incorrect [Medicines Regulations 1984 Section 29(1)].

A nurse, faced with a child needing immediate pain relief, an illegible prescription and no doctor readily available, had the choice of waiting until the doctor was available or s/he needed to find some other way of meeting the child's need for pain relief.

Earlier in the week there was a child who had a PCA ... and the prescription had been written in ink and someone had spilt water on it, probably when they were washing their hands and it was all blotted out and I didn't want to draw up another pethidine syringe without getting it recharted. But the pain nurse said the anaesthetist wouldn't be able to come for about an hour. So we just decided to give pethidine increments to this child because they were charted, to keep on giving them ... until the anaesthetist could come and in the end it didn't take an hour but there was another way of, you know the child didn't have to lie there in pain, basically, which was the main thing.

This experienced nurse was not willing to use the illegible patient medication order. S/he complied with the section of the Medicines Regulations (1984) concerning prescriptions (Section 29(1) that states, among other requirements, that prescriptions must be legible.

However, the set of rules that the nurses commented on most frequently were the paediatric unit's Peri-operative Medication in Children Guidelines (1992)¹ that a paediatric anaesthetist had written (termed 'the medical protocol' from here on). The nurses' termed this document 'the protocol' and in the case of analgesics, it recommended appropriate dosages for a range of different analgesic drugs and the physical signs that should be monitored in the patient.

According to all the nurses in this study the protocol allows them to give one incremental dose of morphine, monitor the child's pulse and respiration at 5 minute intervals, and after 15 minutes repeat the dose and monitoring process if pain relief has not been adequate. Comparison with the medical protocol, however, shows that it does not specify a time interval between parenteral bolus doses. Instead, it recommends giving increments 'until comfortable' and to 'check the respiratory rate before and after the dose' (refer Appendix A). However, I later learned that the nurses also used another protocol which had been written by a group of nurses; the Paediatric Nursing Handbook (1994)² which states that *the child's respiratory rate must be recorded prior to the administration [of an IV analgesic increment] and 5*

1 Author's name not supplied to preserve anonymity.

2 Authors names not supplied to preserve anonymity.

minutes following (p. 18) and if there is any indication of respiratory depression, that the drug should not be given. Therefore, the medical and the nursing protocols do not agree and it was subsequently unclear which particular protocol the nurses were referring to at interview. A copy of the Paediatric Nursing Handbook (1994) was not obtained until after the interviews had been completed. Indeed, it was only when clarification was sought from one participant about the source of the pain rating scales used that I was shown the Paediatric Nursing Handbook which contained copies of the scales and other information, such as guidelines for administering IV analgesics.

To complicate matters further there were standard forms, or protocols, for administering analgesics by continuous infusion by either the intravenous or the epidural route. These forms contained the analgesic prescription, specified the rate of administration, specified how to reverse respiratory depression and included a Standing Order for administering naloxone to reverse this if there was a dangerous degree of respiratory depression. In the case of the Paediatric Epidural Analgesic Infusion (refer Appendix B), the form also stated which anaesthetist had placed the epidural and how to contact that anaesthetist or the Duty Anaesthetist if there were problems. Therefore, when the nurses spoke of protocols they could be referring to one of three types or all of those in general use. The infusion protocols also contained a scale of sedation and a 0-4 pain scale, which differed from the pain rating scales used by the nurses. The epidural protocol also contained a diagram showing selected spinal nerves and their relationship to body features, such as the umbilicus, which was used to determine the dermatome level (level of analgesia). A flow sheet to record these parameters as well as respiratory rate was attached.

It is axiomatic that nurses must know the rules related to administration of medicines with which they are expected to comply. All the nurses in this study were knowledgeable about the paediatric unit's analgesic protocols in general but varied in their knowledge of specific protocol details, such as dosage per kilogram body weight and the amount of time between doses. They appeared to be unaware of the discrepancies between the medical and nursing protocols relating to intravenous increments.

You can give an incremental dose, which is like little boluses until they are comfortable so long as the respiratory rate is adequate.

Initially, the nurses spoke about the analgesic and separate epidural protocols in very positive terms, and they appeared to value these guidelines.

Protocols are good and they have a place.

The respiratory parameters and the dose of naloxone and the dermatome level for that child's epidural are all hand written into the prescription sheet ... and it also includes who to call if there's a problem with the epidural and exactly what to do. It's quite specific. It actually makes you feel very confident nursing them as well. It's so specific that I think it makes my job ... much easier.

We check the dermatome level to which the patient's anaesthetised. It depends a wee bit on the age of the child, for very young children as long as they can move their hands we're not too worried. It's the level of anaesthesia [that we check] As long as they can move their hands and they're breathing. It's something to do with the nerves that control movement of the hands [...] But the slightly older kids we usually use a bit of ice [to] touch their skin and [ask] 'Is that cold?' and 'Can you feel the cold?' and then go down [the body] to find out the level at which the block is. Usually it's just a matter of making sure they are numb from just above the suture line down [downward] When the epidural's charted [it states] that if the block goes above a certain level the epidural should be turned off ... if it was above T10 or T6 (I can't remember which).

Some of the nurses appeared to be confused about whether the epidural was providing anaesthesia or analgesia even though it clearly states that it is epidural analgesia on the form. Having protocols to follow appeared to enhance the nurses' sense of safety and confidence in managing pain with opioids. One nurse referred indirectly to her/his use of the protocol as s/he started a child on intravenous morphine.

Certainly I'm careful with the recordings and the resps ... and I stick to all that ... [but if the child has been having morphine for some time, then] ... I'm not as wary I suppose.

This excerpt suggests that compliance with protocols may become attenuated over time. Familiarity and confidence with performing delegated therapeutic interventions and regimens, as well as the nurse's perceptions about the nature of what s/he is administering, all influence her/his perceptions of the relative safety of what they are

doing. For example, the nurses suggested that the amount of the prescribed opioid drug was so small that a nurse could safely administer it intravenously.

It's a very small and very safe dose [of IV morphine] that we give (nurse's emphasis).

The thinking behind giving the increments [small doses] is that someone is kept safe because a lot of other areas of the hospital don't even give IV morphine. We seem to be a bit different here in paediatrics because we give it intravenously (nurse's emphasis).

Managing children's post-operative pain with small intravenous boluses or increments of morphine (or other opioid) administered by nurses was a relatively recent innovation in this paediatric unit, consequently the nurses' awareness of safety when administering potent opioid drugs was probably heightened. The unit actually had a policy that banned intramuscular administration of drugs except for those, which had to be given by this route. However, giving small increments of morphine was problematic because the doses were so small that this usually meant that several increments had to be given to obtain pain relief. According to the nurses, following the rules of the protocol involved spending at least 15 minutes with each child, and often longer than this because more than one incremental dose was usually needed.

[The increments] must be given 5 minutes apart and you must wait each time [...] it's a lot of nursing time.

I think the standard [protocol] says you should sit with the patient for 15 minutes after giving them a narcotic increment and that you should take their respiratory rate and pulse every 5 minutes. I think that's 'overkill'. I think probably it would be better if the standard set a mg per kg limit on the [total amount] of increment that you [could give] and that the patient was reassessed at 7 minutes and 15 minutes so that you cover the peak [effect] time and it was assessed in terms of their respiratory state and the effect that the analgesia had. To suggest that someone should stay with the patient for 15 minutes every time you give an increment is just perfectly impractical.[...] [The] standards need reviewing and up-dating.

I think that 0.02mg per kg is a small dose of morphine and for some children you might give [an incremental dose] come back 7 minutes later and [find that] it's made no difference. So you give them another 2 [increments] and then 40 to 50 minutes or an hour later they're sore again [and you repeat the whole process].

I gave him 1 [increment of pethidine] and 5 minutes later I gave him another and 10 minutes later it hadn't really had any effect. So then I gave him another 3 increments ... 5 minutes apart and that worked quite well for about half an hour. So I gave another 3 increments. It was clear that this wasn't a particularly useful way of giving pain relief and incredibly time consuming and so I rang the Duty Anaesthetist [...] We needed to control the child's pain and we settled on a pethidine PCA [because he seemed to be allergic to morphine] I explained to the anaesthetist that he'd been requiring 3 doses of pethidine at half hourly intervals to get on top of it. So he prescribed the dose for the PCA bearing in mind the dose that had [been required] beforehand.

If you give a couple of increments and the child either goes off to sleep or is relieved of pain that's great. [But] if you look back and it's halfway through the shift and [...] see that you're giving 4 or 5 increments in an hour that's getting a lot. Certainly when we use a prescription [of] a mg per kg criteria it's all within a safe boundary. But because of giving all these increments maybe then it's a matter of giving them an infusion or if it's appropriate a PCA. [...] [If] you're giving lots of increments [per] hour and it's taking up a lot of nursing time and the child is relying on you to be available to relieve their pain [then] it would be a lot more efficient if they changed to perhaps an infusion or a PCA.

Thus, according to the nurses' the incremental approach was often an ineffective pain relieving method and was time-consuming (although the nurses' perceptions of the recommended time interval between doses varied). The nurses believed there was a place for more efficient and effective methods to be used at times. Difficulties with the time involved were compounded by increased workloads, which sometimes made it difficult for the nurses to follow unit protocols. Lack of time due to higher than usual workloads also influenced the nurses' ability to monitor each child adequately. Nurses also commented on the effect of workload on monitoring of patient response:

My main concern I guess is probably the times where the workload is such that you haven't got the time to follow [the unit protocols] I think hospital standards say you should sit with someone for 15 minutes after you give them morphine and take their recordings every five minutes and I don't think that always happens.

So occasionally the workload is such that it's not possible to monitor the child as closely as you would like to ... to assess the effectiveness of the analgesia or possible side effects.

Therefore, although nurses may want to comply with protocols and other rules, clinical circumstances sometimes make this difficult. The other potential difficulty with using the intravenous route occurred when there was no IV access because with

the exception of some specialist units in New Zealand only doctors insert IV access ports. It could take some time to contact a doctor and get a new IV access inserted and during this time, there needed to be an alternative means of administering pain relief.

A boy with a compound fracture of the tib and fib [...] has bad veins and [it was] very difficult to [gain] IV access. His [IV] fluids had tissued [...] about 9 o'clock in the morning. So he had had no IV [analgesic]. So mid morning the house surgeon and registrar attempted to put in an IV [...] and failed [...] In the end I think it was about 3 o'clock [before] the IV access was established. So the child had had regular [oral] paracetamol and codeine throughout that time. But by the time I came on the afternoon shift there was a fair bit of catch up to do to get on top of his pain.

The other set of rules, or clinical maxims, that nurses follow to ensure patient safety is the five rights of drug administration which are usually specified in fundamental and some specialist nursing texts; 'right drug'; right patient; 'right dose'; 'right time'; 'right route' (eg. Craven & Hirnle, 1996, p. 640; Potter & Perry 1997, p. 811; Taylor, Lillis & Le Mone, 1997, p. 608; Wong, 1995, p. 1089). Some authorities also include evaluation (Betz, Hunsberger & Wright, 1994, p. 910; Kozier, Erb, Blais & Wilkinson, 1995, p. 1311) or observing for side effects (Wong, 1995, p. 1098). These rules require that the nurse determines whether the prescription is accurate for the particular patient (right drug and right patient chart), checks the patient drug administration chart to determine when the drug was last given and decides whether it is appropriate to give a repeat dose at this time (right time), interprets the prescription, calculates and prepares the correct dose (right dose) selecting the appropriate syringe and needle gauge and length if a parenteral route was selected (right route), checks the identity of the patient (right patient), administers the drug and monitors the therapeutic response (right response). One nurse explained the importance of following these rules by saying:

As long as you're giving them an appropriate dose and monitoring the effect of that appropriately then I think the nurses are pretty safe (nurse's emphasis).

Thus, *following the rules* requires that the nurse firstly knows what the rules are and then complies with them.

Significance and issues associated with following the rules

The *following rules* property of *being safe* is supported by nursing procedural texts, which emphasise the importance of following clinical maxims such as the five rights for drug administration and institutional protocols. Management also expect nurses to follow hospital or other institution's policies and protocols for carrying out procedures such as checking and administering medicines.

The statutory professional body which regulates nursing in New Zealand, the Nursing Council, in 1996 distributed a Code of Conduct for Nurses and Midwives which includes among other criteria that the nurse will comply with legislated requirements. The Code also states that the nurse will *observe rights and responsibilities in the prescription, possession, use, supply, storage and administration of controlled drugs, medicines and equipment* (p. 4).

Benner's domain of administering and monitoring therapeutic interventions and regimens, particularly in relation to administering medications accurately and safely and monitoring for therapeutic response, side effects, toxicity and incompatibilities, also supports the concept of *following the rules*.

Being cautious

However, safety goes beyond following the rules of drug administration and includes a more global concern- a property that I have termed *being cautious*. As used here, *being cautious* refers to the nurse showing care, forethought, or prudence in her/his decision-making and interventions. The most common way that these nurses demonstrated *being cautious* was their regular practice of checking the accuracy and appropriateness of the analgesic prescription written by the doctor. Several of the nurses said that in their experience prescribing mistakes were common. According to these nurses junior doctors and others who lacked paediatric experience were those most likely to write inappropriate prescriptions for analgesics and other drugs. Some doctors would ask the primary nurse's advice about what to prescribe. Other doctors prescribed without either consulting the nurse or the unit's Peri-operative Medication in Children (1992) guidelines. So, the nurses would calculate the correct dosage for the prescribed drug taking into consideration the child's weight, using the formula

contained in the unit's Peri-operative Medication in Children (1992) guidelines and check whether their calculation agreed with the doctor's prescription. Nurses' cautiousness about prescriptions is evident in the following excerpts.

I would first check the dose in comparison with their body weight and ... [the] guidelines on our Ward. The analgesia is frequently charted wrongly ... so we always check the doses before we give them anything.

We will ring up and ask them to come and chart something, they'll come and chart it, can't find us and go, [then] and we find they've charted it wrongly, inappropriately.

I always check the milligrams per kilogram, that they've [the doctor] actually got it right ... it does pay to check that it [the dosage] has been worked out correctly.

Clearly, these nurses recognised the safety implications of their checking and monitoring role. However, *being cautious* involves consideration of wider issues than just prescriptions. The patient's condition, psychological aspects, related treatment, and the patient's experience and expression of pain also need to be considered. After considering these wider issues the nurse may decide that giving more analgesia is neither warranted, nor necessarily the best way to manage the child's pain. For example, one nurse described the other aspects s/he considered when deciding about the benefits of giving more analgesia to a particular child.

I thought at first my immediate concern was for her safety and I was concerned that she had respiratory problems and there was a problem with the chest drain. But it was in my mind as well that with the pain she was avoiding breathing deeply because it was exacerbating the painI think the chest drain was pulling at the suture site and she was reporting pain right at the insertion site so taping the drain did help and giving another lot of morphine. However, with her I felt that the more morphine she had at that point the more labile she became emotionally. When she woke up she was just sort of wailing. So in some ways [even though] we gave her quite a lot of morphine ... she seemed to be almost getting worse as far as her pain expression was ... [concerned]. Even though she was looking a little bit more relaxed. So it was a little bit paradoxical really (emphasis added).

At other times *being cautious* may lead to the conclusion that while analgesia is still needed, the amount needs to be carefully adjusted. One nurse described her/his reasons for adjusting a child's intravenous morphine infusion. The boy had had

surgery for a perforated appendix with a pelvic abscess the day before, and he had been on a morphine infusion overnight. The night nurse had decided that the boy was a bit too drowsy, had decreased the infusion rate and explained her/his reasons for this decision at hand-over to the day nurse. The day nurse described her/his decision-making and interventions for this child:

So I took over at 7 and went in to assess his general condition ... he was certainly ... lying quite comfortably in the bed [which] I could see from ... the way his body posture was ... he certainly wasn't rigid in the bed, a lot of times you assess these children post-operatively and they're like boards. So I felt that from that aspect ... well he was probably not too bad. What I did note, I listened to his heart [rate] and took another respiratory rate, which were 18, which was reasonable. [I] had a chat to his mum because he certainly had [one of] the side effects of ... morphine ... the very pin point pupils. What I did note [was] that while his respiratory rate was acceptable he was extremely drowsy, I could engage him in conversation but he was actually having difficulty sort of talking to me and I noticed his eyes. He was trying to open his eyes and [I] said to [his mother]. 'You know its a bit like he's had a six pack of beer' and she thought that was quite funny. So I could see why the night nurse had reduced the rate. I got out my ... I always have my Faces Pain Scale in my little pouch here [wears a bum bag] ... I didn't know whether ... anyone had had time to explain that to him pre-operatively so I gave him a little run down on what my happy and sad faces were about and I thought well this will let me know whether he's actually even able to sort of try to tell me how he's feeling. He was whispering so I couldn't hear him very well and he tried really hard to and he in fact did point to face 'Nought' which was the 'no pain' but he was still ... quite drowsy so I explained to [his] mum ... I said 'Well, I think he's quite drowsy at the moment, probably as a side effect of the analgesic medicine. What we will do is lower it [the morphine infusion] down just another wee shade [and] see if it will ... wake him up a bit,' I said, 'bearing in mind that I may have to adjust this [further] as the morning goes on'. ... Also at that stage just to reassure myself that everything was 'A' okay, I double checked his morphine prescription sheet that it was the appropriate dose that had been, you know, charted for him, that the rate was actually what he was getting incrementally an hour. Everything was well within the normal limits; it was just having a lovely effect on him.

This nurse checked everything carefully before reaching a conclusion and making the decision to adjust the morphine infusion rate. S/he showed care, forethought, prudence and caution.

Significance and issues associated with being cautious

Thus, nurses may demonstrate *being cautious* while *managing pain* in a number of ways: by carefully checking the accuracy of patient prescriptions; by checking the

accuracy of what is being administered to the patient; and, by prudent use of analgesics.

The property *being cautious* is supported by the area of law that deals with negligence which in the case of health care seeks to redress the loss suffered by a consumer as the result of any failure of the health carer or hospital to provide proper professional care. Although the ability of a New Zealand consumer to sue a health carer in negligence for compensatory damages is limited by the Accident Insurance Act 1998 where cover is provided by that Act, nevertheless the consumer can take a civil action for exemplary damages if their loss is not covered by the Act (Wallace & Johnson, 1995). Failure to maintain proper professional standards may also breach the 1994 Code of Health and Disability Consumers' rights especially Right 4; Right to services of an appropriate standard.

Because of the dependence on the nurse for physical and mental care wellbeing of the patient, the law has established that the health carer owes what it calls a 'duty of care' to the patient. This is based on the principle that a person must take reasonable care to avoid acts or omissions which would be likely to harm any person they ought reasonably to foresee as being so harmed (their legal 'neighbour'). If they fail to do this, they may be subject to the civil action of negligence. Where the health carer's act has been so grossly negligent as to have been deliberately reckless of life and limb, it may be prosecuted by the Criminal Courts as criminal negligence or manslaughter [Crimes Act 1961] (Wallace & Johnson, 1995, p. 120).

