



**“Nurses’ and Student Nurses’ Inferences of Pain and
Psychological Distress.”**

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Abstract

Poor pain assessment contributes to inadequate postoperative pain relief. Studies in the US suggest that nurse education might make students less sensitive to patients' experience of pain. This research set out to examine this process in the United Kingdom and to explore the experience of the students during their common foundation programme (CFP). 217 students completed the Standard Measure of Inferences of Suffering Questionnaire (SMIS) before and after their CFP. Their inferences of psychological distress increased as studies in the US had found but unlike these studies no change was found in their inferences of pain. Inferences of pain and psychological distress were affected by the age of the cases, while gender affected only the latter. None of the characteristics of the students were related to their inferences .

Of 51 qualified nurses who completed the SMIS, 5 with high inferences and 5 with low inferences, rated patients for whom they were caring. Over half of their ratings were different from those of the patients' and there was no relationship between their SMIS scores and the tendency to over or under estimate patients' pain casting doubt on the validity of the SMIS.

Interviews with 15 students following their CFP showed that they experienced a wide range of strong emotions when caring for patients in pain. Their relatively junior status in the wards seemed to place them in difficult positions and provided them with little support.

Theories of desensitisation, cognitive dissonance and acculturation have been proposed to explain decreasing sensitivity to pain. The lack of a significant change in students' inferences of pain and the analysis of their interviews suggest that their experiences are more varied than these theories suggest. These findings have

important implications for both nurse education and the mechanisms to support student nurses in clinical practice.

Chapter 1 Literature Review

1.1 Introduction

“Treatment of pain after surgery is central to the care of postoperative patients. Failure to relieve pain is morally and ethically unacceptable” (Royal college of Surgeons and College of Anaesthetists 1990, pg.3). Despite this statement the care of postoperative patients has in many instances been shown to be inadequate and many patients suffer unnecessarily. The reason for this situation is complicated and therefore this review will commence by discussing the nature of pain, in itself a reason for the difficulty in treating pain successfully. Evidence of inadequate postoperative pain relief will then be reviewed and some possible explanations will be discussed. The review will then discuss the assessment of pain and some of the characteristics of nurses and patients that may influence the assessment of pain.

1.2 Nature of pain

Pain is a difficult concept to define and describe. The difficulties associated with defining pain contribute to the problems of measuring it. We have all at some time in our lives experienced pain to some extent and we all therefore feel that we know what pain is. Pain is not only a sensation but is also an emotion and a physical and mental state. Although pain can be compared to other bodily sensations, it is perhaps unique among sensations in the variety of ways it can be interpreted, indeed the interpretation of what the pain means to us is integral to the sensation of pain itself. Fordham and Dunn (1994, pg.3) suggests pain can be “considered to be evil, unpleasant, terrible, frightening, to be avoided at all costs- or good, easily forgotten, temporary, worth risking, a useful experience.”

In some cultures and circumstances pain can be seen to be an honour or a challenge, for example the hook-swinging ritual still in practice in parts of India. A member of a social group is chosen to represent the power of the gods. The chosen individual is

suspended from a cart via strong ropes with hooks which are pushed through the skin and muscles on either side of the back. The cart is pushed from village to village with the individual apparently feeling no pain. Similar examples can be found in other cultures in which there is an absence of pain in a situation which would cause discomfort to most people watching.

Differences in the interpretation of the meaning of pain occur within cultures as well as between them. Copp (1974) exploring the experiences of pain of 148 patients in five hospitals found that patients described pain in different ways. This included viewing pain as a challenge from which there would be a positive emotional and spiritual effect, as a struggle to overcome their suffering, as a weakness on their part, or as a punishment. Some also viewed the pain as a kind of loss or grieving. Indeed Copp commenced the study thinking she was investigating pain but found she was studying the response to it.

The relationship of pain to suffering can be a complex one. Cassel (1982) discussed this relationship and suggested that pain and suffering are closely identified but they are phenomenologically distinct, patients report suffering from the pain “when they feel out of control, when the pain is overwhelming, when the source of the pain is unknown, when the meaning of the pain is dire or when the pain is chronic” (pg.641). Pain is not however always experienced as suffering, the exhilaration experienced by subjects in the hook-swinging ritual, the joy following the pain of child birth, the feelings of the athlete after a race, are circumstances in which pain can be associated with feelings of joy and achievement.

The differing meanings of pain in different circumstances highlight the difficulties in defining or explaining the nature of pain. The way pain has been conceptualised has developed through the centuries and the different ways in which pain is viewed has been reflected in the theories of pain that have been proposed. In order to provide a

framework for the discussion of the assessment of pain it is necessary to review the major theories and definitions of pain as the way pain is conceptualised will influence the approach taken to the assessment of pain. This review will outline briefly the four main theories, a more detailed description of pain theories has been written by Melzack and Wall (1988)

1.2.1 Specificity Theory

The “traditional” (Melzack and Wall 1988) theory is specificity theory which has been very influential especially in the first half of this century. The theory that pain is sensed by specific pain receptors and is transmitted via nerves to pain receptors in the brain was supported by Descartes in 1664 who likened the sensation, transmission and response to pain to the ringing of a bell. “Pulling at one end of a rope one makes to strike at the same instant a bell which hangs at the other end”(Descartes 1664, pg.265). Descartes did not describe the transmission of signals in terms of nerve impulses as it was not until 1842 that Johannes Muller described the role of sensory nerves in conducting sensations of sensory stimuli to the brain (Melzack and Wall 1988). The theory of a system composed of a sensory organ linked directly to a centre in the brain was developed by Frey (1895) who proposed four components of sensation spots (or feeling) namely touch, warmth, cold and pain. Each of the four senses has its own sensory organ and Von Frey concluded, as free nerve endings were the most common and pain spots on the skin were found almost everywhere, that the free nerve endings were the receptors for pain (Melzack and Wall 1988).

Modern specificity theory suggests that pain is sensed by specific pain receptors (free nerve endings), transmitted via specific nerves (A δ and C fibres) which, via the lateral spinothalamic tract, relay the sensation of pain to a specific centre in the brain.

Although the location of this centre is still debated some have proposed the thalamic nuclei (Head 1920).

While specificity theory has been influential, it fails to provide a satisfactory answer to some phenomena. Melzack and Wall (1988) suggest that although the assumption of physiological specialisation has stood the test of time, the assumption of psychological specialisation is the theory's weakness. "Phantom limb pain, causalgia and the neuralgias provide a dramatic refutation of the concept of a fixed, direct line nervous system" (Melzack and Wall 1988, pg.156), as surgical lesions of peripheral and central nervous system are often unsuccessful in abolishing these pains. The notion of specialisation of peripheral receptors may also be over simplified as there is evidence that free nerve endings and endings surrounding the hair follicles are capable of giving rise to all of the sensory qualities of the skin and physiologists have been unable to confirm that fibres can be exclusively labelled as pain fibres (Skevington 1995).

Fordham (1988) suggests that Descartes' sensory model of pain influenced western biomedical thinking to the point that the affective or emotional component was relegated to a reaction to pain rather than an integral part of it. The highly variable nature of the relationship between injury and pain has been difficult to explain using specificity theory. This has led to deviations from the expected one-to-one psychophysical relationship leading to suspicions of a psychological abnormality (Melzack and Wall 1988).