It is also supported by Nursing Council's Code of Conduct for Nurses (1996) which states that the nurse justifies public trust and confidence by using professional knowledge and skill to promote patient/client well-being (p.4). In addition, the Code expects nurses to take care that a professional act or omission does not have an adverse effect on the safety or well-being of patients/clients (p.4).

Being cautious is also supported by Benner's (1984) researched domain; monitoring and ensuring quality of health care practice, because at times it will involve the competency assessing what can be safely omitted from or added to medical orders. Benner proposes that nurses must use discretion in carrying out medical orders rather than simply carrying out medical orders without question. In particular, the nurses in this study clearly demonstrated caution in their careful checking of doctors'

prescriptions. However, like the nurses in Benner's study, the nurses in this study also seemed to view their monitoring of another health professional's practice as a 'system failure' rather than as a specific nursing competency that makes a significant contribution to quality patient care.

In the interview sessions nurses talked about how much of their time was spent in preventing and spotting errors. They did not talk with pride about this skill. Instead, these competencies were not presented as competencies but as 'system failures,' ... It was as if the system should be better and that potentially dangerous errors should never happen. The nurses were visibly uncomfortable talking about this aspect of their role that takes a considerable amount of their time. The eminent physician and medical essayist Lewis Thomas describes this domain with ease and confers upon it the respectability that the nurses seemed reluctant to acknowledge. His observations come from the perspective of a physician and a patient: My discovery, as a patient first on the medical service and later in surgery, is that the institution is held together, glued together, enabled to function as an organism, by the nurses and by nobody else (Benner, 1984:135-136).

The ability of the nurses in this study to detect prescription errors and negotiate corrections with doctors undoubtedly increased the safety of pain management for children in their care. Their monitoring role enhances quality health care practice and is a competency, which ought to be highly valued by patients, nurses, doctors, and the employing institution.

Managing risk

Although *being cautious* contributes to patient safety all therapeutic interventions and regimens contain known risks that can be minimised. Consequently, it is important that nurses know what these risks are and what strategies have been shown to reduce or control risks to the patient. The third property of *being safe*, therefore, is *managing risk* associated with administering analgesics. Each method of medicine administration has its risks. In New Zealand, a doctor usually establishes intravenous access, and then nurses administer morphine as a 'push' or bolus, or via a continuous infusion. Administering morphine intravenously means the onset of analgesic and sedative effects is much more rapid than via oral or intramuscular routes. The nurse must be able to recognise respiratory depression if it occurs and know how to respond appropriately. Intravenous access lines may become blocked, extravasate, fall out, become disconnected, or the site become infected. Nurses are expected to

know about all these risks and to take the necessary precautions to manage or minimise the risks.

A situation involving a boy of 8 years with a compound fractured tibia and fibula whose intravenous line had extravasated early in the morning so that he had no longer had intravenous access for fluids, antibiotics or analgesia was described earlier.

Sometimes analgesia is administered via an epidural cannula, which carries similar, potential risks to the intravenous route: dislodgment; extravasation, and infection. In this unit an anaesthetist inserted the epidural cannula and administered the analgesic opioid, not the nurses. The nurses reported that some children, following major urological surgery received analgesia via an epidural for up to 48 hours. According to the epidural protocol, the nurse was required to monitor the dermatome level (level of analgesia) and respiratory rate to ensure these stayed within the parameters charted by the anaesthetist.

The risk of dislodgment is increased in very young children who may need to be sedated to stop them being too active while the epidural is in situ.

The first child I saw walking with an epidural ... the anaesthetist, I don't know whether he was doing a trial or, [but] it worked out that this child didn't have hardly any motor block at all so they got medical illustrations to come down and take photos of him walking. Some people get more motor block than other. Some people just get sensory block and then other people get such bad motor block their legs are just dead, they're like big tree trunks. It can depend on the drug used. We use bupivacaine with fentanyl and adrenaline. But last week I came across a girl who got really bad motor block and the anaesthetist decided to use another drug called robovicaine, which is meant to produce less motor block ... which I found interesting because I had never come across that before. But with an epidural you don't want someone to be walking all over the show because they might dislodge it.

Not all of the risks in pain management are physical; some are psychological. For example, analgesics by the rectal route (e.g. paracetamol or Voltaren) were sometimes prescribed postoperatively for children. Administration of medicines by the rectal route has particular comfort concerns and it has special psychological risks.

The nurses all felt that it was very important to explain to both child and parent the reasons for giving drugs by this route, and how it would be absorbed and work. Many children in New Zealand preschools and schools will have been taught the health promotion programme 'Keeping Ourselves Safe.' The programme teaches children about safe and unsafe touching of their body by others. Two nurses explained the psychological risks associated with administering rectal medications to a child, and the steps they took to manage this risk.

Quite often children that have had tonsils (tonsillectomies) ... will be given PR paracetamol intra-operatively ... with parental consent. There tends to be a wee bit of a reluctance to give PR analgesia probably just in terms of the connotations of abuse and ... in terms of putting things up children's bottoms and everything is done with parental consent, or where possible, done with parental consent.

You explain it fully to their parents that there's 'bottom medicine' you tell them it sort of goes up into their stomach from that end which isn't strictly true but it gives them a general idea. [I tell them] that it gets absorbed into the blood stream from their bottom. I usually say that [while] you don't normally let people touch our bottoms ... this is special 'bottom medicine'. You ... have to be careful with that. We ... use ... paracetamol PR a lot; especially for ... children who have had neurosurgery that tend to be vomiters and so we use suppositories for them.

These nurses were aware of the potential for accusations of child abuse when administering rectal medication and they took steps to manage this risk. However, sometimes nurses have to manage more than one risk at a time.

An example was with paracetamol and this was with a little girl who had [a] medulla blastoma and she needed regular paracetamol, [but] she began vomiting and she had a lot of intracranial pressure. So she needed the paracetamol rectally, which meant she had to have a larger dose less frequently. Then she became neutropenic and [that is] a contraindication to give any rectal medication ... so we then had a dilemma as to what we should do.

In the end it was decided that the girl really needed the paracetamol and that analgesia was a higher priority than the risk associated with rectal administration in the presence of neutropenia. The poor prognosis for this condition was also an important consideration. Thus, nurses are continuously engaged in *managing risk*, which may be physical or psychological.

Significance and issues associated with managing risk

A great deal of nurses' work involves *managing risks* of various kinds by anticipating and detecting significant changes in a patient's condition which Benner (1984) termed the diagnostic and monitoring function domain. In addition, nurses take steps to prevent complications such as infection which Benner (1984) termed the administering and monitoring therapeutic interventions and regimens domain.

Managing risks also requires nurses to assess what can be safely omitted, or added to, medical orders. Benner (1984) termed this the monitoring and ensuring the quality of health care practices domain. The nurses in this study identified that a heavy workload could make it difficult to follow the rules. Therefore, *managing risk* also involves coordinating, ordering and meeting multiple patient needs as well as coping with staff shortages which Benner (1984) termed the organisational and work-role competencies domain.

Finally, *managing risk* also involves consideration of the social context in which pain is managed. There may be psychological risks to manage, as well as physical ones. Nurses need to be aware that lay people, particularly children, may view rectal administration of medicines as a form of child abuse unless care is taken to explain this method so that it is understandable and acceptable to the child and parent concerned.

Right responding

Sometimes, despite nurses' efforts to manage risks adverse patient events occur. When a patient experiences adverse treatment effects, their condition deteriorates or becomes life threatening it is crucial that the nurse can respond in a timely and appropriate manner. The fourth property of *being safe* therefore, is *right responding*. For example, regular, frequent monitoring of the child's level of drowsiness and respiration rate for signs of depression are high priorities when morphine or some other opioid drug are being administered. Knowing the antidote and what action to take if the child's respiration becomes depressed, the child becomes too sedated, or experiences some other adverse effect are also essential to safe practice.

A nurse described those aspects of the protocol which deal with monitoring patient response for those receiving a continuous intravenous morphine infusion and responding in an emergency:

The protocol is to check their respiration every hour and if their resps are getting less than 12 per minute ... to give them naloxone ... but that has never happened to me.

S/he demonstrated knowledge of the right response if the child's respiration rate should become seriously depressed. The other adverse effect from opioid analgesia that might cause concern is increased drowsiness. Monitoring the level of sedation was one of the parameters identified on the analgesic infusion charts (both intravenous and epidural). When two nurses noted that a child receiving morphine was too drowsy they reduced the rate of the infusion; they responded according to the protocol.

I [noted] that while his respiratory rate was acceptable he was extremely drowsy. I could engage him in conversation but he was having difficulty talking to me [...] So I could see why the night nurse had reduced the rate. I said [to his mother] I think he's quite drowsy probably as a side effect of the analgesia [...] I think what we will do is lower [the rate] just another wee shade and see if it will wake him up a bit.

The protocol for continuous infusion by epidural also requires the nurse to respond appropriately if the analgesic effect begins to involve spinal nerves that control the muscles of respiration.

The epidural's charted [...] so that if the block goes above a certain level the epidural should be turned off.

One of the nurses was asked to clarify what s/he meant when they said that they did not have any concerns about giving children morphine at the first interview. Her/his explanation showed that s/he knew the importance of *right responding* as part of *managing pain* safely.

I guess it's not so much that I don't have any concerns. We hear of the potential side effects in terms of respiratory depression and we hear of some allergic

reactions. But I'm also aware of what to do about it in terms of giving them something that will reverse the narcotic (nurse's emphasis).

Knowing what to do if there is an untoward patient event is essential for safe practice and appears to engender feelings of confidence in the nurse. Another nurse described how painful muscle spasms associated with fractures were treated.

The muscle spasm that they get with their fractured femurs that sets in once they've been in traction for about 10 to 12 hours, the muscle spasm pain sets in also. So you've hopefully got the bone pain under control but the muscle spasms are painful, different pain. It frightens them, frightens the parents and the child because the leg jumps quite vigorously. So we use Valium for that.

Nurses, therefore have to be able to recognise adverse patient events that require medical intervention; the nursing role in monitoring and responding to adverse patient events is crucial to good patient outcomes. The property *right responding*, as used here, also includes seeking a medical review of the patient when the pain relief is inadequate or the patient's condition deteriorates.

You get the odd child where they're having a lot [of increments] - 4 or 5 every hour and you realise that they're going to need a lot of morphine over a 24-hour period [...] It catches up on you. It's not straight away [that you realise that over] the last 3 hours you've given them many increments. So [I ask myself] 'What is going on here? Is it effective enough? Do I need to give a more regular amount as an infusion? Do I need to get a second opinion like the Pain Team? And usually it would be the Pain Team [that I would call].

She had a really good afternoon and sat up at the desk and we talked about girl things, horses, magazines and things. Then at 7 o'clock at night she says 'I want to go back to bed' and she went back to bed and started crying saying 'I'm sore, I'm sore, I'm sore'. I thought it was very sudden. I thought 'What's going on here?' (Especially after having had this chat and laughing) 'I'd better think seriously about this pain. And I got her reviewed again and the doctors felt there was nothing wrong with her. [They said] there was no physical reason why she should have this increase in pain. It was [in her] chest and then it was in the middle of her abdomen sort of epigastric and I thought well she had been on Voltaren [diclofenac] so maybe it was epigastric pain. So we tried giving her some Aludrox and she vomited. By that time she was extremely agitated and upset. I thought maybe she vomited because she was upset. The pain was [still] in her abdomen and I [asked] 'Where's the pain?' and she had just given up. She'd say, "Oh, I don't know. I don't know where it is. It's just sore everywhere.' She'd actually developed a bowel obstruction. [...] I had her reviewed by the surgeons and by the paediatric team neither of which could find any problem. They just said 'Keep giving her fluids, just carry on, give her as much analgesia as she needs.'

And she just got worse and worse and by the time I went off at 11pm she had vomited again. It was [like she] was almost giving up. You'd [ask] 'Does it hurt?' and she'd say 'Yes. It's just so sore.' She was just lying there limply. She had developed bowel obstruction and had to go back to theatre.

This nurse sought medical assistance when the patient's pain suddenly worsened, s/he responded appropriately in a rapidly changing situation. However, when medical staff is unable to determine what the problem is this makes it difficult for the nurse when the patient's condition does not improve to convince the doctor that further review is needed. The same nurse went on to say with reference to the same patient:

It's difficult when she's saying 'I've got pain.' and you ring the doctors and say '[Please] come and do something.' and they say 'Well, we only saw her this morning and she was fine and we're not coming again.' And I say 'Sorry [but] she needs reviewing.' They come in and say 'Well, listen to this. Do that. No, there's nothing wrong with her. Carry on.' And you think, 'Well what do I do now?'

When medical staff were unable to determine what the problem was the nurse continued to monitor the girl closely and was prepared to insist on further medical reviews until the problem was diagnosed.

Significance of right responding

Some support for *right responding* is evident in Benner's domain of effective management of rapidly changing situations since it involves skilled performance in life-threatening emergencies when rapid grasp of the problem is vital as is rapid contingency management of a patient crisis until a doctor arrives. As Benner says, it takes considerable knowledge and skill to determine the seriousness of the situation and whether immediate intervention is needed. Some nursing texts and pharmacology texts also identify the importance of nurses knowing the right response in an emergency.

This property of *being safe* has also been described as part of the fifth stage of the *managing pain process*. Thus, *right responding* is a property of both the core category and the core process and is one example of safety considerations during the *managing pain process*. Further research is needed to explore this relationship.

Conclusion – the significance of being safe while managing pain

The nurses concern with safety during the process of *managing pain* is not surprising given that safe practice was probably inculcated during their student days at nursing school. Student nurses must demonstrate adequate knowledge and safe practice for their school to recommend that they are suitable candidates to sit the State Final Examinations. The Nursing Council of New Zealand is the statutory body charged with responsibility for setting safe standards for registration and disciplining nurses and midwives who demonstrate unsafe practice. The Nursing Council's Standards for Registration of Comprehensive Nurses From Polytechnic Courses (1992) specify the safety requirement under Standard 9 where it states that *the applicant for registration is currently competent and safe to practice as a comprehensive nurse in any New Zealand setting* (p. 5).

In 1996, the Nursing Council issued each nurse with a Code of Practice for Registered Nurses and Midwives with their annual practising certificate (and all subsequent new graduates) which reminds them that they have a continuing professional responsibility to keep their knowledge and practice current in order to protect the public from unsafe practice.

As mentioned earlier nursing textbooks recommend careful checking procedures when administering medicines to prevent errors, which might harm the patient. The textbooks also recommend careful monitoring for side effects and safe storage of controlled drugs (eg. Kozier, Erb, Blais & Wilkinson, 1995). Pharmacology textbooks for nurses not only emphasise safety issues associated with safe preparation and administration of medicines but also include information about pharmacokinetics, toxicity, incompatibility, side effects, antidotes (when available), anaphylaxis and emergency care (eg. Reiss & Evans, 1995). Nurse educators and clinical nurses further reinforce all of these safety considerations to students.

However, safety is embedded in many aspects of clinical nursing practice. Nursing textbooks, which provide information about clinical skills, stress that safety is a primary consideration when carrying out any nursing procedure. Some textbooks even have complete chapters on safety. For example Potter and Perry (1997) discuss

environmental safety and injury prevention in both hospital and community health care settings.

Some researchers have also identified the importance of safety for quality nursing practice. Benner (1984), for example, identified a safety element in four out of the seven domains of nursing, which emerged from her study of novice and expert nursing practice. In the diagnostic and monitoring function, Benner said that nurses talked about *learning to work in the 'grey' zone where patient changes were subtle and the margins of safety narrow* (p. 96, emphasis added).

Effective management of rapidly changing situations means that nurses must be able to manage, as well as, prevent crises. Nurses are frequently confronted with medical crises that require immediate intervention, often before the doctor arrives. Benner proposes that *in these situations, the nurse walks a fine line between not jeopardizing the patient's life by withholding necessary life support measures and at the same time working within the bounds of safe nursing practice* (p. 116 emphasis added).

The domain of administering and monitoring therapeutic interventions and regimens includes, among other competencies, maintaining intravenous therapy with minimal risk and complications and the safe and accurate administration of medicines.

Maintaining intravenous therapy with minimal risk is particularly relevant in intravenous techniques of pain management.

Benner's domain of monitoring and ensuring the quality of health care practices contained the competencies of providing a backup system to ensure safe medical and nursing care, assessing what can be safely omitted from or added to medical orders, and, getting appropriate and timely responses from physicians. Lastly, Benner pointed out that because nurses are ever present and coordinate the multiple interactions the patient has with the health care team, they are in a position to prevent and detect errors. According to Benner nurses are:

Especially alert during the initial learning stages of new residents [doctors]. In the interview sessions nurses talked about how much of their time was spent in preventing and spotting errors (Benner, 1984, p. 135).

Thus, there is considerable evidence in both authoritative and research literature, documents, legislation and related regulations to support *being safe* as a core concern in nursing.

In summary, *being safe* emerged as a core category in this study. To some extent, this is not a remarkable finding given that the profession values safety in nursing so highly that it is the criterion for entry to practice as a registered nurse. However, discovering the properties of *being safe* that operated for the nurses in this study: *following the rules; being cautious; managing risk and right responding*, enhances our understanding of this substantive area of clinical practice. Further research is needed to determine whether these properties hold in other clinical situations.

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CHAPTER SIX

Taking Risks

Introduction

The previous chapter discussed the importance of safety in nurses' clinical practice and claimed in particular that *being safe* was the primary consideration for the nurses in this study when they were *managing pain* in children. This is because the clinical work that nurses do involves risks of varying kinds and degree. In particular, *managing pain* involves significant risks associated with both the pharmacological action of the drugs used and the methods used to administer these. Consequently, it was argued that nurses have to be aware of these risks and know what strategies they can use to reduce or control risk in the interests of patient and personal safety. Thus, one property of *being safe* involved *managing risk*. However, an interesting finding in this study was that sometimes the nurses' accounts of dealing with children's pain indicated they were *taking risks* rather than *being safe*.

A dictionary definition of risk is "the possibility of incurring misfortune or loss" (eg. Collins Concise English Dictionary, 1992). To be at risk is to be vulnerable to some form of harm. To take or run a risk is to proceed in action with disregard to the possibility of the danger involved. Thus, taking risks involves exposing to danger or loss, and acting in spite of the possibility of injury or loss to self or others.

Taking risks, as used here, refers to acts or omissions, which expose the patient to some inherent danger, related to the drug, or method of administration. It also includes actions, which expose the nurse to professional risk because s/he is not practising according to prevailing policy and protocols/rules. Excerpts from the data will be used to

demonstrate the ways that the nurses in this study took risks. It will be shown that *taking risks* involved *breaking the rules* in some way.