1.2.2 Pattern Theory

A number of theories, grouped under the title pattern theory, have developed as a reaction against specificity theory. Goldscheider (1894) was the first to propose that stimulus intensity and summation are the central determinants of pain. In its simplest form referred to as peripheral pattern theory, pain is considered to be due to excessive stimulation that produces a pattern of nerve impulses which is interpreted centrally as pain. This theory however ignores receptor-fibre specialisation and therefore fails to account for the available knowledge.

In a related theory, Central summation theory, Livingstone (1943) suggested specific central neural mechanisms to account for the summation displayed in pain syndromes such as causalgia and neuralgia. These mechanisms consist of reverberating circuits in the grey matter of the spinal cord. This abnormal activity can then be triggered by normally non-noxious inputs and generate volleys of nerve impulses that are interpreted centrally as pain. Although this theory explains phenomena such as phantom limb pain and has been influential on latter ideas there is no physiological evidence of functional reverberatory circuits.

The theory that a specialised input-controlling system normally prevents the summation from occurring, and that destruction of this system leads to pathological pain states is referred to as Sensory interaction theory. This theory suggests the existence of a rapidly conducting fibre system which inhibits synaptic transmission in a more slowly conducting system that carries the signals for pain. The proposal of a multi-synaptic afferent system in the spinal cord also explains why spinothalamic cordotomy may fail to abolish pain.

1.2.3 Affect Theory

Pain as a sensation is a relatively new concept, an older theory sees pain as an emotion, the opposite of pleasure. This concept can be traced back to Aristotle and Plato. The arguments about the nature of pain at the beginning of this century focused on the issue of pain specificity. The conceptualisation of pain as a sensation ignores the emotional element of pain, “for pain does not just have a sensory quality it also has a strong negative affective quality” (Melzack and Wall 1988, pg.161). The effect of conceptualising pain as a sensation is that it has reduced the importance of motivational and cognitive processes to the role of reactions to pain rather than equally important components.

The development of our knowledge of sensory physiology and psychophysics has reinforced the concept of pain as a sensation and has overshadowed the concept of pain as an emotion. Cognitive and motivational aspects of pain have been relegated to responses to the sensation of pain rather than being a fundamental component of the pain sensation. Thus while affect theory is inadequate to explain much of the knowledge we have about the sensation of pain it does promote the importance of cognitive and emotional factors as part of the sensation rather than as a reaction to it.

1.2.4 Gate Theory

Melzack and Wall (1988) suggested that any pain theory must explain several facts: 1) the relationship between injury and pain is highly variable; 2) innocuous stimuli may produce pain; 3) the location of pain may be different from the location of damage; 4) pain may persist in the absence of injury or after healing; 5) the nature and location of pain changes with time; 6) pain is not a single sensation but has many dimensions; 7) there is no adequate treatment for certain types of pain, most of which fall into four categories: deep tissue damage, peripheral nerve damage, root damage and idiopathic pains.

While all of the theories described have useful elements none provides a complete answer and therefore in an attempt to incorporate the strengths of these differing theories Melzack and Wall first proposed the Gate Control Theory in 1965 (Melzack and Wall 1965). The gate control mechanism proposed by Melzack and Wall predicts the highly variable nature of the relationship between injury and pain. “The effects of mood, culture, experience and expectation fall into place as part of a unified and integrated system and not as mysteries to be pushed aside or assigned to a totally separate mechanism of the mind” (Melzack and Wall 1988, pg.182).

The original theory of gate control proposed five stages in the process in which nerve impulses enter the spinal cord and proceed to the brain. The first stage involves the

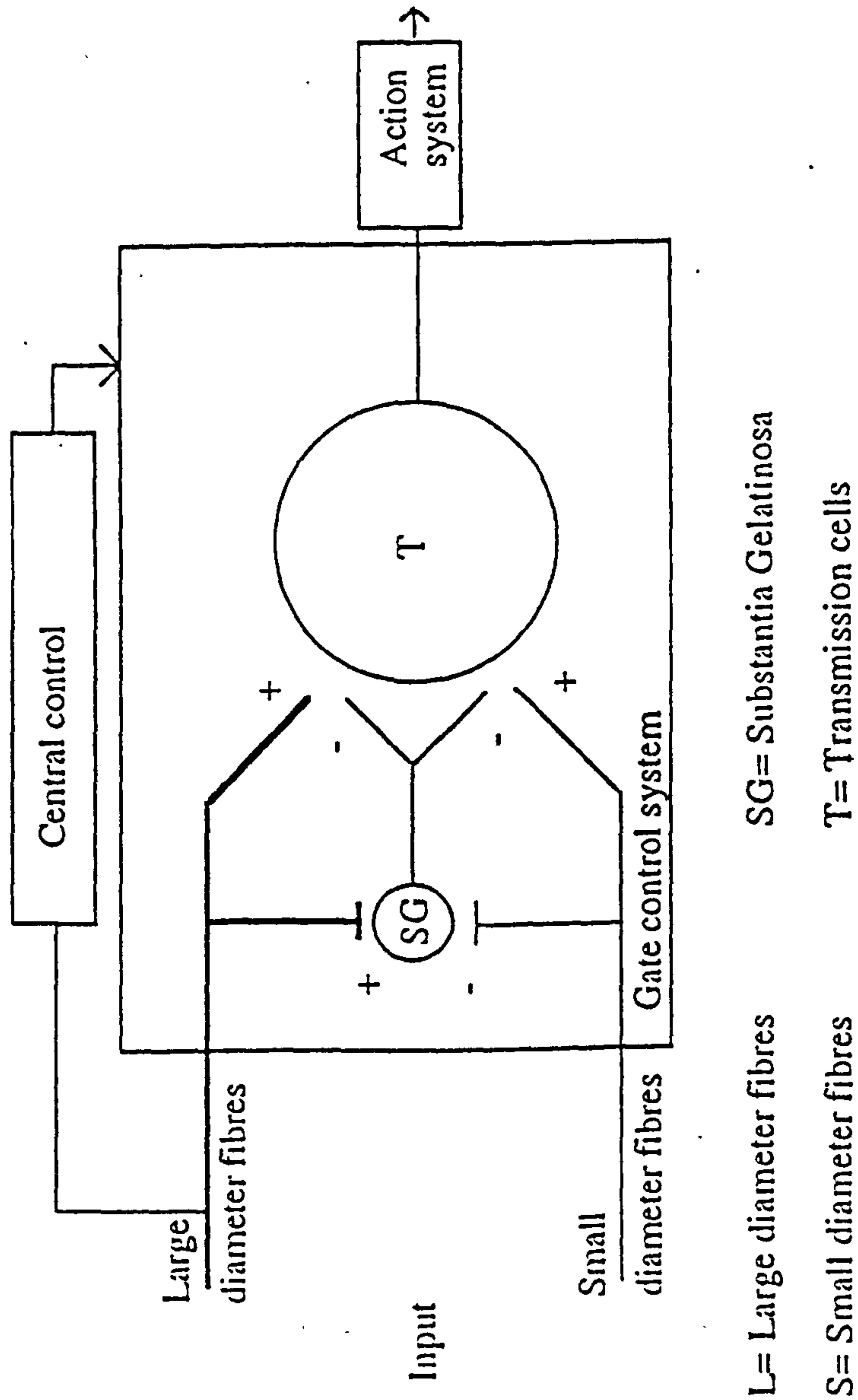
small myelinated A δ fibres and unmyelinated C fibres being activated by a noxious stimulus. These fibres transmit their impulse to transmission or T cells, which transmit to local reflex circuits and to the brain. This stage is equivalent to Descartes' concept of pain. The inputs from the peripheral nerves also stimulate facilitatory cells which when stimulated by the peripheral nerves, prolong the stimulus that results from the T cells.