Taking risks

In the previous chapter it was proposed that safety is usually, the primary consideration in nursing practice and that a major strategy directed at *being safe* involved following various sets of rules. It was argued that the particular rules which relate to pain management include institutional protocols for administering analgesics by the intravenous or epidural route, the five rights of drug administration, and legislation related to prescribing, prescriptions, and controlled drug security and administration. However, there were occasions when priorities, other than safety, appeared to take precedence in the nurses' decision-making. The nurses described numerous occasions of dealing with children's moderate to severe acute pain when they wanted to relieve the pain promptly and effectively. Adhering to unit policy and protocols was time consuming and even if effective only lasted a short time. Their dilemma was summed up well by one nurse who said:

[Sometimes the] *nurse's legal responsibility in terms of doing what's prescribed and doing what [you] know is best and safe for the patient is not always the same thing.*

In other words, prompt and effective pain relief was a higher priority than following unit policy and protocols.

Breaking the rules

During the collection and analysis of interview data the researcher noticed that the nurses described a variety of rule-breaking behaviours. They appeared to break the rules for increased efficiency, or the sake of the patient. The following excerpts illustrate the steps some of the nurses took, or were prepared to take, when prompt relief of a child's pain was considered a higher priority than abiding by the rules.

Nurse: *I couldn't have given her any more morphine than I did within the ten minutes that she was having the chest tube taken out.*

Interviewer: *So you would always give it exactly as it is prescribed?
Whatever [drug] it is? Whatever the incremental dose is?
Then you wait for 15 minutes then give another one?*

Nurse: *Yes, as a rule, yes, but not always. If someone's screaming out and they're in terrible pain well I don't think there's going to be any compromise to their respiratory rate so I'll just keep on giving it. I can think of a girl who had leukaemia who had really bad bone pain ... I think I sat there with a huge handful of increments and just kept on pushing them in. We use the increments as a safety measure to make sure that we never over-medicate people. But I think then again if you always waited for 5 minutes and someone was in excruciating pain, well it's just not on really.*

I think many of my colleagues would be like me, they would just keep on putting it in [giving morphine increments] if someone was in a lot of pain rather than saying 'Well the rule is' and wait 5 minutes. I guess what that means really is that our pain protocol needs to be changed because it's not quite serving the purpose for which we need it.

[Morphine increments] must be given 5 minutes apart and you must wait each time and give it ... though sometimes we do load the child, we do ... when the child is in agony we generally take 2 increments down to the bedside, give one, perhaps wait a couple of minutes and give another.

With some children you very quickly learn that you need 2 increments to get on top of it and most of us will give double what's charted [...] It's quite sensible to give them 2 increments in a row. Well, I've never gone back and got the doctor to change the prescription.

If the pain is very severe we will give 2 [morphine increments] at once, we'll give them 30 seconds apart until it just levels off a bit. I've never come across any problem with giving increments because generally the child becomes drowsy, they go off to sleep and they're not complaining of pain so you stop giving them.

I think that 0.02 mg per kg is a small dose and for some children you might give [the increment] and come back 7 minutes later and it's made no difference so you give them another 2 [increments] and then 40 or 50 minutes or an hour later they're sore again and so you give them an increment and 7 minutes later it has had no effect so you give them another. So, therefore, it takes 2 increments to have any effect so when they're sore again then I'd give 2 increments straight away [...] If it's obvious that they're requiring 2 increments of morphine every hour then you're better to give those two as one. Because otherwise you've got a child

waiting in pain longer. [...] You're better to give them a bigger dose. [...] Some doctors have this hang over of 5 minute intervals and resps greater than 12 [...] But sometimes to wait 5 minutes would be silly given the scenario I talked about before. Also if you rang a duty doctor about it wouldn't be a high priority, it wouldn't get changed. [However], if the doctor were on the ward I would ask them about it.

In each of these cases the nurse appeared to give priority to prompt relief of pain and said s/he would give more than one incremental dose of morphine in quick succession without waiting between doses. Some nurses claimed the protocol required a fifteen-minute interval between doses, others said five minutes. As discussed earlier this confusion may have arisen because the medical protocol did not specify a time interval but the nursing protocol did specify a 15-minute interval. According to McGrath (1990) *maximal respiratory depression occurs approximately seven (7) minutes after intravenous administration of morphine* (p. 119) but some of these nurses said they would administer one or more repeat doses after waiting only two to three minutes to determine either the analgesic effect or the effect on respiration. Thus, *breaking the rules* of the protocol in this way incurred increased risk of respiratory depression that might not be detected if the nurse did not remain long enough with the child. An anaphylactic response, although rare, was also a potential risk that might not be detected if nurses administered the opioid and did not remain long enough with the child.

Trying to follow the protocol and deliver timely pain relief became even more difficult when the nurse was trying to do this for several children at once. One nurse described such a situation.

I can remember sort of a 'night from hell' where I had 3 or 4 patients ... in the winter, that were all post-operative and all in pain and sort of going round with kidney dishes full of morphine increments and dropping a kidney dish full of 2 or 3 morphine increments in a child's locker ... and giving them an increment and going to the next child and doing the same thing ... and sort of just to get on top of the pain spending an hour going from child to child giving them this morphine by the time I got back to the [first] one assessing whether it [had] worked [then] giving them another ... increment So occasionally the workload is such that

it's not possible to monitor the child as closely as you would like to, to assess for the effectiveness of the analgesia or possible side effects.

In this case, high patient acuity and high patient demand for analgesics meant that, for this nurse, the choice was between following the protocol or taking a risk and delivering pain relief more promptly. It may be that this nurse also believed it would be more efficient to administer analgesics in this way. Whatever the nurse's reasons her /his actions created a number of risks. Since each child would have had a unique dose, and several children's doses appear to have been prepared and carried together into the ward, there is the risk that a child might not receive the correct dose. Leaving a kidney dish containing syringes loaded with morphine on, or in, the child's locker meant the drug was no longer in safe custody, and could be misappropriated by someone.

Administering repeat doses in quick succession without waiting the recommended 15 minutes meant that there was potentially increased risk of respiratory depression. Then, because the nurse did not stay with the child there was risk of undetected respiratory depression or other adverse event such as an allergic reaction.

Thus, the nurse broke several sets of rules: the unit's parenteral analgesic protocol which specifies a minimum time interval of five minutes between incremental doses and staying to monitor the child's respiration rate and the effect of the drug for 15 minutes. Four of the rules for safe drug administration were also broken because it was possible that the wrong drug and dose might be given to the wrong child (unless they were all receiving the same drug and dose which is unlikely), and the nurse did not stay with the child to observe for right response. Lastly, leaving a controlled drug unattended in the ward could result in some other person taking possession illegally. It is an offence to put any prescription medicine in *any cupboard, box, shelf, or other place of storage in which articles of food or drink are stored or kept ready for use; or in any place which young children or unauthorised persons have ready access* (Medicines Act 1981, section 47(1)(a) & (b)).

Sometimes nurses have to manage multiple risks at a time while trying to promote patient wellbeing. One nurse described such a situation as follows:

An example was with paracetamol and this was with a little girl who had [a] medulla blastoma and she needed regular paracetamol, [but] she began vomiting and she had a lot of intracranial pressure. So she [then] needed the paracetamol rectally which meant she had to have a larger dose less frequently. Then she became neutropenic and [that is] a contraindication to give any rectal medication ... so we then had a dilemma as to what we should do.

Thus, this nurse had a choice between two risky alternatives, which presumably were discussed with medical staff. In the end it was decided that the girl really needed the paracetamol and that analgesia was a higher priority than the risk associated with rectal administration in the presence of neutropenia.

Another form of *breaking the rules* involved prescriptions. According to the nurses, sometimes the prescriptions that doctors wrote were incorrect or not what the nurse wanted - perhaps the dose was too high, or the dosage frequency was not enough. Two nurses described what they would do if the prescription were incorrect or inadequate.

Nurse: *We find they've charted it wrongly, inappropriately and we just adjust it*
 Interviewer: *So you have to get them back to change it?*
 Nurse: *Well, they chart increments for so many milligrams, it's usually far too much and we just give under that ... so ... no, not usually.*

I ... strongly believe in giving paracetamol regularly as an analgesic and try to make sure it is charted four hourly rather than six hourly and if it is charted six hourly what I would do is give a four hourly dose and give it four hourly. Sometimes they chart a higher dose six hourly and so what I tend to do is give a lower dose and give it four hourly rather than six hourly.

The risks evident in these two accounts are that only a doctor may legally alter a prescription. The Medicines Act 1981, Section 19(1) states that *no person shall*

administer any prescription medicine to any other person otherwise than in accordance with the directions of the practitioner who prescribed the medicine. Administering a lesser amount of analgesic may mean that the analgesic effect is not adequate, so that the child experiences more pain.

In summary, it appears that when the nurses in this study were faced with rules that interfered with timely and effective pain relief they sometimes made a deliberate decision to ignore the rules. In other words, when faced with a choice between a relatively risk free alternative or a risky alternative, they showed a propensity to choose the latter if in their opinion this alternative was in the child's best interests. However, there may also be situations where the nurse must choose between two risky alternatives if patient interests and well-being are to be promoted; there is no risk free alternative.

Significance of risk taking in nursing practice

Most of the nurses in this study indicated they were prepared to take some risks in order to relieve a child's suffering. The kinds of risks they took usually involved *breaking the rules* in some way. Systematic search of computer databases found that there is a plethora of health literature on at risk population groups and risk behaviour mainly in adolescents, for example, smoking, unsafe alcohol and sex practices. However, most of the research about risk taking is in the psychology and business literature. Limited literature on risk taking in nursing was found on the CINAHL database and none that specifically addressed risk taking in pain management.

Benner (1984) lends support to some risk taking in nursing. She proposes that nurses should use their discretion when interpreting medical orders even though it may entail some risks.

While medical orders provide the guidelines for many of the nurse's activities, nurses must use discretion in carrying them out. They are expected to assess what they should do to provide the best possible care for the patient rather than simply carry out by rote medical orders, even though this may involve risks for them (Benner, 1984, p. 139-140). [Author's emphasis]

The nurses in Benner's study also adapted medical orders in the interests of patient's well being. She further pointed out that while protocols or guidelines have their place they can never be designed so that they fit all practice situations.

There can never be precise scientific guidelines for these decisions, because there could never be enough research done to capture the particulars of all situations (Benner 1984, p. 141).

Masters and Masters (1989) also support nurses' independent decision-making. They proposed that some decisions in nursing are relatively simple to make, involve few risks and reasonably, predictable outcomes, whereas other decisions are more complex, involve high-risk situations where the clinical outcomes are less predictable. According to Libby and Fishburn (1977), available evidence suggests that a person's previous training and experience in specific risk-taking situations often influences propensity to take or not take risks. Master and Masters, on the other hand, questioned whether practical experience had any influence on risk taking propensity. They investigated the risk-taking propensity of recently graduated ADN's and BSNs without experience in Kansas, using the choice dilemma questionnaire (CDQ) which they said had been developed by Gupta in 1984. No difference in risk taking propensity between the groups was found. However, the statistics did show a greater propensity for risk taking in the groups studied than the general population.

Unlike the Masters and Masters study, the nurses in this study did show a propensity for risk taking. However, the nurses in this study had all had considerable nursing experience, unlike the recent graduates involved in the Masters and Masters (1989) study. Benner (1984) has shown that novice nurses' practice is rule governed and that it takes time to develop context-dependent judgment and skill in real clinical situations. Masters and Masters comparison groups were both probably still at or near the novice stage and as such their combined lack of experience with risk- taking situations meant they were less likely to demonstrate risk taking. On the other hand, a study that

compared novice and expert might show that years of practical experience do influence nurses' propensity to take risks.

Another factor which influences risk taking propensity has been proposed by Weiss (1985), who stated that risk taking means different things to different people. What one person views as a threat because he thinks he will fail, another person will view as a challenge because he thinks he will be successful. In this study when nurses described administering repeat doses of morphine without waiting the required 15 minute interval, they appeared to believe that they would succeed in relieving the child's pain and that the risk of respiratory depression was minimal.

Moore and Gergen (1985) studied risk taking in organisations and concluded that individual risk taking involved a propensity or inclination to take or avoid risks. They said that

Well reasoned risk taking requires careful decision-making. The value of the risk is in the potential payoff, not in taking the risk. The process of risk taking involves both making the decision to take risks and developing a strategy that minimises the risk (Moore & Gergen, 1985, p. 73).

When nurses in this study chose to take risks when administering analgesics this was because they put a higher value on timely and more effective pain relief for the child than the risk involved; the potential payoff was the primary consideration. However, their understanding of the risks involved was unclear; they did not mention any strategies to minimise the risk.

Lattimer and Winitsky (1984) proposed that all decisions end up being a choice between a risk-free alternative and a risky one. In this study many of the pain management decisions involved choice between a relatively risk free or safe alternative and a risky one. However, there was also an example of a nurse having to choose between two risky alternatives. Thus, not all decisions involve choice between a risk-free and a risky alternative.

Lattimer and Winitsky went on to argue that there are times when it may be necessary to be 'wrong' at certain stages in order to be right at the end. *This is especially true when something is judged wrong according to the existing frame of reference, and then found to be right when the frame itself changes* (p. 23). In this case, it could be argued that the frame of reference included the protocols and principles for safe medicine administration and some would suggest that not adhering to these was wrong. Yet from an ethical perspective it could be argued that the nurses' rationale was ethically sound; the nurses' decisions and actions promoted the best interests of the child and reduced suffering.

Another study, which found that nurses sometimes engage in secret rule breaking or bending, was that conducted by Hutchinson (1990). In Hutchinson's study, the nurses also reported that they bent the rules for the sake of the patient and she called this *responsible subversion*. It was argued that the nurses' behaviour was *responsible* because they used their best nursing judgment to decide what rule to bend, and when and how to do it. The nurses in Hutchinson's study described themselves as acting responsibly in consciously planning what was best for the patient. However, their behaviour was *subversive* in that they violated rules made by the hospital and nursing administrators or physicians. According to Hutchinson in some instances, they violated the State Nurse Practice Act. Thus, varying degrees of *responsible subversion* were evident. An example of a minor subversion was allowing visitors in during no-visitors hours; a major subversion was giving a medicine without a physician's order. Hutchinson proposed that responsible subversion is a complex process that requires energy and effort; following the rules is inevitably easier.

Unlike administrators and physicians, who can essentially create rules, nurses do their work of patient care within a context of rules imposed by others. Many times the web of institutional and medical rules conflict with the nurse's own internal 'rules' or beliefs about patient care. Responsible subversion occurs only in response to a conflict between systems and/or people. A conflict exists when the accepted rules in a given situation prohibit nurses from doing what they believe is in the patient's best interests (Hutchinson, 1990, p. 7).

Hutchinson concluded that responsible subversion could result in positive or negative consequences. *If responsible subversion is successful the patient benefits and the nurses continue their work without difficulty (p.14-15)*. . Eventually if there are no negative consequences the rules may even be changed. On the other hand, responsible subversion sometimes creates problems for the nurse who bends the rules and is caught. The nurse may be reprimanded, named in an incident report, transferred or even fired. *Violations of the Nurse Practice Act could result in actions by the Board of Nursing that affect the nurse's license* (Hutchinson, 1990, p. 15). The nurses were aware of the potential personal consequences and this was why they so carefully evaluated such decisions and covered themselves. *Covering* involved devising a rationale for the rule bending behaviour, so that the nurses could always explain why a certain action benefited the patient if they were caught. Along with these external sanctions, the nurse who got 'caught' was affected personally, often deciding to become less of a patient advocate. According to Hutchinson, these nurses came to believe that following the rule 'to the letter' was the only way to survive. She said they described feeling as though they had no autonomy, that their independent nursing judgment was not valued. Sometimes responsible subversion affected the patient or family in a negative way and in such cases the rules were inevitably tightened by the rule-makers. Finally, Hutchinson proposed that her study explained how nurses make decisions about what is professionally right or wrong in a context of ambiguity, conflict, and frustration.

Other writers discuss the importance of risk taking for increasing professional power, for enhancing professional advancement, job satisfaction and patient advocacy. Gillam (1991) suggests that safeguarding patient well being and promoting their interests are two very different things. Safeguarding could be seen as preserving the status quo, while promoting implies a process of active furthering. Therefore, if nurses work over-zealously to safeguard patients they may end up not promoting patient wellbeing. Consequently, if it can be shown that there are benefits in taking a particular risk on behalf of a patient then it may turn out to be irresponsible not to take that risk. Gillam concludes that perhaps nurses almost have a duty to take risks.

Dobos (1992) also proposes that nurses' willingness and ability to take risks are fundamental to patient advocacy as well as their professional advancement and job satisfaction. Her study investigated nurses' perspectives on risk in clinical practice using grounded theory methodology. Dobos found that risk in clinical nursing practice is defined by uncomfortable and typically unavoidable role-related situations characterised by high unpredictability and negative or hostile overtones, dependency on others, unpleasant emotions, and health threats that extend beyond working hours. For example, legal liability and the results of exposure to disease and injury remain with a nurse for extended periods. Dobos concluded that risk is a continuing presence for nurses in clinical roles. Many risks are unavoidable and even when precautions are used this may still increase the nurses' risk in other ways. For example, a nurse may decrease risk by improving her/his knowledge and competence through advanced education and specialty certification. However, this may result in the nurse being the target of criticism from peers, physicians or managers. *The nurse's increased clinical competence and confidence enable him/her to question the clinical practice of others and recommend changes in standards of care. These questions and suggestions may be unwelcome and may remain inadequately answered or unsupported* (Dobos, 1992, p. 1308). What is needed, according to Dobos, are strategies to reduce the risks associated with nurses' clinical practice.

Wolfe (1994) also argues that risk taking is ever present in nursing but proposes that the nature of the risks and expectations of management have changed recently.

Until recently, traditional patterns of risk taking among nurses were more commonly based on assuming risks for others rather than themselves. Meeting the needs of others and discharging duties, even though predisposing nurses to such blatant risks as back injuries from heavy lifting or injuries from disoriented or violent patients, were assumed to be a necessary responsibility and expectation. These risks and the more invisible ones associated with such contemporaneous infectious diseases as acquired immunodeficiency syndrome (AIDS), hepatitis, a resurgence in tuberculosis, and the high stress and burn-out behaviours associated with many nursing positions continue to exist at even greater levels.

Inherent in the role of today's nurse is the ability to make decisions, often with risk, at both individual and a collective level (Wolfe, 1994, p. 43).

Wolfe proposes that now, more than ever before, nurses are being pressured to employ risk-taking behaviours in both clinical and educational settings. Formerly, nurses were expected to follow the protocols of their institutions with minimal regard for professional autonomy and accountability. However, researchers such as Benveniste (1987) have argued that rules work well when the future is predictable, unvaried and repetitive but not when it is not always clear what should be done and how it should be done, when tasks are varied and unpredictable, and when rules do not fit reality. According to Benveniste when learning and adaptability are important, rules and routine can reduce or eliminate discretion and constrain the ability to solve problems. Wolfe (1994) suggests that Benveniste's theory regarding the negative impact of rules and regulations on organisational effectiveness may be at the heart of the current shift by large bureaucracies to adopt participatory management styles. *The needs for increased problem solving and adaptability have become crucial to the very survival of all organisations. Companies must rely more and more on their people to make decisions on matters for which a routine response may not exist (Wolfe, 1994, p. 45).* She proposes that never has this need been felt more acutely than in the health care delivery system. Cost containment, increased patient acuity, earlier patient discharge and high staff turnover appear to be influencing hospital executives to consider new, more autonomous systems of delivery.