The exact nature of the T cell was at the time a matter of debate as cells in the spinal cord responded differently. Cells in the spinal cord which signal injury were shown to respond to large fibres (L) as well as the small fibres (S). Some cells responded to light pressure and increased their frequency of response as the pressure stimulus increased and were therefore called wide dynamic range (WDR) cells. A minority of cells, which do not respond to low level stimuli, only respond to the S fibre inputs. These cells were referred to as nociceptive specific cells (NS). Melzack and Wall (1988) suggested that pain would be triggered if the firing rate of any group of cells exceeded a critical level determined by the properties of the brain. When the large fibres are active the T cell acts as a WDR type cell. If L fibre input is missing the T cell acts like a NS type cell. Thus in effect large fibre input closes the gate while small fibre input opens the gate.

L fibres were shown to be able to excite as well as inhibit the T cells. This double effect relates to a spatial separation, L fibres from the centre of the field excite, while L fibres from the periphery inhibit the T cells. Wall suggested the location of the inhibitory and excitatory interneurons was the substantia gelatinosa (SG) which is located in the dorsal horn of the grey matter in the spinal cord and is divided into six areas or laminae.

The final stage was the description of a mechanism to account for the powerful influences that descend from the brain to modulate spinal reflexes. The theory also assumed the presence of ascending messages and is illustrated in figure 1.

Figure 1 The gate control theory of pain (Melzack and Wall 1988)

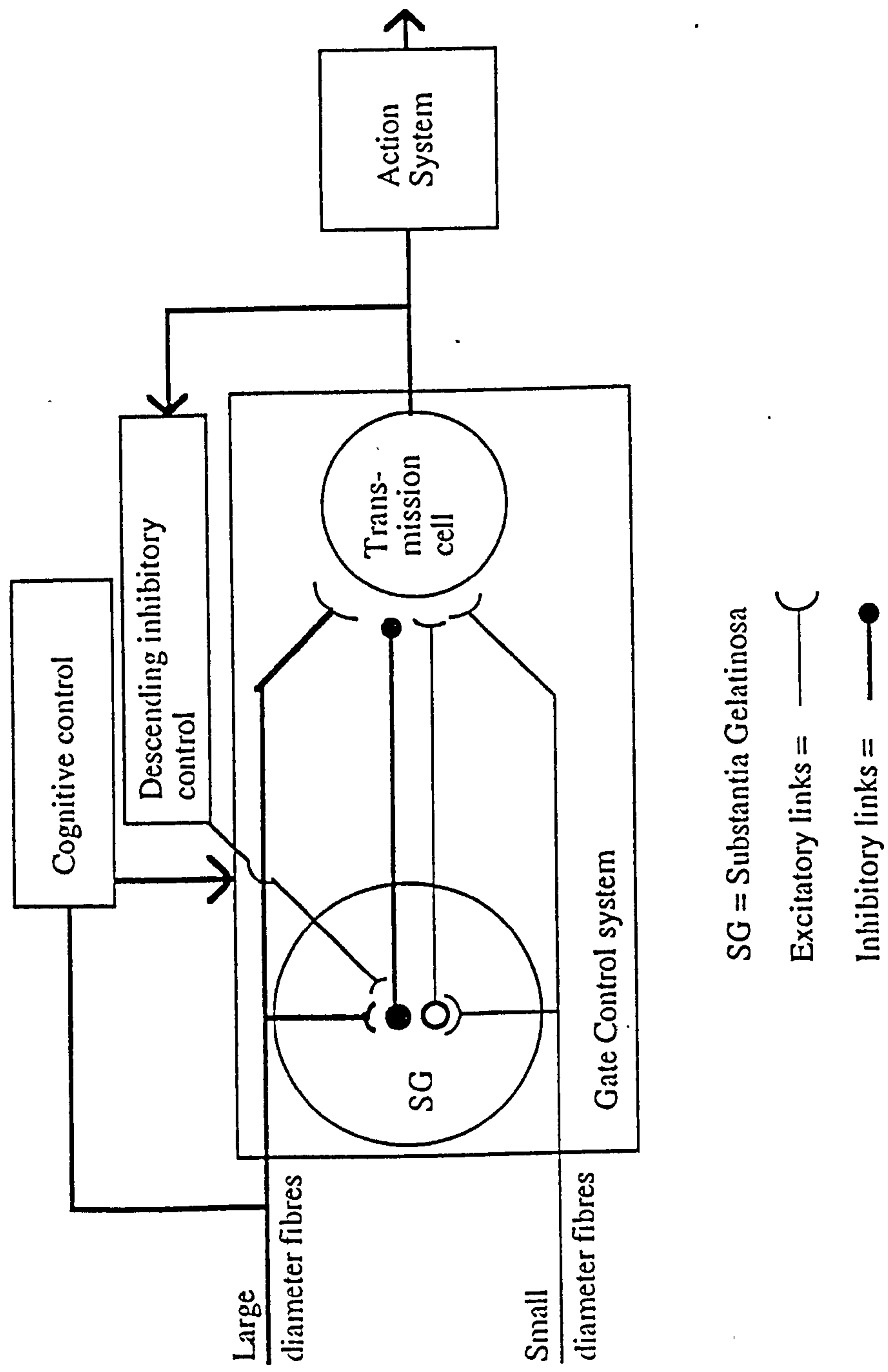


Since the initial formulation of the gate control mechanism the knowledge of pain mechanisms has expanded. In particular evidence of both pre and post synaptic modulation of signals, the existence of excitatory as well as inhibitory cells in the substantia gelatinosa and the existence of another inhibitory mechanism which originates in the periaqueductal grey and the nucleus raphe magnus has led Melzack and Wall to revise the gate control theory (see figure 2).

The gate control theory has been extremely influential in the field of pain although as Melzack and Wall (1988 pg.176) point out “each of the five stages which made up the gate-control mechanism have been supported by subsequent work. However, they are not sufficient to explain some of the basic facts about pain.” Other mechanisms have been described which add to the basic theory. As well as triggering the gate control mechanisms, impulses arriving at the dorsal horn also trigger long-latency, long lasting changes in a different mechanism which sustains prolonged, widespread increases of excitability and sensitivity. Recent research has looked at the role of the N-methyl-D-aspartate (NMDA) receptor that prolongs the duration of synaptic potentials in the dorsal horns of the SG. Stimulation of these receptors via C fibres triggers long lasting changes making the NMDA receptors hyper excitable. This has the effect of making rapid and long term changes in the membrane and cell chemistry of these dorsal horn cells (Wall 1991) which in turn may become irreversible due to calcium induced genes, the crucial step in the development of plasticity. This finding has led to the suggestion that pre-emptive analgesia may be able to reduce pain following surgery although clinical trials have found varying results (Kissin 1996).