Consequently, whether hospital management's motive for the current recognition of the value of nursing professionalisation is a selfless one or more likely an acceptance of its necessity for the bottom line, nurses are now expected to take professional risks for both themselves and the profession, with an emphasis on independent functioning (Wolfe, 1994, p. 45).

Conclusion

The notion of risk taking in nursing practice appears to challenge the widely held belief that safety is paramount. Some authors (eg. Masters & Masters, 1989; Hutchinson, 1990;

Dobos, 1992) have explored the propensity for risk taking among nurses, others have discussed its significance and even suggested there are pressures for nurses to employ risk-taking behaviours in clinical practice (eg. Gillam, 1991; Wolfe, 1994). However, *taking risks* in pain management appears to be a novel concept. *Taking risks* in pain management involves nurses knowingly choosing one, or more, risky alternatives and involves *breaking the rules* for safe, and/or legal drug administration and storage. The experienced nurses in this study appeared to perceive promoting patient wellbeing as a higher priority than strict adherence to rules which might hinder the provision of timely, quality care. Hutchinson (1990) also found that nurses bend the rules for the sake of the patient. *Taking risks* while *managing pain* enhances our understanding of how nurses make decisions about what is the professionally right thing to do in clinical situations characterised by ambiguity, conflict, and frustration.

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CHAPTER SEVEN

Being Ethical

Introduction

According to Beauchamp and Childress (1994) *ethics* is a generic term for various ways of understanding and examining the moral life of persons, while the term *morality* refers to social conventions about what is right and wrong human conduct. Examination of the moral life may be from either, the perspective of how things are (descriptive), or how they ought to be (prescriptive). During the collection and analysis of interview data, the researcher became aware of an emerging ethical perspective on *managing pain*. This was evident when the nurses in this study referred directly to either particular ethical principles or virtues, or alluded to these when discussing what they considered was 'good' pain management. To account for this ethical content in the nurses' pain management the gerundive form *being ethical* was adopted. *Being ethical* in this study contains three conceptual properties: *doing good*; *being trustworthy*; and, *being an advocate*.

However, the nurses also described situations, which made it difficult for them to do what they believed, was the right thing for the patient. This led to painful feelings, which Jameton (1984) has defined as *moral distress*. Each of these ethical concepts will be illustrated using excerpts from the data, and discussed with reference to ethics literature and professional codes of ethics.

Doing good

The ethical principle, which shapes the first conceptual property, *doing good*, is beneficence. According to Beauchamp and Childress (1994), in the broadest sense,

beneficence refers to an action done for the benefit of others. They propose that beneficence requires taking action by helping and that it has three forms - preventing harm, removing harm, and promoting good.

The nurses in this study made frequent references to promoting good, in relation to *managing pain* in children. All the nurses in this study appeared to believe that relieving children's pain is a 'good' in itself, and that children should not have to suffer unnecessary pain. For example, a nurse expressed this shared belief as follows:

That's one of my personal beliefs that a child should never be in pain and you've got to make sure [that] they're not in pain before you don't give them pain relief (emphasis added).

According to another nurse good pain management involves diligence on the part of the nurse, that is, proper care and attention and doing the right thing; in this context this involved good pain control.

We've needed to be very diligent in making sure that her PRN analgesia, which is the oral stuff, is always every 4 hours because she needs it for background pain (emphasis added).

Even though it [the incremental dose] is on a PRN basis you're better to give it regularly 4 hourly for good pain control and often that will mean explaining to the parent that the child may be woken up. It sounds strange, fancy waking them up to give them some pain relief.

Thus, timely and effective analgesia removes the harm of suffering pain. In addition, as discussed in the previous chapter, these nurses considered prompt and effective pain relief a higher priority than following the unit's policy and protocols for administering opioid analgesia. In other words, *doing good* had a higher priority in the nurses decision-making than preventing possible harm associated with administering repeated small doses of morphine too quickly.

However, according to the nurses some doctors preferred that they withhold analgesia until a diagnosis had been made. One nurse talked about her/his ambivalence with regard to withholding analgesia from a child experiencing pain.

I was really unsure as to whether that was the right decision or not, I felt that her pain did need treating but after repeated reviews there was no cause for her pain found and even though it later transpired there was a cause. To put a child on a PCA for a pain of unknown cause can be a little bit dangerous because you can take the pain away. I mean if a child came in with abdo pain, for example, and we were suspecting an appendicitis, and this has happened to me a number of times, and you think 'Right, this child is very distressed, the parents are distressed, they're in pain, [and] need pain relief [and I've then] given them a number of morphine increments. Immediately afterwards the doctors have come in and reviewed them and felt there was nothing wrong with the child. So what I tend to do now is explain to the parents and the child that. 'The doctor needs to see how I know you are ... if I make you feel better then the doctor's going to come in and say there's nothing wrong with you and yet you [were] feeling very sore and they might not realise that.' I've found that explaining it like that, as long as the doctor doesn't take too long, has been very effective. There's a balance - you need to treat the pain too but not at the expense of finding out what's causing the pain (emphasis added).

Thus, it seemed that sometimes the nurses also decided to withhold analgesia because they were concerned that the child might go undiagnosed. Their rationale was that the nature and location of the pain might be key symptoms, which would assist medical diagnosis.

Consequently, although the nurse may want to relieve the child's pain because this is the humane thing to do it may sometimes be necessary, and desirable, to withhold analgesia temporarily. The decision to withhold analgesic medication until a diagnosis has been made, ultimately benefits the child but at the time may seem more like harm, particularly to the child and family, which was why the nurse was careful to explain her/his rationale to the child and/or family.

Just as the nurse's inaction may contribute to a child's pain so too may nurses' actions. Many treatment and nursing procedures directly contribute to patient pain. In the postoperative patient nurses aim to prevent complications of immobility which usually involves requiring the patient to move about the bed and/or ambulate. Two nurses explain

the importance of adequate analgesia, to allow relatively comfortable movement and to aid recovery.

She'll tend to lie in the bed as stiff as a board and not move very much and it's the thing that all the nurses notice, diligent nurses who want her to move around the bed because it is good for her. Her analgesia [has been both] intravenous and oral ... and we've needed to be very diligent in making sure that her PRN analgesia, which is the oral stuff, is always every 4 hours because she needs it for background pain (emphasis added).

(I was talking about) the importance of good analgesia in terms of aiding post-operative recovery ... because [of] the importance of mobilisation post-operatively and reducing the risk of complications in the children and that if they're sore [they will be reluctant to mobilise].

Thus, pain management is tailored to both promote good and prevent harm in both the long and short term. Several of the nurses talked about balancing benefits and harm. The nurses found that some situations posed a dilemma for them because the available alternatives could each potentially cause some harm to the child. For example, a child with an arteriovenous malformation (AVM) in his brain had already developed some loss of motor function and limb deformities, which meant that continuing to exercise and mobilise was important for maintaining his motor function.

So it was a matter of balancing - maintaining his daily activity and functional ability against the discomfort that was associated with the exercises that went along with doing that so that if he worked hard in the gym he'd come back to the ward tired and sore Or, if he tried to do some extra stuff himself in terms of daily activities ... that would have consequences in terms of being particularly sore (emphasis added).

For this child, even limited exercise and activities of daily living were painful and tiring. The nurse recognised that both exercising and not exercising posed risks, and her/his dilemma was what to do when faced with two risky alternatives. Somehow the nurse had to find a middle course, which maximised benefits and minimised harms to the child, all the while acknowledging, and managing, the pain the child was experiencing. To some extent *managing pain* always involves balancing benefits and harms to the patient, as shown in the following excerpt.

I'm aware of the adverse effects of pain on children and the need to control that so I guess it's not so much that I don't have concerns [about the use of morphine with children] or [that I am not] aware of the potential problems of giving morphine to children. It's more that they have to be balanced against the risks of not treating the pain well (emphasis added).

Some of the harms, which nurses try to prevent, are psychological, as well as physical. The nurse in the following excerpt describes how s/he prepared and supported a child through a painful procedure that the girl was dreading.

Interviewer: *So, for that particular girl, as well as giving her the morphine, would you have used anything else to try and help relieve the pain she was experiencing?*

Nurse: *Oh, non-pharmacological things? Oh, yes, I'll use lots of tender loving care, she definitely needs that, and holding her hand, touching her face and her head, just patting her on the head, I did that and just lots of positive reinforcement. I started the shift this morning knowing that the chest tube would probably come out. I started talking about it way at the beginning of the shift. Later, she had an xray. Medically it was decided that she could have it [the chest drain] out and it was quite good that we had talked about taking it out all day. I'd also promised ... that I would give her morphine while we were doing it and I was pleased that we had talked about it like that because it doesn't always work [out] quite so well but it did today probably because I wasn't all that busy. I don't know, just lucky too because the Registrar fronted up on the Ward and said 'Oh well, I'm going to take it out now.'*

Interviewer: *You wouldn't have had much time to prepare her then?*

Nurse: *No, no.*

Interviewer: *If you hadn't already done that. OK, so did she find that morphine was enough for her to bear having the tube out?*

Nurse: *Well, I guess it still hurt. She didn't cry out, so I guess the morphine was of some use. But, yes, given the circumstances I don't know if I could have done any better. It didn't take the pain away altogether but ...I guess she felt reasonably comfortable because she recovered very quickly, and she was quite relaxed. She was able to sit up and have her nightie changed and things like that and have a drink. It would have been nice if her mother was there but she couldn't be, that would have been the other thing.*

The nurse was able to prepare the girl psychologically for a procedure that she was dreading. The nurse used psychological support and touch, as well as analgesia, during the

painful procedure and afterwards the nurse thought s/he had achieved something 'good' for the child.

Children do not always let the nurse know directly that her/his care has been good. However, when children, or their family, do express appreciation and gratitude for the nurse's good care the nurse appears to feel fulfilled.

Interviewer: *You talked about how 'good' it was to hear that this child was pleased that you were going to be the nurse helping him with this. You said 'It was good for me to hear.'*

Nurse: *I think it just means that ... I guess it serves to make sense of. If you do have some idea of how you can make things less painful, more bearable. If you have some knowledge and skills it does make it so much better for the child and the parent.*

Interviewer: *So it's helpful for you to know that what you are trying to do is working?*

Nurse: *Yes, [that] it's working. It gives some sort of meaning to what you are doing.*

Thus, hearing from the child and his mother that they valued her/his work highly, appeared to give this nurse a sense of achievement and pride in her/his practice. At the same time, this positive acknowledgment was imbued with moral meaning for her/him. In other words, feeling or knowing that you are 'doing good' or benefiting the patient is what matters in nursing; what gives it moral significance.

Significance of doing good in nursing practice

In summary, *doing good* in pain management involves actions that will benefit the patient either now, or sometime in the future. Usually, doing what will benefit the patient will involve being diligent, or conscientious, about relieving pain. However, sometimes being diligent about pain relief may lead to harms rather than benefits to patients. In such situations nurses have to weigh up the relative benefits and potential harms of giving, or not giving, analgesia. Positive comment, from patients and family, about the quality of their care gives nurses' a sense of moral meaning.

Bishop and Scudder (1990) also reported that nurses in their phenomenological study felt most fulfilled when they experienced their professional care as personal benevolent caring for the ill. It did not seem to matter whether the manner of caring for the ill person involved direct care –doing for an ill person what they cannot do for themselves- or professional care –using professional knowledge and skill to eliminate or alleviate the patient’s problem. *The nurses seemed most fulfilled when direct or professional care was done out of the moral sense and in a personal relationship with ill persons who appreciated and confirmed the moral worth of their care* (Bishop & Scudder, 1990, p. 99).

The ethics literature (eg. Fowler, 1989; Lützén, Nordström & Evertzon, 1995) also affirms the importance of *doing good* (or beneficence) in health care and its corollary non-maleficence (avoiding harm). Fowler contends that it is difficult to separate beneficence and non-maleficence because in clinical situations it is rather difficult to draw the line between not inflicting harm and preventing or removing harmful conditions.

Fowler goes on to propose that from a medical perspective, the non-infliction of harm focuses on prevention of physical harm from medical treatment. However, for nurses the infliction of harm has a much broader scope. It includes not only a delegated responsibility to monitor patient responses to medical treatment and report adverse signs, symptoms or events but also avoiding inflicting harm from nursing interventions, as well as emotional, psychological, spiritual, and moral harm, including harm to the dignity of the patient. In particular, the nurses in this study described how they avoided physical and psychological harms to the patient.

Lützén, Nordström and Evertzon, (1995) in their study of ethical decision-making attempted to measure moral sensitivity in nursing practice using a specially designed questionnaire. One of the critical dimensions they measured was what they termed *expressing benevolence* or a moral motivation to do ‘good’ or act in the best interests of the patient. The researchers reported significant differences in responses to the questionnaire; nurses from psychiatric settings, and more experienced nurses agreed to a greater extent

than nurses from medical or surgical areas with the assumptions in the category; *expressing benevolence*. Consequently, the researchers proposed that if benevolence is similar to compassion, then an important question for practice, education and research follows, how can empathy be taught to nurses who lack practical experience?

Lützén, Nordström and Evertzon's (1995) concept of *expressing benevolence* appears to be similar to the *doing good* (or benevolence) that the nurses in this study described; the nurses acted to promote the best interests of the child in pain. Whereas, earlier researchers (eg. Eland & Anderson, 1977; Beyer, DeGood, Ashley & Russell, 1983; Gay, 1992) had expressed concern that at times nurses had not shown benevolence because nurses did not appear to have acted in the child's best interests.

Being trustworthy

The nurses in this study also talked about the importance of trust between the patient and the nurse, and of their being trustworthy in the eyes of the child. In relation to persons, the noun *trust* means reliance on and confidence in the truth, worth and reliability of a person. The adjective *trustworthy*, means worthy of being trusted, honest, reliable, or dependable (Collins Concise English Dictionary, 1992). Trustworthiness is considered a prominent and desirable virtue in ethics. According to Beauchamp and Childress (1994) trust is a confident belief in, and reliance upon, the ability and moral character of another person and entails a confidence that the other person will act with the right motives in accord with moral norms.

One nurse talked about trust in her relationships with child patients several times. In this first excerpt the nurse explains how she knows that the child trusts her.

His Mum said to me when she had seen that I was on duty Timmy saying "God, I hope Kim's there and she can do it because she always lets me take my time and she always stops if I say no or I want to have a break". I thought, 'Well, that ... is good for me to hear because it actually means that he trusts me' (emphasis added).

The child's words suggest he thought that Kim could be trusted in her/his dealings with him; s/he had been consistently reliable. S/he had let him keep some control over painful procedures in the past, s/he could be trusted not to hurry him, or try to take over. Clearly s/he valued the child's trust because s/he said that it was good that he trusted her/him, and s/he spoke about this again later.

- Interviewer: *You obviously think that it's really important that the child trusts you.*
 Nurse: *Yes, ... I think it was a bit like saying that maybe they relax a little bit more. [They realise] that you're not going to do anything silly, [that] you're not going to say one thing and do another.*

The ethical principle of fidelity is evident in this nurse's accounts- in other words the nurse can be relied on to keep her/his promises and thus be faithful in her/his commitments. Not only is it important to keep promises to a child, but also it is also important to give them some control over the situation, particularly when they are anxious or fearful about some procedure. One nurse explained the importance of these points when helping a child cope with a painful procedure.

We try giving the child as much control over the situation as possible. Like getting the child to take off its own bandages. Often if we're taking out an IV Luer or something, [we] get the child to take the tape off themselves or if it's a younger child we use stuff called 'Remove' that makes the tape come off easier. If they were afraid about walking, [we would] get ... them up and let ... them decide how far they're going to walk. I usually find [that] they choose to walk further than I would have made them. So, you give them some choice and control and usually I'll try ... in the morning [to] explain ... the things I can see happening during the day for the child ... So if part of the day's activity was getting up and having a walk ... and having a shower you can explain that that's what I'd like to do sometime today and allowing them to make a choice about when that happens and then sticking to it (emphasis added).

This nurse provided several examples for developing trust in the child, particularly emphasising negotiation and choice as part of the nursing care. S/he believes that being faithful to her/his commitments to the child is also very important, and other nurses also spoke of the need to be honest, reliable and keep any promises they made to the child. One nurse spoke of the commitment s/he made to a girl before the removal of a chest tube.

She's had a rough time this girl and I promised her that I would give her some morphine as we took it out and I did that. I started the shift this morning knowing that the chest tube would probably come out. I started talking about it way at the beginning of the shift just trying to anticipate that it would come out. She said ... when I turned her 'Just take it out! Just take it out!' She just wanted it out and so we talked about it. I'd also promised, well she'd asked if it would hurt and I said 'Yes, that it would hurt a bit. [But] it wouldn't be as bad as having a pleural tap' which she'd had a few days before - she'd had 3 of them actually. [I told her that] 'It would be a short sharp pain and that I would give her morphine while we were doing it' I was pleased that we had talked about it like that (emphasis added).

This nurse kept her/his promise and s/he did not promise the absence of pain. S/he shows that s/he is aware of the importance of being faithful to her/his commitments, or promises and later emphasised the importance of spending time with the child engendering trust.

You have to spend so much time explaining to children and interpreting things for them and interpreting what you are going to do. Administering pain relief for a start, making sure that a child trusts you enough to be able to give them any oral analgesia. But even coming towards their IV with a needle - I mean they always think that you're going to put the needle into their skin and of course we're never putting the needle into their skin, its always into the side arm [port] or into the buritrol [nurse's emphasis].

Being honest and explaining everything that you are going to do to the child is crucial for developing trust. Another nurse spoke of the consequences if they attempted to give children oral medicines by deceitful means.

I think the biggest problem with children is getting them to take medicines. Some children just will not take medicines and that can be a real problem. ...But some children just won't tolerate any oral syrup ... we have to get extremely creative ... to get those medications into them ... that can be a real problem. It's probably our number one problem with analgesia actually ... so we have various flavours of these various syrups and we crush pills ... and put them in a drink and put them in with ice-cream. But I always tell the child when there is medicine. It just doesn't work to try and slip it in with their food ... they'll know it's there and they'll never take anything from you again (emphasis added).