A second mechanism relates to peripheral and dorsal root injury. Following such an injury a number of changes occur in the chemistry and physiology of the dorsal root ganglion cells, the motor neurones and the central terminals of the sensory fibres. These changes in turn induce a reduction of inhibitions and a spread of receptive fields

Figure 2 The Gate control mechanism mark 2 (Melzack and Wall 1988)



and an increase of excitability. It has been suggested that these changes are produced by changes in chemicals transported within the axons of sensory fibres (Melzack and Wall 1988).

The gate control theory of pain has been very influential in a number of ways. It has been influential in the development of a number of approaches to the treatment of pain. The concept of closing the gate through the stimulation of large fibre inputs led to the developments of techniques such as transcutaneous electrical nerve stimulation (Latham 1991). The gate control theory also provides a rationale for techniques such as massage or vibration. The influence of higher centres can be facilitated by techniques such as distraction and guided imagery and the reduction of anxiety. Melzack and Wall (1988) suggest that one of the first effects of the development of the gate control theory was the destruction of the idea that pain is a simple sensation. They suggest that “The gate theory ... provided the conceptual framework for integration of the sensory, affective and cognitive dimensions of pain” (Melzack and Wall 1988, pg.191).

The gate control theory has however been criticised as putting too much emphasis on the peripheral physiological mechanisms. Karoly (1985, pg.466) for example suggests that, “the fields of pain management and measurement are not without problems, some of which the gate-control mechanism may (inadvertently) be supporting. For example, physiological explanations, which are basically reductionistic, tend to give the greatest weight to sensory first causes. The gate control model also places heavy emphasis upon the cutaneous, peripheral receptor sites where stimulation is first transduced into the nerve messages that are gated (or not gated) in the region of the dorsal horns.” Kim (1980) also criticised the rudimentary nature of the psychological dimensions. However, Weisenberg (1994, pg.279) suggests that “Conceptually, the gate control theory is still the most comprehensive and relevant for the understanding of the cognitive aspects of pain. There are gaps in the theory, the details of which are currently being filled in by others.”

Various criticisms have been made about the basic theory since its conceptualisation. Nathan (1976) suggested that a number of aspects of the theory were hypothetical including the properties and functions of the T cells, the effects of small and large diameter fibres on cells in the SG and the activation of central control by the first conducting system prior to arrival in the brain of the more slowly conducting pathway. Others have raised specific objections about the functioning of the A δ and C fibres and the cells of the dorsal horn (Iggo 1972). Woolf (1994) suggests that although considerable effort has been devoted to the study of the structure and function of the dorsal horn, we still do not understand the actual principles of its organisation in terms of what specific neural elements operate together to form functional processing units, transferring particular types of afferent input to particular output elements of the system.

While the gate control theory does not offer a complete and definitive theory of pain it is possibly the most comprehensive theory available. The influence of this theory on the process of assessment has been demonstrated by the development of the McGill pain questionnaire (Melzack 1975). The gate theory underlines the importance of considering the affective and cognitive elements of the pain experience as well as the sensory component and highlights the importance of taking into account factors such as culture, past experience and socialisation in the pain experience.

1.3 The Nature and Effects of postoperative pain

Pain is an exceptionally difficult concept to define and describe due to the individual nature of the experience. Melzack and Wall (1988) went so far as to say it could not be defined. Crow (1979, pg.7) points out that within the diversity of definitions, “we always come back to the proposition that pain is essentially what it means to the patient feeling it.” This view corresponds to one of the most widely accepted definitions of pain offered by McCaffery (1972, pg.8) who suggested that a good working definition for nurses is that, “Pain is what ever the experiencing person says it is, existing whenever he says it does.”

Sternbach (1968, pg.12) defined pain as, “1) A personal, private sensation of hurt ; 2) A harmful stimulus which signals current or impending tissue damage; 3) A pattern of responses which operate to protect the organism from harm.” The International Association for the Study of Pain offer the following definition, “an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.” (International Association for the study of pain (IASP) Subcommittee on taxonomy. 1978, pg.250)

Melzack and Wall (1988) suggest that this definition has great merit because of the acknowledgement of the variable relationship between perceived pain and injury and the acknowledgement of the emotional dimension of pain. However they criticise the use of the term ‘unpleasant’ as it does not go far enough toward elucidating the complexity of the experience of pain.

Many authors have categorised pain into acute and chronic pain. The National Institutes of Health Consensus Development Conference (1987) suggested three categories of pain based on cause: 1) pain following acute injury, disease or some type of surgery (acute pain) 2) pain associated with cancer or other progressive disorders (chronic malignant pain) 3) Pain in persons whose tissue injury is non progressive or healed (chronic non malignant pain).

Postoperative pain is a particular type of acute pain resulting from tissue injury (Dodson 1985) and should diminish as healing occurs. Postoperative pain may however if not controlled have significant detrimental effects on the patient’s recovery. Bonica (1987, pg.2) suggested that “severe acute pain in the postoperative period...has no useful function, and if not adequately relieved, produces abnormal psychological reactions which often cause complications.” Cousins (1994 pg.358) suggests that, “In addition to humanitarian reasons for improving acute pain treatment, there is now evidence that unrelieved acute pain may result in harmful physiological and psychological effects.”

These adverse effects may result in significant morbidity and even mortality (Yeager, Glass, Neff and Brink-Johnson 1987).

Although severe unrelieved postoperative pain may be destructive, this does not mean that all pain sensations have no useful purpose. Fordham (1988, pg.112) suggests that, “acute pain has an important biological warning function that something is wrong, in some instances it results in enforced stillness which promotes healing.” This may be important in relation to post operative pain as complete removal of pain may lead to patients over stressing wounds or causing other damage.

Postoperative pain may arise from a variety of causes. The response to tissue damage is very similar regardless of whether the cause is trauma or a surgical incision. There are however wide variations in the reactions of individuals to tissue damage which relates to both physiological and psychological factors and therefore there is no direct relationship between the extent of the injury and the pain experienced by individuals (Cousins 1994). As well as the tissue trauma caused by surgery postoperative discomfort may result from different causes. Sweeney (1977) identified intravenous infusions, urinary catheters, drainage tubes, nasogastric tubes, bulky dressings, nausea, backache and fatigue as possible causes of discomfort.

Tissue damage results in nociceptive afferent activity which travels back to the spinal cord. Action potentials also travel antidromatically, by axon collaterals which result in vasodilation and oedema through the release of substance P. Other factors released as a result of these changes include bradykinin and prostaglandins and some algogenic factors released from traumatised tissue, for example potassium. Substance P also stimulates release of serotonin from platelets and histamine from mast cells. Together these substances result in hyperalgesia in the surrounding area and many of these substances interact to produce vicious circles which could play a role in the

development of severe pain following surgery or trauma and provides the rationale for pre-emptive use of analgesia (Cousins 1994).

Nociceptive stimulation leads to a reflex increase in sympathetic activity. This results in increased peripheral resistance, heart rate and stroke volume which in turn cause an increase in the workload of the heart and increased oxygen consumption. Reflex sympathetic activity also results in skeletal muscle tension which may in turn increase nociception at the periphery (Cousins 1994). Nociceptive stimulation of the respiratory and cardiovascular control centres lead to stimulation of respiration and circulation.

Although acute pain can be said to have some useful properties in terms of warning the individual that something is wrong and may impose limitations to avoid aggravation of the pathophysiology (Bonica 1987), the mechanisms outlined mean that postoperative pain can have serious adverse physical and psychological effects if not relieved.

Alexander and Hill (1987) outline a number of serious consequences associated with postoperative pain. Pain may contribute to the development of a number of potential complications including pulmonary complications such as the clinical syndrome of 'post operative chest' which is more common following abdominal pain muscle spasm and other factors which restrict abdominal movement. Cousins (1994) points out that muscle spasm can lead to alterations in respiratory patterns including small tidal volumes and high inspiratory and expiratory pressures. Atelectasis may result leading to impaired gas exchange and reduced coughing leads to an increased risk of infection. Changes in hormonal levels are also associated with anaesthesia and surgery (Moore, and McQuay 1985) as well as pain and may lead to changes in carbohydrate, protein and fat metabolism leading to impaired wound healing (Alexander and Hill 1987; Bonica 1987).

Peck (1986) suggests that the perception of pain as an unpleasant sensation is usually associated with various psychological responses which include anxiety, apprehension

and fear. Anxiety may itself result in the release of a variety of hormones related to the body's response to stress. This response may have effects on immune function, blood viscosity and clotting time, fibrinolysis and platelet aggregation (Cousins 1994). Reducing anxiety and the consequent physiological disturbances that can result from the experience of pain has been shown by some studies to be beneficial (Hayward 1975) although the relationships between anxiety, pain relief and recovery are complicated (Seers 1987a).

1.4 Patients' experience of pain

The report of the Royal college of Surgeons and College of Anaesthetists (1990, pg.IV) suggested that, "The treatment of pain after surgery in British hospitals has been inadequate and has not advanced for many years."

This indictment of the state of the standards of care is well supported by studies reporting the experiences of patients following surgery and is not a new claim. Wallace and Norris (1975, pg.113) suggested that, "The past century has seen revolutionary changes in anaesthesia during the intra-operative period. However most patients who benefit from contemporary anaesthetic practice face postoperative pain relief by methods which have changed little since the 19th century."

The experiences of patients postoperatively has been explored by many researchers. One of the best known studies carried out in the United Kingdom by Seers (1987a) was a longitudinal descriptive study of patients' and nurses' ratings of pain and pain relief. A convenience sample of all patients admitted for elective abdominal surgery was obtained. Measures of pain and pain relief using verbal descriptor scales were obtained from both patients and nurses preoperatively and twice a day for seven days postoperatively. Over the seven day study period 75% of patients had rated their pain as "quite a lot" or more at least once by day three and this percentage had increased to 86.25% by day seven. Seers (1987a) also found that pain relief from analgesics was

variable and that nurses consistently underestimated the patients' pain. For all patients throughout the first seven days after surgery, pain killers made the pain slightly better in 38% of cases and very much better in 27% of cases.

Seers' research confirms the findings of a number of previous studies. Keeri-Szanto, and Heaman (1972) reported a study in which 106 patients in a Canadian hospital were asked about their pain experiences 3-5 days postoperatively. The authors report that 40% of the patients reported some degree of pain, the vast majority of "complaints" occurring in the first 24 hours. About half the reports were classified as being "trivial" although it is unclear how the reports were classified as trivial or by whom. This still left one out of five patients whose complaints were considered to be significant by the subject themselves and by the interviewer in terms of severity, duration, unexpectedness and other similar parameters. Nayman (1979) in a personal retrospective review of 138 patients undergoing cholecystectomy who were treated with a standard protocol involving intramuscular morphine found 23.3% experienced severe postoperative pain.

Using a sample of 109 patients from 5 central Illinois hospitals Cohen (1980) studied the adequacy of pain relief in hospitalised post-surgical patients. Patients were interviewed and their charts examined on the third postoperative day. In response to a general question, I understand that you have been receiving medication for pain, has the relief been adequate since your surgery, 79.8% of the patients said their pain relief had been adequate. A questionnaire (derived from Marks and Sachar 1973) asked the patient specific questions about their sleep, concentration, pain relief and if the pain had caused them to cry out, feel anxious, depressed, irritable or angry. Each patient was interviewed on the third post operative day and from the responses an index of pain was constructed. The results showed 75.2% of the patients were experiencing moderate or marked pain distress. The discrepancy between these results highlights the

inadequacy of asking general questions about an individual's pain experiences and the difficulty of assessing pain.

Weiss, Sriwatatanakul, Alloza, Weintraub and Lasagna (1983) studied nurses' and house staffs' attitudes towards pain relief and also reviewed the experiences of 81 patients. 66 of the patients recorded their pain experiences following administration of analgesia. The lowest pain in the four hours following administration of the medication was recorded using the four categories severe, moderate, mild or none. The lowest point experienced by 5% of the patients was severe pain, 36% had moderate and 42% had mild and 17% had none although, in a similar finding to Cohen (1980), 75% of the patients thought that the pain relief had been adequate. Cohen also found that the patients received less than the prescribed amount of analgesia. Only 4 of the patients with marked pain distress had received analgesia equivalent to that ordered.

The finding that general questions were inadequate to assess patients' experiences has also been supported by Donovan (1983). Donovan found that although 86% of patients studied expressed satisfaction with their postoperative pain relief a quarter of these did in fact experience moderate, severe or unbearable pain. Taken with those who expressed dissatisfaction with their pain relief they constituted one third of the patients surveyed.

Sriwatanakul, Weis, Alloza, Kelvie, Weintraub and Lasagna (1983) reviewed 526 medical records of surgical patients and interviewed 81 of the patients at one American hospital. Observations of pain intensity and pain relief during the postoperative period showed that 41% of the patients still complained of at least moderate pain at the period of lowest pain intensity. Patients only received an average of 70% of the maximal prescribed dose of analgesics during the first 24 hours and an average of 43% during the second 24 hours.

In another more recent study (Donovan, Dillon and McGuire 1987) of medical and surgical patients aimed at discovering the incidence and characteristics of pain in hospitalised medical-surgical patients 353 randomly selected patients' experiences were assessed using a pain scale derived from the McGill pain questionnaire (Melzack 1975). Patients rated their pain intensity on a scale of 0-5. 12 patients reported a score of 5, 14 patients reported a score of 4, 50 patients reported a score of 3, 90 patients reported a score of 2, 73 patients reported a score of 1 and 112 reported a score of 0. 203 patients reported experiencing pain which was horrible or excruciating at some time during their hospitalisation.

The findings of poor pain relief have been replicated in a number of countries apart from the United Kingdom and North America. Owen, McMillan and Rogowski (1990) reported the results of an audit of postoperative pain at a hospital in Australia in which patients were assessed using a verbal descriptor scale at 24 and 72 hours postoperatively. After 24 hours 37% reported moderate pain, 28% reported severe pain and 9% reported unbearable pain, the percentages at 72 hours were 39%, 21% and 5% respectively.