Any form of deception can destroy the trust between nurse and child. The nurses reported that sometimes parents encouraged them to put unpalatable medicine in the child's food or

drink to try and get them to take it. One nurse had this to say about attempts to disguise children's medicine:

It's very important that there's that trust there because if they take a sip of their milkshake and it tastes like Flucloxacillin they'll never drink a milkshake again and you get the situation where they won't eat and drink because they're afraid it's got medicine in it. They don't believe [you anymore] because you've already deceived them once. So, I never, ever do that. A lot of parents want you to do it and I never do that, it just doesn't work. It's not worth it. I always say to the children 'This medicine tastes quite nasty ... and that one actually tastes quite nice, it tastes like strawberries and it's important that you take it. It doesn't taste nice but perhaps if you do take it we'll have something nice afterwards to take the taste away' and it's so much more acceptable than sort of saying 'Take your medicine, it tastes nice' and they get it in their mouth and suddenly 'Oh, it tastes like poison!' (emphasis added).

This nurse suggests that honesty is always preferable to deceit, even when parents suggest otherwise. Maintaining a trusting relationship becomes a guiding principle for paediatric nurses. The nurses identified other strategies for developing trusting relationships. For example, reassurance and just being present helped.

Reassurance was very important for her and a continuing presence was pretty important for her too. Like as soon as she was alone she would ring the bell. So, she just needed someone with her there most of the time and needed, if you were going away, she needed to know when you were coming back and that sort of seemed to decrease her stress which decreased her breathing [rate] which caused her pain. So it was all in a cycle really (emphasis added).

The nurse's presence was reassuring and it enabled trust to develop, thus reducing the girl's stress, anxiety, and her pain. Thus, promoting trust effectively removes several types of harm. Sometimes the development of trust becomes a priority when a child has lost any trust they had. This is graphically illustrated in a story where the child's pain went undiagnosed for some considerable time.

By the time she got to us she was in a state of fear of being disbelieved ... she was really in a very anxious state and very, very ... it's hard to describe ... she was just full of anxiety and full of pain and full of fear that nobody was going to believe her and something was going to go badly wrong and she just couldn't do anything about

it. Helpless, helpless ... feeling helpless. The pain had got so bad and she just couldn't ... she got to a stage where it was just too sore to even complain and so she just ... she'd say it and ... it was like [she was asking us] 'Do something, I just can't say this anymore.' So she went through phases and then she reached a point of trust where she knew if she said it, I was going to do something ... and I think that improved her pain because she was able to relax and she wasn't as tense physically and that helped her physical pain because her body was relaxing (emphasis added).

Significance of being trustworthy

In this study I have proposed that *being trustworthy* is a feature of ethical practice when nursing children. All the nurses in this study recognised the importance of developing and maintaining a trusting relationship with their child patients. The importance of trust in relation to children is evident in the work of the developmental psychologist Erickson (1969) who proposed that the first of eight stages of man (developmental stages) that occurs in early childhood involves basic trust versus mistrust. Trust exists only in relation to something or someone; consistent loving care by a mothering (or fathering) person is essential to the development of trust. Mistrust develops when trust-promoting experiences are deficient or lacking or when basic needs are not met consistently or adequately (Wong, 1995).

Several authors have cited trust as an essential element of a successful nurse-patient relationship (eg. Thorns & Robinson, 1988) and as a key element of patient empowerment and self-help (eg. Gibson, 1991). In the context of nursing care, trust may be viewed as both a process (establishing a trusting relationship) and an outcome (trusted). According to Morse (1991a), trust is built through a process and is fragile. In this study, it also emerged that trust develops from the nurse being with the patient over time. As Beauchamp and Childress (1994) point out it is only through intimate contact between the health professional and patient that each can get to know the other's character and begin to achieve trust. The fragility of trust is evident in the ways that it can be lost through deceiving children so that they will take their medicine, or pretending that a painful procedure will not hurt.

This concept *being trustworthy*, suggests that a trusting relationship between the nurse and the child is a key aspect of good pain management, and it takes time to develop. Through demonstrating that s/he is honest and reliable, and will keep her/his promises the nurse is able to reduce fear and anxiety about pain and painful procedures, enlist the child's cooperation and may even influence pain expression. Cooper (1991b) also identified the significance of what she termed 'nurse fidelity' which involves the nurse honouring commitments arising from her/his relationship with the patient. Offering reassurance and being available (presence) to the child also appeared to have a positive effect on the children's pain experience.

Baier (1986), has pointed out that there are significant differences between our relationships involving autonomous adults and those "who either cannot or should not achieve equality of power (animals, the ill, the dying, children while they are young)" (p. 249). Within contractual relationships between autonomous adults, she proposes there is no need for trust or vulnerability between equals. However, when dealing with vulnerable, non-autonomous persons, such as sick children, Cooper (1990) proposes that we need to assume a posture of relationship with the other, not separation. Furthermore, within this relationship we are responsive to the persons needs as they arise, attentive to the maintenance of the relationship and intent on "relieving the others burden" (Cooper, 1990), which in this case might be relieving a child's pain or allaying their fears about a medical or nursing procedure.

Being an advocate

Interceding on behalf of another, taking positive action, or *being an advocate*, was the most prevalent ethical concept evident in all of the nurses' accounts about *managing pain* in children. Sick children are one of the most vulnerable patient groups in health care because they are not yet self-determining, autonomous agents able to speak on their own behalf; they have difficulty verbalising their discomfort; and, they are ill and in pain. Even though hospitalised children usually have a parent present who acts on their behalf, sometimes this is not sufficient. Parents may find it difficult to ask health professionals, and may not

realise that the quality of care could be better. These nurses clearly showed that nurse advocacy for children in pain is very important for the welfare of sick children. One nurse clearly believed that nurses' ought to be advocates for sick children as follows:

I think we do have to be advocates for children, I mean I think that's in any field of child health ... Pain management is an area where we have to be pretty vociferous advocates you know for the parents and the child ... from an ethical point of view (emphasis added).

Another nurse alluded to the need for nurses to take an advocacy role by identifying children's vulnerability and lack of autonomy, as well as their lack of knowledge about pain and its relief compared to adults.

As an adult you and I would know that if we came into hospital and we were sore that we would have the right to have some pain relief. A child doesn't know that and they actually rely on others to sort of protect them from harm and to hopefully make them feel better.

We tend to be more assertive in the children's' area because a child can't or children don't tend to come and say to you 'Look Kim that Panadol you gave me 20 minutes ago is doing no good, it's not working, I need something more.' Children don't do that whereas you might find an adult saying that to you. [...] An adult can be an advocate for himself or herself.

Other nurses described situations in which it was evident that they had acted as advocates for a child. One nurse described in detail how s/he was called to a paediatric ward by a doctor to help during a procedure involving a boy with a chronic illness whom s/he knew from previous admissions. However, when s/he arrived the nurse discovered a more urgent priority.

I knew this boy reasonably well, he had a chronic illness and spent quite a bit of time in hospital so I did know him reasonably well and he was post-operative ... from something that would probably be classed as a minor procedure. This boy was adolescent and I had been called down to do something and I popped into the room expecting to see the boy that I usually knew and I went into his room and I thought. 'Oh, he doesn't look so good.' He was ... sort of lying rigid in the bed. I thought well, he's lying a bit still in the bed and his eyes were closed and to all intents and

purposes you may have gone in there and thought 'Oh, he's asleep.' I didn't sort of immediately bowl in there and say, 'Hi!' His chart was in his room and so I thought I'll have a look through here. So I had a quick look through his obs chart and I thought 'Oh his pulse was pretty ... for his age tachycardiac'. He wasn't febrile and I looked at his treatment sheet just to see what sort of pain relief he had been getting and ... he had been having morphine increments and ... I counted them up and ... he'd had probably 5 or 6 in ... not too many hours. I knelt down and said 'Hi John, it's Kim I've come down [to help]. You're not looking your usual self this morning' and he opened his eyes and he just looked at me and I said [showing him the Faces Pain rating scale] 'You don't have to say anything ... you just point to the one you feel like'. Well, he immediately pointed to face 5, like the worst [pain] you can imagine. You don't have to be crying, I mean he was a boy that didn't cry so I just knew well, OK he's just in a lot of pain so the tachycardia, the whole shebang, he was just thinking if I lie still, [then it won't hurt so much]. I said 'OK John I need to go and talk to your nurse ... at the moment let's forget you need to have your Porto Cath needle changed' and he just breathed a sigh of relief ... and I said 'We'll just forget about that. What's important at the moment is we need to get you feeling more comfortable, a lot more comfortable than you do at the moment.' And he just sort of breathed a sigh of relief really. So I went to find his nurse and I said to her 'Gosh you know he is just not himself'. She said 'He's been having, you know, I've given him lots of increments this morning.' and I said, 'Yes, but I don't think they are actually working. We actually need to think of another way of getting on top of this pain'. So I guess what I found happening ... was that my whole focus changed, I let the medical staff know that my priority was not changing his Porto Cath needle Another day was not going to make a difference, what I was concerned about was that his pain relief wasn't adequate.

Interviewer: *When you went back the next day you said 'He was certainly a different boy - he was sitting up in bed, he was smiling and chatting. He was a different boy'. So I presumed by that, that you thought that his pain relief was much better.*

Nurse: *Yes, I think it was certainly much better. I have to say probably because I wasn't down there all the time I wasn't looking after him on a regular basis. It's probably a bit much for me to say 'It [the pain relief] was definitely "spot on," but it was a hell of a lot better than when I'd seen him [the day before], which was good. [...] I went back down to see him the next day and he was certainly a different chap, he still wasn't 100 per cent but he was certainly a different boy. He was smiling, and he was chatting. We actually did his needle change the next day. So I guess that was [a situation] where we did something about something that wasn't right.*

Being an advocate is not an easy role. This nurse showed real commitment to being an advocate for this child. S/he was invited to participate in this child's care for a different

purpose than pain relief, and s/he was not his primary nurse, so s/he delicately raised the matter with the primary nurse who subsequently agreed that pain relief was a priority. The nurse had the support of the primary nurse when s/he contacted the doctor and persuaded her/him that there was a different priority for the child that day. What made the advocacy worthwhile was seeing the improvement in the child the next day and realising that s/he had made a difference.

At other times, interceding to get a child better pain relief is quite straightforward. For example, one nurse went to the Recovery Ward and found that the teenage girl whom s/he went to collect was experiencing a lot of post-operative pain.

She hadn't received any analgesia apart from paracetamol despite the fact that she was complaining of pain. So [I] asked the Recovery Nurse to give her some morphine before we transferred her back to the ward, which worked well.

Although getting more effective pain relief in this situation was accomplished quite readily, nurses need to approach such requests with skill and tact. Underlying such a request is the presumption that the other nurse's pain management is not adequate.

The nurses in this study each described situations where they interceded to get more effective pain relief. Sometimes this was difficult because either the doctor or the special equipment needed for particular methods of administration (eg. electronic pump) were not readily available. For example, a nurse described the lengths s/he went to, in order to get two children more effective pain relief.

The girl with the [ruptured] appendix [and pelvic abscess], for example, ... once I had decided that she needed a PCA and I tried beeping the duty anaesthetist twice and got nowhere then there happened to be an anaesthetist on the ward who was seeing a patient pre-operatively for Theatre the next day. So I grabbed him and he was prepared to prescribe.

I'd tried beeping the Duty Anaesthetist a couple of times and got no reply. [...] And that can sometimes happen if they're busy in theatre. [...] I rang the theatre and got told the anaesthetist was there. [I felt that] the girl was in quite a lot of pain and I

thought she'd waited long enough and that it was better to go up there and get something initiated quickly and that's often the problem with analgesia; often it takes time to get things organised. So I decided it was better to be a little bit proactive [and go up there to talk to the anaesthetist] it's often easier to talk to people face to face [...] It's easier for people to fob you off over the phone than it is when you are face to face.[...] I physically went up to the [Operating] Theatre with the child's notes and PCA form and got him to chart it.

It appears that nurses may have to be very persistent when trying to get better pain management for a patient. Even when effective pain relieving methods are being used problems can still arise. It takes considerable experience and expertise to identify some pain management problems. One nurse noticed that a girl was attempting to give herself more analgesia than the PCA was set to deliver during the day, and yet she was not using the PCA enough at night. Other nurses had reported that this girl would wake up experiencing a lot of pain.

Nurse: *The analgesia wasn't well enough controlled at night. It wasn't altogether well controlled during the day because doing the PCA recordings every hour and check how many injections and how many attempts a patient's had, I [could] see that the attempts were far more than the injections she was getting. So I used the hospital Pain Team and the prescription was changed so the child could have more injections of morphine but also at the same time I requested a basal rate at night and he said that was fine. The anaesthetists are quite hesitant to chart a basal rate, they're worried that the nurses won't look at the patient often enough to check their respiratory rate.*

Interviewer: *So they're quite concerned about it?*

Nurse: *Yes ... basal rates are generally not used in the hospital from what I understand ... Perhaps they might be used in oncology more, but we have used them in paediatrics before. Anyway I can't see the difference in that and having a morphine infusion and we have them a lot.*

Interviewer: *So a basal rate actually delivers a constant infusion?*

Nurse: *Yes, it delivers a constant infusion of morphine rather than just relying on the patient being awake enough to press their button at night, it's a real advantage. So what [I] got charted was a basal rate that started at 8 o'clock at night and ended at 6 o'clock in the morning so it would just cover that time when we expected this girl to be asleep ... the object was to have her sleep.*

Here the nurse's wisdom concerning pain management clearly facilitated her/his negotiation on behalf of the child. While paediatric anaesthetists would routinely prescribe post-operative epidurals, or continuous intravenous morphine infusions, for children who were expected to experience moderate to severe pain post-operatively, other doctors tended to prescribe less effective analgesia. Therefore, children who were acute admissions at weekends, or after hours, might not be seen by a paediatric anaesthetist and consequently were often prescribed less effective analgesia. In such cases it would then be up to the nurse to intervene on the child's behalf and negotiate more effective analgesia with the anaesthetist, or other doctor.

- Nurse: *So it does depend on the time of day that you are actually operated on often.*
- Interviewer: *So, the elective [surgery] ones are probably the best off, aren't they?*
- Nurse: *Yes.*
- Interviewer: *And if you're an acute [admission] it's the luck of the draw?*
- Nurse: *If you've got a good nurse looking after you, you'll probably do all right.*

Thus, by implication, a good nurse is one who is willing to be an advocate for the child. Nurses are the health professionals who have most contact with patients and are in the best position to evaluate their response to analgesia. However, if nurses do not accept this advocacy role, then it is possible that some children will receive no analgesia or less effective analgesia.

When there is a change of medical staff in the hospital informal, policies may lapse, which in turn could have implications for children's pain management. For example, there was an unwritten policy that children with leg fractures should be given a caudal block in Accident and Emergency Department (A&E) so that treatment could be initiated painlessly for the child. One nurse reported that s/he had recently struck a problem with this when there was a change of doctors in A&E and a child was admitted to the ward with leg fractures that had had no caudal block.

Actually just recently I've run into a wee problem with the change over of Registrar where the policy for giving a block hasn't been happening because A&E are sending the children through [...] So, the hassle arrived on the ward of a child in pain without a block and the House Surgeon and Registrar didn't understand the policy.

Following the nurse's intervention, this situation was soon remedied. Thus, sometimes intervening on behalf of children is a shared concern and joint effort by nurses. This example also highlights the weakness of not having written protocols for best patient management.

Although these nurses described a number of situations where they had acted as patient advocates for particular children, or classes of children, they also described situations where they thought advocacy was needed, but they had been unable to intercede and bring about improvements to patient care. For example, one nurse was concerned that some children who had had tonsillectomies needed analgesia that is more effective and s/he had read some of the literature about post-operative tonsillectomy care.

Nurse: *When I first started here I did a little bit of reading about tonsillectomies because it's something that we do very commonly ... but it probably requires some leadership on the Ward in terms of the Nurse-in-Charge talking to the ENT surgeons collectively ... the problem being in terms of the pain relief and the discomfort the [children are] experiencing. Finding out what their concerns are about giving morphine. Is it fear of respiratory depression? Is it the risk of masking some other event? Then having a rationale to reassure them that we never get surgical patients with morphine on the Ward having problems with respiratory depression ... and I think if we [were] to know what their rationale is then we can put forward a sound case.*

Interviewer: *Yes. It is difficult to challenge medical staff isn't it?*

Nurse: *Yes, and I think it is something that needs [to be done]. If it's raised as a concern from a patient's perspective in terms of managing the pain [and] if we can find out what their rationale is, then we can roughly deal with that rationale. But it probably needs to be done from someone in charge of the Ward to someone who's head of ENT Department, so we [don't have to] discuss alternative methods with about 6 different ENT surgeons. But none of them prescribes post-operative morphine.*

All the nurses in this study identified that they had problems with implementing the analgesic protocol because it was time consuming and the incremental doses so small, that it often took several doses to achieve adequate pain relief, which then only lasted a short duration of time. Although these nurses had demonstrated ability to be very successful patient advocates in many situations, none of the nurses had been able to do anything about reviewing the analgesic protocol in order to either improve patient care, or use nurses' time more efficiently. They had not felt able to discuss their concerns with the Anaesthetist who had written them. Instead, they said that this issue needed to be taken up by a nurse in a leadership position. However, in this hospital the Charge Nurse and Director of Nursing positions had recently been disestablished, and consequently, the nurses said they felt that they lacked nursing leadership.

Significance of being an advocate for patients

Being an advocate was the most prevalent ethical concept, which emerged from the nurses' accounts of how they managed children's pain. According to Johnstone (1994), the nursing literature strongly supports the notion of nurses rightly assuming and fulfilling the role of patient advocate. *Some authors even go so far as to suggest, controversially, that advocacy forms the very philosophical basis of nursing and, not least, the nurse-patient relationship* (Curtin, 1986; Gadow, 1980). *Others suggest that advocacy should be taught as a discrete subject in nursing courses* (Kohnke, 1982. Cited in Johnson, 1994, p. 272).

However, Bernal (1992) proposes that the claim that nurses should be patient advocates is a questionable one, especially when it is mixed in with the professional issues of nurses' freedom to practice. She goes on to argue that this obligation to patients represents an ideal and in actual practice, institutional and hierarchical constraints often prevent nurses from acting as advocates. Consequently, Bernal says, those espousing patient advocacy argue that unless nurses achieve greater professional autonomy, patients rights cannot be adequately protected. For example, Erlen and Frost (1991) reported that the nurses in their study perceived themselves to be powerless to effect ethical decisions involving patient care.

Pike (1991) suggest that constraints to moral action entrap nurses.

They may be internal, such as lack of professional confidence, timidity, fear, insecurity, or inferiority. They also may be external, such as the authority and directiveness of physicians, hospital policy, or threat of legal action. Many of these constraints are deeply rooted in history; they have become part of the socialisation of health care professionals and the organisation of health care systems. So pervasive is their influence that some theorists propose that, in many situations, nurses are not free to be moral (Pike, 1992, p. 351).

Nurses are the health professionals in a position to intercede on the child's behalf to improve the quality of pain management. An advocacy role requires real commitment; excellent communication and negotiation skills. However, occasionally situational constraints mean that nurses do not feel empowered to negotiate changes to provide better quality pain management.

Feeling moral distress

The nurses in this study did not always feel able to act to improve patient care. Situational constraints such as health care power structures, and lack of formal nursing leadership apparently led to feelings of powerlessness. They identified what they wanted to do but these institutional constraints, they felt, made it nearly impossible to pursue any discussion with medical staff about the changes required for improving pain management in the unit. Jameton (1984) proposed that when a person knows what ought to be done, but the institution or agency lacks appropriate processes or mechanisms for, or actually constrains, moral action then *moral distress* occurs. Several of the nurses in this study talked about, or alluded to, the distress they experienced when they wanted to provide high quality care for children in pain but were prevented from doing so. One nurse described how s/he felt when the nurses' efforts to relieve the pain of two seriously ill young children were not successful.

Two patients [who] both had the same condition ... I had dreadful problems trying to get on top of the pain that they had. They both had medulla blastomas and [had had] posterior fossa craniotomies to removed the tumour. They were two small children, a 2 year old and a 4 year old, both [had] terrible problems with headaches and nausea

that just [went on] for weeks and weeks and we had a dreadful time trying to get on top of their pain and sort of saying to the parents ... 'Oh, they'll be improving soon.' ... Trying [a] multiple ... pharmacological approach and trying, trying absolutely anything we could think of ... with very limited success. There was just nothing that really worked. The headache ... and the pain were there no matter what we did. It was really ... really, quite distressing and frustrating to nurse. [It was also] frustrating for the parents, frustrating for the child [who] just never got any better pain relief from this sort of high pressure headache (emphasis added).

This nurse spoke of feeling *very distressed* and *very frustrated* that s/he was unable to provide adequate pain relief. The neurosurgeon was unwilling to prescribe morphine for the severe pain these two young children were experiencing. Eventually morphine was prescribed after the Oncologist convinced the neurosurgeon that it was appropriate and necessary for adequate pain relief. One nurse described how in other situations some doctors had actively prevented them from consulting the Pain Team.

Interviewer: *So where those two children were such a problem to manage, would you involve the Pain Team?*

Nurse: *Our Pain Team has only been up and running for a short time and ... we did not involve them in either of those cases. On the whole, we have been using them for acute pain, like post-surgical pain, more than using them for chronic pain ... although I see that their use would be appropriate there. There is still a little bit of difficulty with [medical] team's ... taking direction from the Pain Team. There is still a lot of conflict resolution needed (emphasis added).*

At the follow-up interview s/he added:

It was probably more a case of the need to resolve their professional pride and realise it's not going to be compromised by consulting a different team Rather than trying to deal with things themselves all the time Especially with the [neurosurgeons] you seem to be very quickly blocked [and prevented from] actually asking anyone else for any advice The Pain team are just up and running ... so we haven't utilised them to their fullest effective capacity yet, but I think that's starting to improve (emphasis added).

When children's pain management is perceived to be, inadequate or problematic nurses used terms like *stressful*, and *frustrating* and they spoke of feeling *powerless* to do anything

about it. Another nurse talked about how *guilty* s/he felt when s/he realised that they had not managed a child's pain very well.

If you are busy and don't have time and you throw medication at them, you know 'This is Paracetamol, here take it.' 'How are you feeling?' Sometimes on a very busy day like that, it's not until lunchtime that you think this isn't going right, you know [that] things are getting worse and you feel really guilty then, ... but that's [what it is] like sometimes on the Ward (emphasis added).

At the follow-up interview, the nurse reiterated how s/he felt *guilty* about being so busy that s/he felt that the standard of care was compromised. This nurse also appeared to find it *stressful* having doctors consult her or him about what to prescribe.

So much is put on us here too ... like doctors will come down and say 'What do you want to give the child?' Well we say 'We'll give them Morphine' [then the doctor says] 'Well how much will I give it?' You know we are telling them and that is really dangerous. I hate that. I hate it! [Nurse's emphasis]

This nurse appeared to believe that the doctor should be making prescribing decisions, not the nurse. Consulting nurses in this way could be viewed as a positive acknowledgment of nurses' experience and expertise in paediatrics and an example of collaborative practice. Indeed, there were indicators that doctors in this unit often treated the nurses as colleagues. However, nurses may experience moral distress when they are asked, or expected, to perform some role that they feel inadequately prepared for, and they fear that the patient will receive poorer quality care as a result.

Significance and issues associated with moral distress

Other researchers have also reported on the moral distress experienced by nurses. For example, Fowler (1989) has commented on the moral distress and shortage of critical care nurses. Wilkinson (1987/88) investigated hospital nurses' experience of moral distress and its effect on their practice. The findings included the participants' perception that moral distress was a frequent feature of their practice (at least once a week). They reported a variety of strong negative feelings, including anger, frustration and guilt. The effects of this

moral distress included loss of feelings of self-worth, various psychological (feeling depressed), behavioural (having nightmares and crying) and physical manifestations (heart palpitations, diarrhoea, headache). In addition, quality of care may have been negatively affected. Nurses tried to resolve these painful feelings and demonstrated various coping behaviours. The most common, but unsuccessful, coping behaviours were avoidance of the patient or changing jobs. *The two most common successful coping behaviours were to deny responsibility for the situation or for their own immoral actions, and/or believe they were able to have some control over and effect on patient-care situations [...] Nurses who coped successfully also tended to compensate their patients rather than avoid them* (Wilkinson, 1987/88, p. 23). Wilkinson (1988) has also reported on the moral distress experienced by a labour and delivery nurse. The nurse was present at the delivery of a premature infant who was breathing but was allowed to die without intervention. The parents were told the infant was dead. The nurse believed that the 'right action' would have been to take the infant to the nursery and tell the parents the truth. However, she acquiesced with the doctor's wishes and did this because she feared she would lose her job. At the time and later she reported that she continued to feel frustration, anger and guilt; she wonders if she is a good person or a good nurse.

Rodney and Starzomski's (1993) review of health care literature over the last 30 years revealed a remarkable consistency in the identification of situational constraints to nursing practice. When nurses were unable, to implement the kinds of moral choices they wanted to make for and with their patients, they commonly experienced *moral distress*. This distress was associated with feelings of guilt, anger, frustration and powerlessness, and appeared to be an important element contributing to stress and burnout. Rodney and Starzomski proposed that nurses could overcome the situational constraints they perceive in their practice by having a better understanding of moral agency and gaining more control over their practice. Strategies to enhance nurses' moral agency, they argue, centre on empowering nurses and strengthening interdisciplinary collaboration. They further suggest that health care settings must change to empower nurses to participate as full interdisciplinary team members. However, according to Rodney and Starzomski

administrators need to create an institutional environment, which is supportive of nursing practice.

The health system reforms of the 1990s involved some radical changes to nursing structures in New Zealand. The demise of senior nursing administrative positions from Charge Nurse level and above meant that clinical nurses (Staff Nurse level) had to create their own supportive environment, and collaborative relationships. However, as this study showed clinical nurses felt powerless and generally unable to influence policy or patient management. On the other hand, some showed they could negotiate better care for particular children at times.

Pike (1991) acknowledged that true collaboration between clinical nurses and physicians can be difficult to achieve and she described the successful achievement of this in a patient care unit at Beth Israel Hospital, initiated by a group of nurses. She reported that an unexpected favourable outcome of the deliberate development of collaborative relationships between doctors and nurses in the patient care unit was the decline in incidents of moral outrage (as defined by Pike this term appears to be similar to moral distress described earlier) among nurses faced with moral dilemmas. Pike attributed this decline to such factors as mutual trust and respect between nurses and doctors, an appreciation that the two practice areas are interdependent, and the development of a synergistic alliance between the two that enhanced patient care. Cooper (1991), in her response to Pike's article, suggests that the decrease in moral outrage experienced by the nurses was diminished the moment these nurses imagined the shift from victim to collaborator for themselves. She concludes that Pike's model of collaborative practice offers all of nursing the same opportunity.

When the nurses experienced constraints to their practice, they reported feelings of guilt, frustration, stress, distress and powerlessness. They all reported constraints on their moral agency, particularly in relation to reviewing and improving analgesic protocols (especially the medical ones). These nurses could perhaps overcome such constraints and feelings, by imagining themselves as collaborators rather than victims, and beginning to initiate

collaborative practice with all levels of doctors, as Cooper (1991) has suggested. During New Zealand's health reforms of the 1990s nursing hierarchical structures have been dismantled, and the opportunity for setting up new kinds of professional relationships is there. It is up to nurses to grasp that opportunity.

In summary, in this study it was found that ethics influenced nurses' decision-making when managing children's pain. The core ethical concept *being ethical* comprised three conceptual properties: *doing good*; *being trustworthy*; and, *being an advocate*. When nurses hear from patients or family that they have provided high quality care, this provides a sense of moral worth and meaning to their work. However, when nurses felt ethically compromised they experienced *moral distress*.

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CHAPTER 8

Discussion

Introduction

This final chapter begins with an overview of the theoretical categories and process and their properties that emerged in this grounded theory study. These represent the strategies used by the nurses in this setting when attempting to deal with children's pain. The conditions that appeared to influence the process and strategies and the consequences of using different strategies are identified. Following this, some tentative suggestions are made as to how these may relate to one another. The place of these outcomes and other findings within the research literature reviewed in Chapter One will be discussed. This study has several limitations and consequently its impact on nursing practice is likely to be correspondingly limited. However, a number of important practice issues emerged and these will be discussed. Some of these practice issues suggest possible gaps in nursing education in New Zealand. Finally, recommendations for future research are presented.

Being safe and taking risks while managing pain in children.

What emerged from this small study of how a group of nurses perceived they dealt with children's acute pain were a core process and three core categories, which are summarised below:

Core Process: *Managing Pain*

Properties: *assessing*

checking & interpreting

choosing interventions

giving

monitoring & responding

Core concept 1: ***Being safe***

Properties: *following the rules*
 being cautious
 right responding
 managing risk

Core concept 2: ***Taking risks***

Property: *breaking the rules*

Core concept 3: ***Being ethical***

Properties: *doing good*
 being trustworthy
 being an advocate

The main concern or problem that the nurses identified was how to manage children's pain in a timely, effective manner that was acceptable to the child and/or parent. These nurses used a systematic process of managing pain comprising five stages. As the nurses engaged in *managing pain* three significant concerns appeared to be associated with their decision-making: *being safe*; *taking risks*; and, *being ethical*. Thus, the nurses shared a reality of how they defined and experienced the nature of dealing with children's pain experience. It may be useful to now explore how these core concerns (concepts, process, strategies, and conditions) may operate and influence a hypothetical nurse's decision-making and patient outcomes, that is, how they are interrelated.

As stated in Chapter 2, the philosophical basis for grounded theory, is symbolic interactionism and according to Chenitz & Swanson, (1986) *for symbolic interactionists meaning guides behaviour and a stage of deliberation or definition of the situation precedes action* (p.4). If we accept this symbolic interactionist view then the nurse's decision about whether to investigate the child's pain, and whether to relieve pain, ought to be related, firstly, to the meaning the nurse attaches to the child's pain experience and suffering. In other words, if the nurse believes that pain and suffering in children should be prevented as much as possible then the nurse will want to take the necessary action to investigate and relieve the child's pain and suffering. On the other hand, if the nurse believes that some pain and suffering is acceptable then the nurse may

take little or even no action to investigate and relieve the child's pain. The nurse who is moved to take action and investigate the child's pain report may find that it is ambiguous, or uncertain, so that the nurse has to seek an answer to the question: 'What is going on here?' Through clinical reasoning or deliberation, the nurse considers possible hypotheses, or uses intuition to discover the nature and cause of the pain. The nurse approaches each child experiencing pain as a unique case and attends to the particulars of the situation, using multiple *assessing* strategies. However, nurses also use their knowledge and experience of clinical cases to make comparisons between the present case and a series of similar cases in order to reach a reasonable decision.

The first part of this deliberation phase is completed when the nurse believes s/he has discovered the particular features of the problematic situation and s/he is then able to define the nature and intensity of the pain and identify the probable cause. Further deliberation on how best to achieve the desired outcome of acceptable, timely and effective pain relief then follows this new definition of the situation. However, even when the cause cannot be immediately determined the conscientious nurse believes the child's pain report and decides to give an analgesic anyway. This second part of the deliberation stage includes *checking* and *interpreting* the prescription because the nurse wants to be sure that the prescribed dose is a safe one and *choosing* which drug, dose and route of administration to use. Considerations such as effectiveness as well as parental or child preferences (acceptability) may all influence the nurse's choices.

This in turn leads to the nurse designing a personalised pain management intervention, which then leads to action - the *giving* of an analgesic and perhaps using selected non-pharmacological strategies as adjuncts to the analgesic. At the *giving* stage, the nurse may take a calculated risk and give more than one dose without waiting the requisite time to observe peak effect because s/he has judged that a larger dose is needed. Finally, the nurse uses *monitoring* strategies to determine the impact of the analgesic and/or non-pharmacological strategies. If the analgesic effect is inadequate then the nurse repeats the dose and/or institutes non-pharmacological strategies to alleviate the pain. Should an adverse effect occur, *right responding* by the nurse will help to minimise any harm.

Finally, the moral meaning of the patient's response to analgesia also appears to be important. The nurses in this study believed that children should not suffer needless pain; they demonstrated compassionate attitudes and beliefs (meaning) about children in pain and worked hard to achieve good pain control. The nurse who values prompt and effective pain relief would presumably be concerned if this was not achieved, and would be motivated to reconsider; to engage in further deliberation and action (*being an advocate*) until the desired patient outcome is achieved. Whereas, the nurse who does not place such a high value on prompt and effective pain relief may be less concerned about the adequacy of pain relief and therefore will be unlikely to try to advocate for improvements in the child's pain management if it is inadequate.

However, if patient workloads are high the nurse may be too busy to monitor the analgesic effect adequately. When this occurs the nurse who has developed a strong sense of the moral aspect of her/his practice feels disturbed and responsible. On the other hand, when good pain relief is achieved the nurse experiences a sense of fulfilment or achievement. Finally, it may be that the ethical dimension: *being ethical*; influences nurse's choices about *being safe* and *taking risks* at every stage of the *managing pain* process. For example, as Fowler (1995) has noted the demands of *doing good* or beneficence can involve the nurse in risks:

The demands of beneficence take us beyond those of non-maleficence in that they require that we prevent and remove harmful conditions and confer good on others, in other words, that we 'do good' in situations in which there is a choice to do otherwise or to do nothing. Classically the ethical tension created is that of risk versus duty or the duty to do good for a patient when doing so places the nurse at some risk (Fowler, 1995, 962-963).

Thus, it was shown that when the nurse takes risks when managing pain s/he justifies this by appealing to the principle of beneficence: according to the nurse promoting the child's well-being is a higher priority than being overly concerned about potential low risk adverse events, such as respiratory depression.

In addition, some insight into the nurses' deliberation, or clinical reasoning, about what was going on in a particular pain situation was evident in their anecdotal descriptions. Through a process of elimination, consultation with other nurses, parents or doctors, trial and error, or intuition the nurse was able to define and reframe the problem, and

eventually design an individual solution. However, sometimes findings were inconclusive and the situation remained ambiguous. Then the nurse considered several possible hypotheses and tested these hypothetically in order to gain sufficient understanding of the problem to take appropriate action. Alternatively, the nurse might ignore the ambiguity and experiment with a single strategy, or combination of strategies that s/he thought might work. If the strategy worked (the patient's pain was relieved adequately) it was likely to be repeated with that child, or other children, in the future. When nurses did not have enough time because of heavy workloads to deliberate about what was going on, and whether pain strategies were working adequately, they expressed feelings of frustration, and even guilt, which for some was experienced as moral distress. Under such conditions the outcome was ineffective pain management.

Thus, managing pain in children is a complex process, which involves consideration of the physiological and subjective, pathophysiological, pharmacological, legal, ethical and practical knowledge that surrounds pain and its management. It also involves both technical and interpretive knowledge and skills.

Significance of this study

The place of this study's outcomes and other findings in relation to the earlier research reviewed in Chapter One will now be discussed. The literature reviewed for this study had identified some inadequacies in children's pain management that in some cases originated from misconceptions about use of opioids as well as from under-prescribing and/or ineffective methods. In the latter case, when nurses chose to give no analgesic or a reduced dose this compounded the problem. What was not known in these earlier studies was what influenced the nurses' choices or whether they had tried to influence doctors' prescribing. It was also suggested by some of these earlier researchers that nurses did not appreciate the subjectivity of pain and lacked pain assessment skills.

Misconceptions about pain and use of opioids and addiction

Overall, misconceptions about children's pain and use of opioid analgesics identified by other researchers were not evident among this group of nurses. The nurses believed that children experienced pain and understood that morphine was not addictive when used to relieve pain. However, they reported that such misconceptions did persist among some doctors and parents. Some doctors were reluctant to prescribe morphine for children, or

under-prescribed the analgesic, particularly those who lacked experience in paediatrics. Other researchers (eg. Altimier, Norwood, Dick, Holditch-Davis, & Lawless, 1994; Margolius, Hudson & Michel, 1995; Mather & Mackie, 1983) have also reported concerns about doctors' education and training in pain management.

The finding that some parents expressed fears about addiction and thought that morphine was only used for the terminally ill, and consequently refused to allow their child to have morphine, does not appear to have been reported by other researchers. Although Hamers, Abu-Saad, Halfens and Schumacher (1994) reported that parents influenced nurses' pain assessment and interventions in children this was only through their reports of the child's pain and requests for analgesia and the researcher's felt this influence was small. They did not report that parents tried to influence choice of analgesic. No literature was found on CINAHL that supported parental misconceptions about morphine or addiction in children experiencing pain. This raises some interesting questions about the extent to which parents exert influence over their child's treatment, whether parents have a legal right to consent or refuse consent for their children and, when parents object to some aspect of their child's treatment how health professionals should deal with this.

In New Zealand, under the 1994 Code of Health and Disability Consumer Rights (henceforth termed the Code) all consumers, including children, are presumed competent to make an informed choice and give informed consent. In the past, health professionals and others have often discounted children when decisions are being made about their care and treatment. The Code requires health professionals to treat the child as an individual and assess their competence to give or refuse consent to treatment or a particular service and this would include agreement to use morphine as an analgesic. Under the Code, parents do not have an automatic right to consent or refuse treatment for their child, but are entitled to do so if their child cannot. A competent child can consent to treatment without reference to an adult and even if the parent does not want the child to have the treatment, it can still be given. However, what if the child is too young or otherwise incompetent to make an informed choice and competent parents refuse treatment such as the use of morphine? If the doctor or nurse believe that morphine is the analgesic of choice and receiving it is in the child's best interests, then every effort needs to be made to communicate this to the parents, and to keep the

channels of communication open. The nurses' accounts in this study suggest that they did try to communicate this to the parents. However, ultimately a consumer whether a competent child or a parent acting for an incompetent child, can refuse treatment under Right 7 section 11. Only emergency treatment or treatment necessary to save a child's life may be given without consent. In such cases, as a last resort, a provider can apply to the Court for the child to be made a ward of the Court under the Guardianship Act 1968. Choice of analgesic does not meet either of these conditions; therefore, it appears that the health professionals in this study acted reasonably.