Juhl, Christensen, Bulow, Wilbek, Dreijer and Egelund (1993) found that of 191 patients in a hospital in Denmark, 47% were in pain at the time of the postoperative interview. This study also identified inadequate analgesia with 10% of the patients not receiving any analgesia and 15% receiving less than had been prescribed. The authors suggest that this is an improvement on previous studies.

Inadequate relief of pain has also been identified in relation to medical patients. Marks and Sachar (1973) found from structured interviews of 37 medical patients being treated for pain that 32% of the patients were continuing to experience severe distress, despite the analgesic regime and another 41% were in moderate distress.

Although postoperative pain is normally viewed as lasting a limited time period, Melzack, Abbot, Zackon, Mulder and Davis (1987) identified a group of patients who due to complications do not follow the expected course and may also experience ineffective pain relief extending over the normal 3-4 days postoperatively. Seers (1987a) found that although 57% of all reports of "Quite a lot" or worse pain were made during the first three post operative days, the remaining 43% were made during the fourth to seventh days after surgery.

In addition to the study by Seers already mentioned four other studies lend support to the notion that there is inadequate postoperative pain relief in the United Kingdom. Kuhn, Cooke, Collins, Jones, and Mucklow (1990) in a study of 50 patients admitted for cholecystectomy and 51 admitted for hysterectomy identified inadequate pain relief. Using visual analogue scales, administered following each dose of postoperative analgesia, the study identified that during the first 24 hours following surgery recorded pain levels were 60% of the maximum. Patients also had to wait for a median time of 2 hours (interquartile range 1-3.5) following the return of pain for further pain relief. Carr (1990) in a study of 21 patients undergoing cholecystectomy, open renal surgery or sigmoid colectomy were identified from the admission list. Using visual analogue scales with a range of 0-100 patients were assessed every four hours on the first postoperative day. Nine patients had an average score of between 40 and 59, four had a score of between 60 and 79 and two had an average of between 80 and 100. The study also looked at analgesic administration and found that eight patients received only one dose of analgesia and four received only two and only one patient received five doses. The visual analogue scales revealed that the analgesia had little effect on the pain scores suggesting that patients who asked for analgesia were in severe pain and the analgesia was insufficient to control the pain. Inadequate analgesia administration was also identified by Closs (1990). In a retrospective study of patients whose sleep had been disturbed by pain (n=20) and a group of patients whose sleep was not disturbed in this way, the patients' analgesic consumption was reviewed on the assumption that

patients whose sleep was disturbed experienced more severe pain. Overall it was found that only 30-35% of the maximum number of doses of analgesia prescribed were administered in the immediate post operative period. Baxter (1989) in a descriptive study of patients' experiences found that 19 out of 27 patients experienced moderate to severe pain (40-100 on a visual analogue scale) and in a more recent study in a post-anaesthetic audit 39% of 2541 patients interviewed over a period of 10 months had experienced moderate or severe postoperative pain (Lloyd and McLauchlan 1994).

The experience of pain following surgery is not confined to adults. Beyer, DeGood and Ashley (1983) compared the experiences of adults and children undergoing cardiac surgery. They found that six patients in the sample received no analgesia postoperatively, all these six patients were children. Overall the children were prescribed significantly less analgesia and they also received less of the analgesia prescribed, 30% compared to 70% for the adults. A number of other studies have supported this finding (Eland and Anderson 1977).

1.5 Reasons for poor relief of postoperative pain

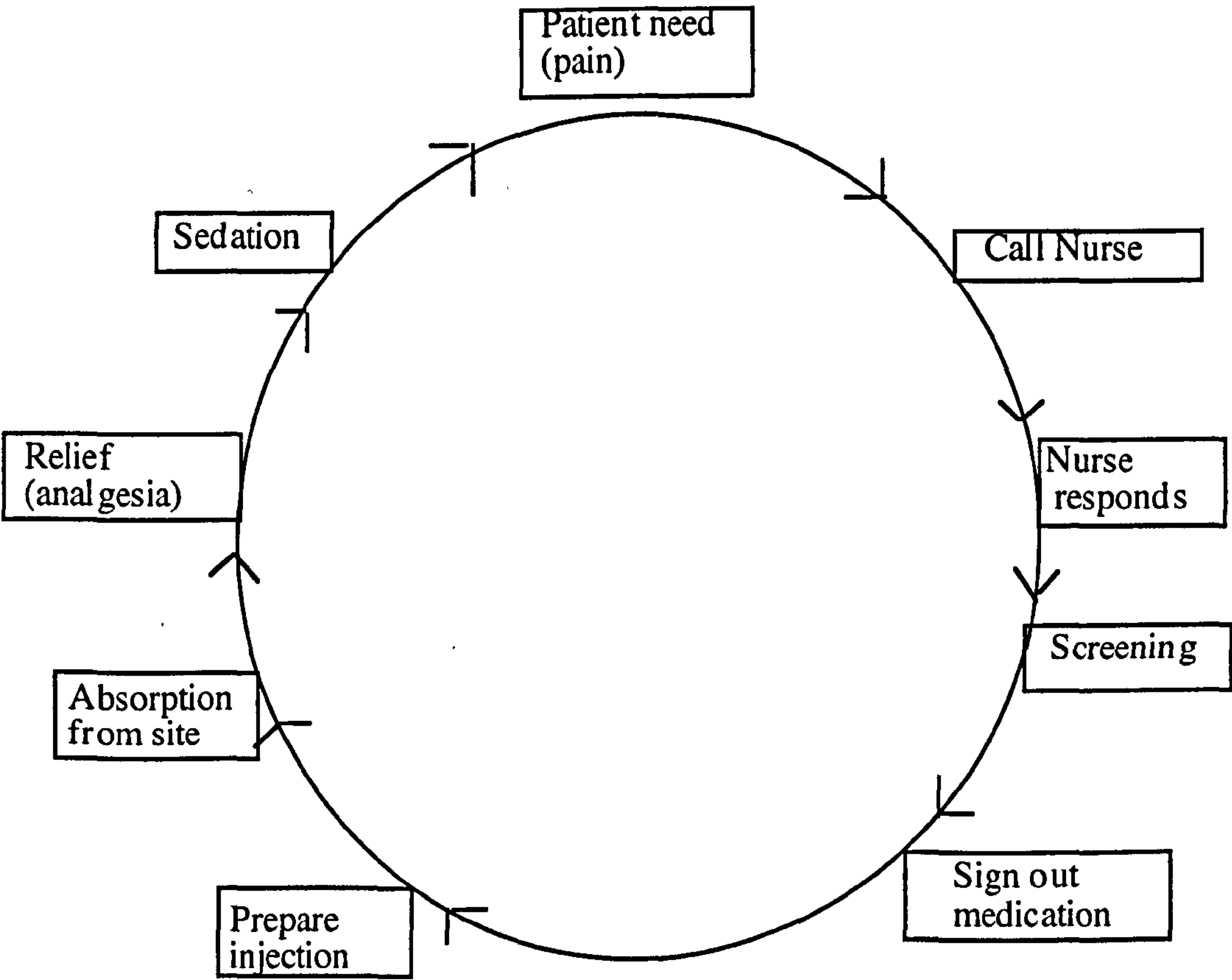
A number of factors may contribute to the findings of inadequate pain relief.

1.5.1 Traditional methods

Despite the evidence produced over the last century that traditional methods of pain relief following surgery are inadequate there has been a reliance on intermittently administered opiate analgesia (Dodson 1982) although the increasing use of patient controlled analgesia, subcutaneous injections and local anaesthetics may be changing this position. Many difficulties exist in relation to the use of opiate analgesia. The pharmacokinetics of opiates mean that absorption from an intramuscular site can be extremely variable. Austin, Stapleton, and Mather (1980) in a study of 10 female patients undergoing elective abdominal hysterectomies found that poor pain control, following intermittent intramuscular meperidine (pethidine) injections was due to

inadequate, fluctuating and unpredictable blood concentrations. PRN prescriptions are also open to differing interpretation and may lead to wide variations in the dose and the time that the patient receives analgesia (Freidman, 1983). Graves, Foster, Batenhorst, Bennett and Baumann (1983) suggests that the reason for poor pain relief lies more in the inappropriate methods of delivery rather than the need for new analgesics. The sequence of requesting analgesia leads to delays at a number of points which may depend on other patients' demands on the nurses' time. (See figure 3)

Figure 3 The cyclic character of conventional analgesic therapy (adapted from Graves et al. 1983)



These delays may add up to a considerable time which has been estimated at as long as 30 minutes (Vache 1982). Keats (1976) emphasised these difficulties when suggesting that the number of analgesic injections a patient received was directly proportional to the amount of nursing staff available to that patient.

The use of patient controlled analgesia (PCA) has to a degree overcome some of these problems. Graves et al. (1983) reviewed many studies that have demonstrated PCA to be an effective method of analgesia delivery in obstetric and postoperative patients and in the relief of pain due to terminal care. Although the evaluation of PCA is ongoing, most studies have found benefits of improved pain control and reduced complications (for example Lange 1988; Collier 1990; Thomas and Rose 1993) and savings in nursing time (Koh and Thomas 1994), although Kleiman, Lipman, Hare and McDonald (1987) found no difference in pain ratings between patients receiving IM and PCA analgesia. The use of PCA depends to a large degree on the skills of the nursing staff. Llewellyn (1993) when discussing the use of PCA with children suggests that nurses will need to reinforce education, assess effectiveness, instigate change when necessary and intervene should adverse effects occur and maintain safety throughout. Thomas and Rose (1993) suggests that it should not be assumed that good pain control is being achieved simply because a PCA system is attached to the patient. PCA may provide inadequate pain relief due to an inadequate prescription (inappropriately small dose or a very long lockout period) or because of patient attitudes such as fear of addiction or a belief that the nurse should control the pain relief. This highlights the need for nurses to possess good assessment skills for as Thomas and Rose (1993, pg.1722) suggest “unless individual assessments of patients using PCA are made, PCA may become a victim of the same inadequacies of the conventional intramuscular method.”

Pain assessment with PCA may be particularly important in young children. Howard (1993) discusses the notion of nurse controlled analgesia. Used for children too young to use conventional PCA, the PCA pump is used with a background infusion with the

option of one or two additional boluses given at the discretion of the named nurse. This has the advantage of reducing the time required to check and administer analgesia.

1.5.2 Undertreatment

The deficiencies of the traditional approach to pain relief are exacerbated by the findings of many research reports that have identified under treatment of patients (Keeri-Szanto, and Heaman 1972; Cronin, Redfern and Utting, J. 1973; Banister 1974; Tammisto 1978; Cohen 1980; Fox 1982; Tamsen, Hartuig and Fagerlund, C. 1982; Donovan 1983; Sriwatanakul et al. 1983). Marks and Sachar (1973) in a study of the experiences of medical patients found that when reviewing prescription charts significant under treatment of patients was revealed. Marks and Sachar (1973, pg.173) found that “Many physicians underestimated the effective dose range, overestimated the duration of action, and exaggerated the dangers of addiction for medical inpatients receiving meperidine in a therapeutic dosage range.” Add to these findings the evidence already reviewed suggesting patients receive less than the analgesia prescribed there is good evidence that patients are being undertreated.

Much of this research is now over 10 years old and therefore it can not necessarily be assumed to be the situation today. The advent of patient controlled analgesia and the use of local anaesthetics has reduced the reliance on intermittent intramuscular injection of opiate drugs and therefore this may have reduced the scope for inadequate analgesia administration. However there is more recent evidence of exaggerated fears of side effects (Lloyd and McLauchlan 1994).

An exaggerated fear of addiction amongst nursing and medical staff has been reported by several authors as a possible cause of under treatment (Graffam 1979). Freidman (1983) found that 26% of nurses studied quoted addiction as one of the major side effects of narcotic analgesics. The findings of Porter and Jick (1980) are often quoted regarding addiction rates following the use of narcotic analgesia. In a review of 11,882

patients who had received at least one narcotic only 4 cases of addiction were discovered (considered serious in only one case) which represents an addiction rate of 0.03%. The extent to which this can be extrapolated to surgical patients is unclear however this finding has been interpreted as an addiction rate of less than one percent by both Cohen (1980) and Weiss et al. (1983). Cohen administered a questionnaire to 109 nurses in 5 central Illinois hospitals which included vignettes of patients. One such vignette presented the situation of a patient given pethidine 100mg four hourly for a week for severe pain. When asked about the probability of this patient becoming addicted 31.6% of the nurses suggested a probability of less than 1% defined by Cohen as correct, 68.4% thought it was above this, 13.2% suggested that it was as high as 26%. When asked to estimate the number of people who became addicted while in hospital, 79 (62.3%) thought it was under 5% while 16.7% thought it was under 1%. Marks and Sachar (1973) found that the corresponding percentages responding to these questions when asking physicians were 42% and 40%. Weiss et al. (1983) found when asking a similar question to Cohen that 84.1% of the 57 doctors and 81.3% of the nurses overestimated the risk. Cohen (1980, pg.273) concludes that "nurses grossly overestimated the addictive potential of narcotic analgesics." It seems that this fear of addiction may also be transmitted to patients. Seers (1987a pg.191) found that amongst the patients studied, "It seemed the most usual reason for refusing to take a pain killer was fear of addiction, a fear often reinforced by the nurse."

Sofaer (1984) however did not find addiction to be a major concern amongst nurses questioned although this study asked the nurses to suggest what proportion of patients were at risk of addiction. Although 56% suggested a very small proportion there is no quantification of what this means. Even with this question 11% of the respondents suggested a large or moderate proportion were at risk. Lloyd and McLauchlan (1994) found that this fear was higher among junior nurses.

Another fear that nurses demonstrate in relation to narcotic analgesic use is the fear of respiratory depression. Cohen (1980, pg.272) found that “most nurses (n=84 69.4%) believe that administration of narcotic analgesics is responsible for patients demonstrating inadequate respiration one day after surgery, while in fact inadequate pain relief may play a large role.” Lloyd and McLauchlan (1994) found that 22% of night nurses and 16% of day nurses were worried about patients developing breathing problems.