Under-prescribing and ineffective methods of analgesia

The nurses reported that the practice of giving small incremental doses of morphine intravenously was problematic. The Peri-operative Medication in Children guidelines, developed by a paediatric anaesthetist at the hospital in 1992, specified recommended age/weight related dosages for particular drugs to be administered by various routes and what monitoring of the child should be done. Intravenous morphine prescriptions were problematic because these were to be given as intermittent or bolus doses and each was very small (0.02mg^1 or 20mcg per kg). Other sources such as the Alder Hey Book of Children's Doses (6th ed. Royal Liverpool Children's NHS Trust, 1994) recommend a range of intravenous morphine bolus doses related to the age and weight of the child: 1-3 months $25\text{mcg}/\text{kg}$; 3-6months $50\text{mcg}/\text{kg}$; 6-12months $100\text{mcg}/\text{kg}$; over 1 year $100\text{-}200\text{mcg}/\text{kg}$. According to these recommendations, only the youngest children in the research setting were prescribed a nearly appropriate dose and the older the child the more they were under-prescribed. This meant that a child of 1 year or more experiencing moderate to severe pain would need several doses to achieve adequate relief and the analgesic effect by this method was of short duration (approximately 1 hour). The nursing protocol (Paediatric Nursing Handbook, 1994) said that the nurses should administer one dose and monitor the child's respiratory rate for 5 minutes before repeating the dose. Therefore, it is not surprising that the nurses found it difficult to adhere to the protocol when their workload was busy, the patient demand for analgesia high and their experience indicated that more would be needed. For most nurses, the solution to such a dilemma was still to act, even though this potentially entailed some risk to the patient and themselves. They would administer several doses in quick

¹ Note that there are 1000 micrograms per milligram.

succession rather than follow the protocol, and all said they had never caused any respiratory depression that required treatment, which is another indication that the prescribed dosage was probably too low.

The use of a PRN (pro re nata or 'as needed') pain relief schedule was also problematic because most of the children were likely to be experiencing continuous pain post-operatively. An intermittent schedule would result in peaks and troughs of analgesic effect and thus poor pain control. This method also relies on the discretion of the staff to determine whether the child will receive an analgesic or not. If any staff have significant concerns about addiction and opioid side effects this may inhibit both the prescription and the administration of adequate pain relief. In addition, to these attitudinal concerns, communication problems with younger children complicate decision-making about whether an opioid is needed. Preverbal children cannot request relief and older children may not know appropriate ways to signal their distress or adopt a stoical attitude. Therefore, a PRN schedule necessarily involves frequent assessment of pain, which represents a significant burden for the nursing staff. According to Schechter, Allen and Hanson (1986) PRN dosing regimens should be discredited and have been discontinued in adult patients for pharmacological and humanitarian reasons. They expressed concern that this regimen may place children at an even further disadvantage because of their inability or reluctance to communicate their discomfort. Recent pharmacology and pain texts (eg. McGrath, 1990; McCaffery & Beebe, 1994; Reiss & Evans, 1995) recommend continuous IV analgesic infusions for continual moderate to severe pain. Intermittent doses should only be used for breakthrough pain or for short-term relief during painful procedures.

Finally, the labour intensiveness of PRN dosing schedules is compounded by requirements to follow proper checking procedures for controlled drugs. It is not surprising, therefore, that the nurses expressed feelings of frustration with such a time-consuming procedure which usually had to be repeated, resulted in only a short duration analgesic effect and poor pain control.

Earlier researchers (eg. Mather & Mackie, 1983; Schechter, Allen & Hanson, 1986) had also reported problems with PRN dosing schedules but the concern in their study was that nurses interpreted this to mean 'as little as possible'. In contrast, the nurses in this

study spoke of the importance of giving analgesics regularly. Thus, under-prescribing and an inappropriate method (use of intermittent or PRN schedule) were also concerns in this study.

Advocacy

Earlier researcher's, such as Beyer et al (1983), had expressed concern that nurses failed to intervene on behalf of children to ensure they received adequate pain relief. However, this group of nurses showed that they were prepared to be advocates for particular children experiencing pain. At times, the nurses in this study went to great lengths to try to negotiate better pain control for the child with colleagues or doctors. This was hindered when doctors refused to prescribe certain analgesics for particular groups of children, or parents who refused to allow their child to have morphine thwarted their efforts.

Although a specialist Pain Team had recently been established at the hospital, some medical teams refused to allow the nurses to consult the Pain Team, even when particular children's pain was refractory. This supports Yarling and McElmurry's (1983) contention that nurses are often not free to honour their commitment to excellent patient care. Katzman and Roberts (1988) also found that nurses' professional judgment about patient care was subordinated to the decision-making power of the physician. Similarly, Wallace et al (1995) reported that nurses experienced problems with access to a pain service after hours and at weekends, with doctors who did not know how to use the Pain Team and with attending doctors (Consultants) reluctance to lose control of the patient's pain management.

However, the nurses in this study had felt powerless to effect other changes they believed were warranted, such as the use of an intermittent incremental dosage schedule. The reasons given for this included lack of nursing leadership, a reluctance to bypass traditional hierarchical relationships and communication patterns and feeling they lacked the depth of knowledge to enter meaningful discussion with doctors. Other researchers (eg. Erlen & Frost, 1991; Corley, 1995) have also reported that nurses experience feeling powerless to effect changes in patient care.

In other words, what nurses may want to do and what they can do in relation to pain management is not necessarily the same thing. Sometimes nurses feel they lack the depth of knowledge to engage in meaningful discussion with doctors. In other cases, situational constraints, such as doctors or equipment not being readily available, prevent them from providing timely and effective pain relief. Alternatively, their attempts to advocate for a child may be thwarted by doctors or parents who hold misconceptions about use of opioids in children or doctors who refuse consultation with the Pain Team when the child's pain is refractory because they wish to retain control of the patient's management.

Subjectivity of pain

Schechter (1989) proposed that lack of appreciation of the subjectivity of pain was one of the main causes of under-treatment. One of the nurses in this study said s/he accepted McCaffery's dictum that *pain is whatever the person experiencing it says it is, and exists whenever he says it does* (McCaffery, 1968, cited in McCaffery & Beebe, 1994²) and others said they tended to believe the child who said he was in pain. Yet, the nurses in this study also described many clinical situations where they checked out the child's pain report, as if they did not believe them. For example, they checked the child's pain report against socially constructed pain norms, that is, the amount of pain expected following a particular type of procedure at a certain recovery point in time. Some asked the parent about the child's reliability for reporting pain. If the child appeared to be experiencing more severe pain than expected, then the nurses tended to assess the child more fully to try to determine the cause of this 'excessive' pain. Sometimes they found the child had developed complications, but at other times, it was just that the child was continuing to experience a lot of pain related to the original procedure or medical problem. It is also probable that the child was being under-medicated in view of the prescribing guidelines already discussed. Thus, although the nurses said they believed the child's pain report this was undermined when they checked the validity or reliability of this: some concerns about the subjectivity of pain were evident in this study too.

² Primary source not available in New Zealand.

Assessment skills

Several researchers (eg. Price, 1992; McCaffery & Ferrell, 1994) had suggested that one of the main reasons for under-treatment of children's pain was that nurses lack adequate pain assessment skills. The nurses in this study used a multidimensional approach to assessing pain in children as recommended by Wong (1995) and others, that included asking the child, using pain rating scales, observing for pain behaviours, and using vital signs. After asking the child, it appeared that the nurses used these other assessing strategies as a form of validation of the child's pain report.

Some nurses in this study thought that vital signs were helpful in determining the level of pain, and they can be in acute pain when used in combination with other strategies, but not on their own. Changes in physiological signs such as increased blood pressure, pulse and respiration, may also indicate other things related to their illness, or emotions such as fear and anxiety, rather than pain. These physiological responses indicate stimulation of the sympathetic division of the nervous system that after a time is modified when the anterior and medial portions of the hypothalamus stimulate the parasympathetic division to restore homeostasis (Tortora & Grabowski, 1993). Therefore, in situations of prolonged pain, vital signs should return to normal levels, and this could be misinterpreted by a nurse who believes that people in pain are always in a state of arousal due to the sympathetic response.

Pain rating scales appeared to be widely used in this paediatric unit to determine the pain level in children old enough to use them. The Wong and Baker (1988) Faces Pain Rating Scale and a numeric horizontal scale that the nurses called the 'Thermometer Scale' were both used by the nurses in this study. The nurses reported some problems using the Faces Scale with both European and non-European children, even when the child spoke and understood English. The reasons for this are unclear but may be due to not teaching the child how to use the tool reliably. The information conveyed to the children was probably that which is written on the Wong-Baker scale and included in their Paediatric Nursing Handbook (1994). However, to ensure reliable reporting the child needs to be taught how to use the Pain Scale, which requires practice in its use. For example, the child needs to be asked to recall past pain experiences of varying severity and to rate these. Following this practice session, the child ought to be able to reliably discriminate the intensity of the present pain experience. McCaffery and Beebe

(1994) have developed useful general guidelines for using pain rating tools with children, as well as some specific guidelines for particular rating scales. Unfortunately, textbooks on nursing care of sick children do not necessarily include such information (eg. Wong, 1995). The nurses in the study setting said that a staff member had brought the rating scales back to New Zealand after attending an international conference. These had been widely adopted, but it appeared there had been no staff training in their use. At times, it seemed that nurses in this study were inconsistent in relation to which particular rating scale was used for a particular child. The fact that one rating scale was a 5-point one and the other a 10-point scale compounded the problem. Thus, the ratings would have been unreliable when different scales were used with the same child. Furthermore, the validity of these tools has not been established for use with the main ethnic minority groups in New Zealand, namely Maori and Samoan. Maori and Samoan children have much higher morbidity and hospitalisation rates than European children. Therefore, the use of these assessment tools with the majority of hospitalised children in New Zealand is questionable. The other concern I have with the use of these rating scales was the apparent lack of understanding of reliability and validity concepts by most of the nurses in this study.

Thus, although these nurses used a multidimensional approach to pain assessment in children, the significance ascribed to vital signs as indicators of pain experience and improper use of rating scales shows there is room for further improvement.

Implications for nursing practice

This study raised a number of issues concerning nursing practice: the role of safety and risk taking; the value of protocols and guidelines; nursing workloads; quality assurance; and, orientation to specialty practice. In addition, this study provided some insight into the nature of the moral experience of a group of practising nurses.

The role of safety concerns in this study and nursing practice is not controversial and has already been discussed. However, risk taking in nursing practice was an unexpected outcome of this study and is controversial. Another study conducted by Hutchinson (1990) also uncovered examples of risk taking in nursing practice and involved nurses from a variety of different clinical areas. Interestingly, the author said that the data came

from a study of unprofessional behaviour in hospital-based nurses. Nurses, other than Hutchinson, may also believe that risk taking is unprofessional: that it violates legal and ethical codes and standards for practice. Yet, Hutchinson came to view the risk taking in her study as 'responsible subversion' because she concluded that they had used their best nursing judgment and only 'bent the rules' when it was in the patient's best interests. This may be so but it was not reassuring to read that some of this so called 'responsible subversion' involved flouting legal requirements for prescribing. Clearly, it was not responsible for either Hutchinson's nurses or those in this study to ignore legislation related to prescribing: errors could occur and result in serious or even fatal patient outcomes.

In this study the most frequent risk taking involved administering several doses of morphine in quick succession and sometimes failing to stay and monitor the effect of the analgesic. It appears that this had become an accepted practice amongst this group of nurses. As long as the prescriptions were too small for most children, this had no serious consequences. However, the concern is that a doctor one day may prescribe a more accurate dose for a child and the nurses will persist with their practice of giving a series of doses quickly: then the outcome could be serious or even fatal. It appears that these nurses have been lulled into a false sense of security.

The fact is that the need for such risk taking would be obviated if the nurses would just take the initiative and discuss their problems and concerns with the paediatric anaesthetist who developed the medical protocol in 1992 which has influenced prescribing practices in that unit ever since. It would also help if management established the requirement that all policies and protocols in the hospital would be regularly reviewed, were evidence-based and referenced. For example, the evidence-base for the 1992 Peri-operative Medication in Children guidelines (medical protocol) was not provided. In contrast, the Paediatric Nursing Handbook (1994) compiled by three nurses is referenced.

A commitment to a comprehensive quality assurance program, such as that required for hospital accreditation would identify any problems with implementing policies or procedures and provide a process for remediation. Quality assurance audits could also include effective pain management as a key indicator. Unfortunately, health care

restructuring in the 1990's saw the demise of quality assurance programs in many New Zealand hospitals including the one studied. A related concern for management is nursing workloads particularly when these have a negative impact on the safety and quality of care that can be provided. Presumably, hospital management would prefer risk management, not risk taking, in the organisation.

Most of the nurses also identified that lack of formal preparation for, or orientation to specialty practice, was a problem. They had to learn the special requirements for nursing children on the job and/or through their own self directed learning at the library. In particular, they identified that learning how to assess and manage children's pain took time. The Paediatric Nursing Handbook (1994) was helpful but needed to be supported with planned in-service education; formal teaching for all nurses not just those who were new to the specialty.

The role of ethics in nursing is strongly supported in ethics and professional literature and codes. For example, Johnstone (1994) discusses the moral nature of nursing practice and provides a nursing perspective on significant bioethical issues in health care. Many fundamental nursing texts focus on the safety issues of clinical practice but tend to discuss ethics in general terms only. However, this study shows how one group of nurses considered ethical as well as safety aspects when they managed children's pain. They began with the twin assumptions that children should not have to suffer unnecessarily, and relieving pain is inherently good.

Although a number of early studies investigated nurses ethical decision-making based on hypothetical cases their findings have been discredited by Duckett et al. (1992) and Parker (1990) because they were based on Kohlberg's theory of moral development and/or lacked rigour. Few studies have investigated the ethics grounded in clinical practice (eg. Bishop & Scudder, 1990) or some aspect such as moral distress (eg. Wilkinson, 1988, 1989, and these have already been discussed. Thus, this study provides some insight into the ethics of managing pain in children. Such research increases our understanding of descriptive ethics, that is, they report what people believe and how they act or perceive that they act (Beauchamp & Childress, 1993).

Nursing codes of conduct identify the values and ethics, which the profession believes should be inherent in good nursing practice, including pain management. For example, the International Council of Nurses (ICN) Code for Nurses (1973) begins by specifying that nurses have four fundamental responsibilities: to promote health; to prevent illness; to restore health; and, to alleviate suffering. The New Zealand Nurses' Association (NZNA) Code of Ethics (1988) was a modification of the ICN Code, and set out a system of principles of conduct expressed as values and behaviours, and limitations for nurses practising in New Zealand. The statements in the code which relate directly or indirectly to pain management are: 'Advocacy of clients interests' (4); 'Competency in the care of clients' (7); and, 'In assisting clients who are dependent the nurse takes measures to provide as much comfort, dignity and freedom from anxiety and pain as possible (6.3).' The more recent Code of Ethics (NZNO, 1995) states that beneficence (doing good) and non-maleficence (doing no harm), veracity (truthfulness) and fidelity (faithfulness) are fundamental values for ethical nursing practice in New Zealand. The NZNO Code of Ethics (1995) also states that nurses will protect and advocate for the rights of clients in order to minimise or prevent harm. The Nursing Council of New Zealand's Code of Practice for Nurses and Midwives (1996) requires the nurse to act ethically (Principle 2) to be guided by a recognised professional code of nursing ethics (Principle 2, 2.1) and to use their knowledge and skills for the benefit of patients/clients/community (Principle 2, 2.2). In addition, the Council's Code of Conduct requires the nurse to respect the rights of patients/clients (Principle 3) but does not propose that the nurse should be a patient advocate and ensure that patient rights are met.

These codes represent prescriptive ethics; they describe how nurses ought to behave. Thus, nurses are expected to be compassionate, promote good, prevent harm, promote trust through truthfulness and faithfulness to all commitments made to clients, and be a patient advocate. The nurses in this study certainly demonstrated all of these ethical principles.

On the other hand, another way that nurses can demonstrate ethically sound care is by being diligent. Diligence is semantically similar to conscientiousness and means involving, or taking great care, and being painstaking (Collins Concise English Dictionary, 1992). Beauchamp and Childress (1994) suggest that conscientiousness

should be understood in terms of strictness in following principles or rules in the face of temptation. When *managing pain* this could be interpreted as following protocols even when the temptation is to take short cuts. In other words, applying Beauchamp and Childress' definition of conscientiousness, or diligence, to the situation described would suggest that the nurse who does not follow the rules is neither conscientious, nor diligent. This implies that their practice was unethical. However, nurses in this study did not *break the rules* lightly, they did so because they believed it would ultimately benefit the child. They tended to weigh the benefits and harms and if the benefits outweighed the possible harms they tended to do that which promoted beneficence. In other words, they tended towards a utilitarian approach. *Utilitarian ethical theory accepts one and only one basic principle of ethics: the principle of utility. This principle asserts that we ought always to produce the maximal balance of positive value over disvalue or the least possible disvalue if only undesirable results can be achieved* (Beauchamp & Childress, 1994, p. 47). Therefore, from a utilitarian perspective the nurses practice was ethical and met the Nursing Council criteria for ethical practice which includes using their knowledge and skills for the benefit of patients .

Implications for nursing education

This study raised a number of significant issues for nursing education as well, notably the adequacy of nurses' paediatric, research, and scientific preparation for practice.

Paediatric preparation

The literature review showed that lack of knowledge has often been cited as a major barrier to effective pain management in children. For example, Bradshaw and Zeanah (1986) proposed that student nurses needed sufficient clinical practice in order to learn to recognise and deal effectively with paediatric patient's pain. All the nurses in this study said they lacked preparation in nursing care of sick children and in particular assessment and management of children's pain in their pre-registration nursing program. This is a concern in New Zealand because the expectation is that the new graduate comprehensive nurse is ready to practice at an advanced beginner level in any clinical setting. If they lack preparation in some clinical settings this calls into question whether they are comprehensive nurses. Furthermore, Nursing Council's Standards for Registration as a Comprehensive Nurse 1992 specify that the student will undertake

nursing care with people in any context and “at all stages of the life cycle” (Standard 3, 3.9).

Nursing Council could set minimum requirements for clinical experience that specified hospital paediatric experience as a pre-registration requirement. However, achieving this would be difficult for nursing programs that only have access to small paediatric units; the unit would only be able to accept a limited number of students, not enough to ensure all students attained this paediatric experience.

Although Nursing Council (1997) has recently established guidelines and competencies for post-registration nursing education, these have yet to be implemented. Nursing Council currently does not have any statutory control of post-registration nursing education but it is proposed that this will be contained in the revised Nurses Act. At time of writing (1998), no national programs at degree level for either specialty or advanced nursing practice were available in New Zealand. There were only a few in-house certificate courses, mainly in intensive, coronary or cardiothoracic care specialties. The increased patient acuity, shorter hospital stay, new procedures and technical advances being used in our hospitals and community outreach health services requires a highly skilled nursing workforce with specialty and advanced knowledge and skills. Some nurses already have considerable experience in specialty fields but need to support this with up-to-date in-depth scientific and theoretical knowledge. Consequently, national programs for specialty and advanced practice are urgently needed.

Research basis for practice

In the previous section, concerns about the nurses' skill in using the most objective measure (pain rating scale) during pain assessment were discussed. Most of the nurses appeared to lack understanding of fundamental research concepts, in particular, validity and reliability. This is not surprising, given that all had diploma rather than degree level initial preparation as nurses. Two of the nurses had commenced tertiary nursing education as registered nurses, which included research.

Akinsanya (1994) contends that the practising nurse needs to be research-aware and research-minded so that they are in a position to judge the usefulness or otherwise of a

piece of research, or in this case the validity and reliability of an assessment tool. He recommends that firstly, research should form a core of basic (pre-registration, bachelor of nursing level in New Zealand) and post-basic (post-registration, postgraduate certificate, diploma or masters level in New Zealand) nursing education. Secondly, nurses need to be encouraged to read more and particularly to read the reports of published research in journals. Following this, Akinsanya says that research findings need to be implemented by practising nurses.

The degree preparation of nurses for registration in New Zealand since 1993 and other tertiary nursing courses meet the first of Akinsanya's requirements. The Paediatric Nursing Handbook (1994) used by nurses in the unit goes some way towards implementing research findings. However, so much more could be achieved with formal teaching in each aspect covered by the booklet. A nursing research culture also needs to be established within New Zealand hospitals and other areas where nurses practice. This could begin with the establishment of a journal club within and/or across specialties.

Scientific basis for practice

The nurses in this study demonstrated limited understanding of pain physiology and pharmacokinetics. For example, the nurses described the pharmacological actions of particular analgesic drugs simply as acting either 'centrally' or 'peripherally,' which is not wrong but does demonstrate a superficial understanding. Moreover, some were mistaken about the site of action for paracetamol, which they thought, was peripheral. Recent pharmacology textbooks for nurses, such as Reiss and Evans (1995), assume a much deeper knowledge of physiology and pharmacology. For example, Reiss and Evans explain the pharmacological actions of analgesic drugs in terms of which opioid receptor sites they bind to, whether they have agonist or agonist-antagonist activity, whether they interfere with synthesis and action of prostaglandins or other pain producing substances, and so on.

Other researchers have also found that nurses lack understanding of the science of their clinical practice. For example, in a recent publication Wilkes and Batts (1998) reported on an investigation of 162 Australian registered nurses' conceptions of the physical science underlying their clinical practice and found it inadequate in terms of the competencies expected of a registered nurse today. Their study showed that nurses

carry out many procedures by rote, without thinking about them and there was little evidence of meaningful knowledge to inform independent decision-making.

The nurse who cannot relate 'hypertonic' to solution concentration is not in a position to make a reasoned judgment about possible patient outcome. The image of nursing that emerges from the data is that nurses are subordinate to doctors. They do as they are directed (Wilkes & Batts, 1998, p. 129-130).

Beaumont (1987) and Wilkes (1992), also claim that nurses are not usually expected to make independent decisions. Instead, they are required to follow orders and so do not tend to own responsibility for their actions. Nurses' practice is directed by medical orders and protocols. Consequently, suggest Wilkes and Batts (1998):

In harmony with this image of themselves as people who respond to orders, nurses are selecting not only what they need to know but are limiting the level of understanding required of them. The rote learning of information meets these needs (p.130).

Nurses should not be seen as subordinate, following the directions of others, suggests Rosenfeld (1986) but according to Townsend (1991, cited in Wilkes & Batts, 1998)³ as persons capable of making decisions. However, in order to be adequate decision makers, nurses need to acquire deeper knowledge which will then allow them to make reasoned judgments. Not only will they be able to claim their right to participate in interdisciplinary discussion about patient care in a meaningful way, but they will also be in a position to debate the adequacy of protocols with doctors.

The nurses in this study identified that they needed to be able to discuss patient care and protocols in a meaningful way. One nurse described this as 'having a good rationale' to take to the ENT doctors in order to persuade them to change the pain management of post tonsillectomy patients. It may be that the nurses who were reluctant to discuss clinical issues with doctors felt intimidated by a perceived knowledge gap between the two professions.

³ Townsend, J. (1991). Facilitation of a sustainable resource for nursing. Proceedings of the National Nursing Conference: The discipline of nursing: new horizons for nursing theory, education, practice and research, Sydney, Australia, p. 263-276. (Publication not available in New Zealand)

Thus, lack of in-depth pharmacological knowledge, in particular, may have contributed to the persistent problems with prescribing and use of intermittent dosage schedules; the nurses felt they lacked the necessary understanding to discuss these problems with the doctors concerned. Although we cannot make pain assessment less ambiguous and more certain, or simplify pain management, we can attempt to make sure that nurses are adequately prepared educationally for the challenges of managing pain in children, interdisciplinary communication and autonomous practice.

Clinical decision making skills

Some of the literature reviewed in Chapter 1, proposed that problems in children's pain management might have more to do with nurses' decision-making skills than a lack of knowledge about pain, its assessment or management. However, it is difficult to see how these could be separated from one another. As previously pointed out, nurses who lack meaningful knowledge about some aspect of clinical practice, such as pain management, are in no position to make a reasoned or independent decision about it. Yet, nurses are expected to make reasoned, somewhat independent decisions about pain relief because they have to interpret doctors prescriptions, and choose from a range of doses and intervals between doses, as well as choose which analgesic to use when a choice is available. Following the giving of an analgesic, nurses are expected to monitor the patient's response and understand the significance of this. However, after Wilkes and Batts (1998) findings, I suggest that some nurses' pain management may reflect rote learning and ritual rather than practice that reflects in depth understanding of the science underlying it, and independent decision making.

Furthermore, Wilkes and Batts (1998) propose that, in conformity with the image that nurses follow the directions of others, they also tend to rely on their shared experience within nursing to inform their actions. Thus, clinical reasoning that should be based on meaningful knowledge is replaced by ritual. The problem is that this ritual is often in conflict with the accepted truths of science. In clinical settings, this shared truth becomes more important than scientific truth and earlier work of Batts and Wilkes (1990) confirms the validity of this statement, when it showed that:

Students in the first year of an undergraduate nursing program accepted scientific truth before exposure to the clinical arena. This scientific truth was eroded as students spent more time with role models of nursing in the clinical area so that, by third year, they owned the shared truth of nurses which was the antithesis of the scientific truth (Wilkes & Batts, 1998, p. 130).

Nurse educators, like me, tend to pin our hopes for the future of nursing in better-educated students who we expect to bring about positive changes in practice. During clinical tutorials, I have noticed that second year students often express excitement about what they are learning in bioscience, and its application that they see in clinical practice. However, they also point out that many registered nurses do not have the depth of scientific or theoretical understanding that they have and this frustrates them because the registered nurse is then unable to assist them with integration between science, theory and practice. They become aware that, instead, the registered nurse has acquired substantial practical knowledge and skill that the students are in awe of, and want to acquire. Students say that they downplay their scientific or theoretical knowledge and eventually stop asking RN's for 'their rationale' or explanations of their practice (personal communication, 1997). Instead, they try to 'fit in' with the rote learned and ritualistic practice of their mentor and try to avoid upsetting the RN; getting a good clinical evaluation takes priority. Occasionally the brave student may delicately challenge the registered nurse about the unscientific nature of some aspect of practice, but this is usually too difficult (personal communication, 1997). When I have asked the students about this informally they say something like, 'We don't want to create waves, we just want to pass the course and get a good assessment from the registered nurse.'

However, the hope that nurses with degree preparation will have a positive influence on practice is somewhat vain. The numbers of degree graduates in New Zealand are still too low to make a significant impact. In a national nursing workforce of approximately 46,000 at present only about one quarter is likely to have a tertiary qualification but this proportion will gradually increase through natural attrition and replacement. However, New Zealand hospitals have also been recruiting experienced nurses from other countries who may not have degree preparation.

The findings of this study, and points raised in the previous section about nurses' use of rote learning and ritual, suggest that nurses in New Zealand who have not completed an undergraduate pre-registration or transition degree that included bioscience, do need to

reflect on how up-to-date their scientific knowledge base is which informs their practice. If nurses had more in-depth knowledge, this would enable them to become independent decision makers, and in turn, this would enable them to have meaningful interdisciplinary discussion about patients with doctors. This in turn should alter the perception that nurses are subordinate to doctors and merely carry out medical directions, and lead to the view that nurses can and indeed must be autonomous professionals. The development of more collegial relationships between the two professions should lead to improvements in patient care. Many nurses working in specialty areas like intensive and critical care have acquired deeper scientific knowledge through doing advanced 'in-house' courses, and the difference in their understanding of their practice is evident to students and nurse educators visiting those clinical areas. The working relationships between doctors and nurses in those areas often appear more collegial than those relationships seen in some other settings. However, research is needed, to determine whether nurses with advanced educational preparation do demonstrate more independent decision making and collegial relationships with doctors and what mix of knowledge is required to support nurse prescribing in specialty areas like paediatrics.

Limitations and future research directions

This was a small qualitative study, with eventually only one setting being used, so the findings are not generalisable, indeed no grounded theory researcher would claim this. It is one interpretation of a particular group of nurses' perceptions of how they dealt with hospitalised children's pain. The participants in this study were sent copies of the preliminary findings and their responses suggested that it had meaning for them, and extended their understanding of managing children's pain. In other words, the participants validated the *in vivo* codes, and process and agreed that the researcher's interpretation of these interrelated had meaning for them; it fitted their clinical reality. They also said that it raised their awareness of situational constraints and problems associated with children's pain management in the paediatric unit they worked in. It is to be hoped that this group then felt empowered to discuss the clinical issues with the doctors concerned as a first step toward improving children's pain management.

In addition, the preliminary findings at time of writing had been presented at an international nursing conference in 1997 and a local research forum. On both occasions support for these findings and the emergent-grounded theory of managing pain were volunteered by paediatric nurses from New Zealand and other countries who were present. They felt that it added to our knowledge of an important aspect of nursing practice.

This study was limited in scope because of institutional concerns about involving children in research. Consequently, nursing decisions, processes and interventions were only indirectly studied. Nurses' perceptions of their decision-making and interventions are not necessarily an accurate reflection of those behaviours. Further research using participant observation and interviews with children to determine the impact of nurses' strategies to relieve pain would overcome this limitation.

More opportunities for theoretical sampling would have enabled further exploration of the core concepts and process as well as exploration of the hypothetical propositions (outlined at the beginning of this chapter) about the relationships of these to each other. Inevitably, the researcher's lack of experience with the method, time and financial constraints also influenced the outcome. Further study on nurses' pain management using evaluative research approaches is warranted to determine the significance of these findings in other settings. It would also be interesting to study nurses working with adults to determine whether similar, or a different, managing pain process is used. Nurses' understanding of bioscience and other relevant knowledge required in pain management would be a new area to investigate. This could suggest priorities and directions for future nursing education. However, perhaps a more important area to research is how to move nurses from a reliance on shared truth and ritual to a more meaningful knowledge that would allow them to make reasoned judgments and be independent decision makers.

Finally, Fonteyn (1995) suggests that the fullest and most accurate description of nurses' clinical reasoning will be obtained when their reasoning is studied in the clinical setting at the time it is occurring during care provision. Therefore, future qualitative research studies of nurses' clinical reasoning related to pain management should include some participant observation.

Conclusion

In conclusion, some improvements to managing children's pain are evident compared to earlier studies but some problems also persist. The emergent theory *Being Safe and Taking Risks while Managing Children's Pain* has increased our understanding of nurses' clinical decision-making and practice in this substantive area. It also highlights important practice and education issues and suggests some areas for further research.

Recent New Zealand graduates may be better prepared in the science that underpins nursing practice but many will still lack clinical experience with paediatric patients unless Nursing Council sets more specific requirements for clinical experience and audits programs to determine whether requirements have been met. If the new competencies for practice certification established by Nursing Council included a requirement to up-date nurses' scientific knowledge this would contribute to improvements in interdisciplinary communication, patient care and mentoring of student nurses and new graduates.

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APPENDIX A

PERI-OPERATIVE MEDICATION IN CHILDREN

The following is intended only as a GUIDE. Allowance must be made for the procedure, the physical condition and mental attitude of the patient. If possible, contact the ANAESTHETIST concerned and discuss the problem.

PREMEDICATION

General Comments

- a) No premedication may be the best premedication.
- b) Caution is needed with narcotics in children less than 10 Kg
- c) Atropine and hyoscine should be avoided in pyrexia and dehydration since they prevent sweating).
- d) In shock, the IM route may be dangerous. The peripheral circulation is reduced and a relative overdose may occur when tissue perfusion improves. In these patients, small intravenous increments until pain is relieved is safer.
- e) In obese children drug dosage is related to lean body mass and a similar reduction in dosage is required with severe hydrocephalus.

EMLA CREAM

A 2.5% mixture of lignocaine and prilocaine. This should be applied over the best vein on the dorsum of each hand 1 - 1.5 hours preop. or directed by the anaesthetist.

ORAL PREMEDIATION

atropine	0.04 mg/Kg, 1 hour preop.
choral hydrate	50 mg/Kg, 45 - 60 mins preop. syrup 100 mg/ml; capsules 500 mg
diazepam	0.3 - 0.5 mg/Kg, 1.5 - 2 hrs preop, tablets 2mg, 5mg, 10mg
midazolam	0.3 - 0.5 mg/Kg, syrup 2mg/ml, tablets 7.5 mg, 45 - 60 mins preop (older children need less than younger)
trimeprazine tartrate	2-4 mg/Kg, 1.5-2 hrs preop:- Vallergan syrup 7.5 mg/5 ml; Vallergan Forte syrup 30 mg/5ml.

INTRAMUSCULAR PREMEDIATION (this route should be avoided if possible)

atropine	0.02 mg/Kg 30 - 60 mins preop.
hyoscine	0.006 - 0.008 mg/Kg 1 hr preop.
morphine	0.15 - 0.2 mg/Kg 60 - 90 mins preop.
pethidine	1 mg/Kg
Phenergan	(see promethazine)
promethazine	0.5 mg/Kg 1 hour preop

POSTOPERATIVE ANALGESIA

ORAL

codeine	0.5 mg/Kg 4H
diclofenac	1 mg/Kg b.d.
paracetamol	20 mg/Kg 6 hourly (250 mg/5ml suspension)
Voltaren	(see diclofenac)

RECTAL

diclofenac	1 mg/Kg b.d. (25mg & 50mg suppositories)
morphine	Rectal narcotics should never be used for post-op pain
paracetamol	15 mg/Kg 4 hourly (neonates 6H) 125 mg, 250 mg, 500 mg suppositories.
	NOTE: if paracetamol is being used to treat pyrexia then the cause of the fever must be sought and therapy started if appropriate.
Voltaren	(see diclofenac)

PARENTERAL (caution is needed if the body wt. is less than 10Kg)

morphine	IM,	0.15 - 0.2 mg/Kg prn 3 - 4 hourly
	IV bolus	0.02 mg/Kg increments until comfortable (check respiratory rate before and after dose)
	IV infusn	0.5 mg/Kg in 500 ml of fluid infused at 10 - 50ml/h (this must be prescribed on the paediatric morphine infusion sheet and have hourly recording of respiratory rate and sedation score)
pethidine	IM	1.0 mg/Kg prn 3 - 4 hourly
	IV bolus	0.1 mg/Kg increments until comfortable (check respiratory rate before and after dose)

ANTIEMESIS

NOTE The vomiting child should not receive repeat doses of antiemetic without being seen and assessed by a doctor with regard to fluid and electrolyte status and to establish a causes for the disorder. The frequency of dose is given for information but the dose should be prescribed as single doses after assessment.

cyclizine	IM or slow IV	1 mg/Kg 4 hourly
Maxolon	(see metaclopramide)	
metaclopramide	IM or slow IV	0.15 mg/Kg SOS (q6h)
prochlorperazine	IM	0.1 mg/Kg SOS (q8h)
	rectal (5mg sup)	0.1 mg/Kg SOS (q8h)
Stemetil	(see prochlorperazine)	

20 March 1992

APPENDIX B

**PAEDIATRIC
EPIDURAL
ANALGESIC
INFUSION**

Name _____ Patient No. _____

Sex _____ Age _____ Ward _____

(Affix label here or fill in)

PRESCRIPTION

**BUPIVACAINE 0.125% 100mls
plus
FENTANYL 2mls = 100mcg**

Infuse into epidural catheter at 0.2ml/kg/hr rounded to nearest whole ml

INFUSION RATE = _____ mls/hr

Put no more than three hours supply in the burette

REVERSAL OF RESPIRATORY DEPRESSION

If respiratory rate is less than _____ breaths/min stop infusion until depression recovers and restart after discussion with anaesthetist.

If there is a dangerous degree of respiratory depression or sedation score = 3, reverse depression with:

naloxone (Narcan) _____ mg IV or _____ mg IM

(dosage is 0.01mg/kg IV and 0.04 mg/kg IM)

Call the paediatric registrar or anaesthetist on call. Administer oxygen and instruct patient to breathe. If necessary assist with bag and mask ventilation.

If the upper level of the block ascends above the _____ dermatome, cease the infusion and call anaesthetist.

If the pain score is consistently 3 or 4 call anaesthetist.

TO FIND ANAESTHETIC HELP

The anaesthetist who placed the epidural can be found through the theatre secretary, phone 89380. If this person is unavailable the Duty Anaesthetist is on bleep 120, 0830 until 1630 or bleep 212, 1630 until 0830.

Anaesthetist _____ Signature _____
(PRINT NAME)

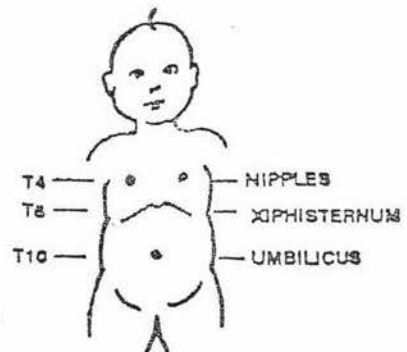
Date _____

SEDATION SCORES

- 0= None, Alert
- 1= Mild, Occasionally drowsy, easily roused
- 2= Moderate, Frequently drowsy, easily roused
- 3= Somnolent, difficult to rouse
- 5= Normally asleep, easy to rouse

PAIN SCORES

- 0= Pain Free
- 1= Comfortable except on moving
- 2= Uncomfortable
- 3= Distressed but can be comforted
- 4= Distressed and cannot be comforted



P.T.O. to begin recor

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NEW ZEALAND STATUTES AND REGULATIONS

Crimes Act 1961

Guardianship Act 1968

Medicines Act 1981

Medicines Regulations 1984

Misuse of Drugs Act 1975