Although respiratory depression is a potential side effect of narcotic analgesia (Catling, Pinto and Jordan 1980) the anxiety of nurses in relation to respiratory depression may well be another cause of under treatment. Some studies have however failed to identify respiratory depression as a major concern. Chapman, Ganendran, Scott and Basford (1987) found that in a survey of 86 nurses, only 30% thought that the respiratory rate was the vital sign most affected by narcotic analgesics, compared to 11% in a study by Cartwright (1985). This may be exacerbated by a limited knowledge of the treatments being used.

These fears may contribute to a general feeling that giving analgesia is not necessarily a good thing. Lloyd and McLauchlan (1994) found that 36% to 47% of junior nurses surveyed believed that patients should be encouraged to take minimum analgesia and Hosking (1985) found that half of the 75 nurses they surveyed would disregard a prescription request to give regular analgesia.

1.5.3 Poor Knowledge

Sriwatanakul et al. (1983) studied nurses' and house-staffs' understanding of morphine and meperidine (pethidine). The authors sent a questionnaire to 97 house staff members and 142 nurses of which 59% and 49% were returned respectively. The authors concluded, “The optimal doses and duration of action of both morphine and

meperidine as judged by some of the house staff and nurses did not agree with the accepted pharmacological profile of these drugs” (pg.928).

Sofaer (1984) found that the nurses’ she interviewed displayed poor knowledge and that there were a number of misconceptions and prejudices about pain relief. The majority of nurses felt they had a moderate degree of knowledge although 75% felt they would like more training. An interesting finding from this study was that although 90% felt the ward was the primary source of knowledge, Short (1978) reports that charge nurses expect education to occur in school. This mismatch may represent a possible reason for a lack of knowledge amongst nurses.

Watt-Watson (1987) questioned 207 subjects who voluntarily attended a pain education programme. Although this may constitute an unrepresentative sample a lack of knowledge was identified in relation to narcotic administration and potential side effects. McCaffery, Ferrell, O’Neil-Page, and Lester (1990) reported a study with a similar sample consisting of data obtained from 27 workshops on pain across 14 states of the United States (2,459 nurses). The results indicated that nurses lack knowledge in classification of opioids ranging from 23 to 98% correct response across seven analgesic drugs. Hamilton and Edgar (1992) also identified a number of areas in which there were deficiencies in 318 Canadian nurses’ knowledge including opioid addiction, equivalent dosing, properties of opioids and differences in acute and chronic pain.

Marks and Sachar (1973) found that physicians, as well as having misconceptions about addiction, underestimated the minimal effective dose of pethidine. Weiss et al. (1983) in a survey of house staff and nurses in a hospital in New York found misconceptions about adding other drugs to narcotics. Hosking (1985) also reports a lack of knowledge regarding narcotic analgesic administration in surgical ward nurses of various grades. Half the staff nurses surveyed were unaware of the rationale of pain prevention and would ignore a prescribed request to administer analgesia regularly.

Knowledge of side effects was also poor leading to more than half the nurses not recognising the warning signs indicating it might be dangerous to administer an analgesic. In a more recent survey of 123 registered nurses in a rural Appalachian area Kubecka, Simon and Hardy Boettcher (1996) found poor knowledge in relation to behavioural indicators of pain, classification of opioid analgesia, properties of opioid analgesia and adjuvant medications and incidence of addiction. Goodwin, Goodwin and Vogel (1979) found that physicians and nurses had a poor understanding of the nature of placebos and tend to use placebos for patients who complain or are seen as over demanding. These patients are the type of patients who are least likely to respond to a placebo.

Sofaer (1984) used a focused educational programme to address this difficulty and found that such a programme did have a positive effect on the relief of post operative pain. It is interesting to note however that the changes that resulted from the programme may not have been sustained. Sofaer (1984) suggests that the innovation introduced may not have been sustainable without regular reinforcement. This finding suggests that education on its own may not be enough to improve the relief of postoperative pain but that other factors need to be considered. Faye, McLees, Belyea, and Clipp (1992) also report a study which examined different educational approaches to enhance pain assessment. The study demonstrated that the use of a video was the most effective educational method in improving infrequent assessment but the study did not assess the sustainability of this change.

1.5.4 Inappropriate attitudes

“Effective relief from postoperative pain depends largely on the insights and attitudes of those caring directly for the patient” (Hosking and Welchew 1985, pg.13). Sofaer (1984) suggests that the care of postoperative patients experiencing pain may be compromised by misconceptions held by health care professionals. A number of

misconceptions relating to postoperative pain have developed, which are outlined in the Royal college of Surgeons and College of Anaesthetists (1990) report. These are that :

- The Doctor and Nurses believe they, rather than the patient, are the authority on the patient's pain.
- Comparable physical stimuli produce comparable severity of pain in different people and, similarly equal doses of analgesics will produce equal outcome for all people.
- Physical signs, physiological or behavioural accompany pain and can be used to verify its existence and severity.
- Postoperative pain cannot be prevented.

Winer (1975) found in exploring nurses' reactions to patients with low back pain that nurses may stereotype patients and then treat them according to their prejudices.

Wiener suggests that "patients who send out the wrong behavioural cues or employ unfavourable tactics come to be stereotyped" (Winer 1975, pg.513). Thus if the patient does not fulfil the expectations that the nurse has about that patient's pain experiences they may be labelled as clock watchers, crocks, malingerers and manipulators.

Woodgate and Kristjanson (1996) found similar responses from nurses caring for children. "For nurses, "good" children were those who were quiet or did not complain. Nurses deemed certain behaviours as desirable and others as undesirable. The more overt the children's behaviours were, the more likely nurses would perceive these children as hysterical, whining, or miserable"(pg.278).

1.5.5 Aim of pain relief

Nurses' views of the aim of postoperative pain relief may also be a source of variation in pain relief. Sofaer (1984) found that only 9% of the nurses questioned felt that postoperative pain should be completely relieved, 79% felt it should be relieved as much as possible, 3% felt it should be relieved to the point at which the patient can tolerate it while 9% felt it should only be relieved enough to allow the patient to function. Weiss et al. (1983) asked nurses and physicians what the goal of

postoperative pain relief should be. 21.4% of nurses felt that the goal should be complete pain relief, 54.2% felt there should be enough relief so that pain is noticed but not distressing, 11.2% felt there should be moderate relief with a small degree of distress, 8.6% felt there should be relief only at peak periods of pain. The percentages for the physicians were 22.8%, 63.1%, 12.2%, 0.0%, and 1.7%. Cohen (1980) found that when nurses were asked their aim of administering analgesics on the first two postoperative days 3.3% said it was to relieve pain completely, 57.5% to relieve the pain as much as possible, 38.3% said enough to function and 0.8% said to relieve the pain to a level where the patient can just tolerate it. These answers were significantly different from those of the patients who responded to the question "what do you consider the ideal goal for pain relief following surgery?" 28.6% said it was to relieve pain completely, 46.9% to relieve the pain as much as possible, 18.4% said enough to function and 6.1% said to relieve the pain to a level where the patient can just tolerate it. Seers (1987a) in her study found patients had wide variations in their expectations of what pain to expect on the first postoperative day. Seers also found 34 out of 80 patients did not know what to expect. This confusion in expectation resulted in a large number of the patients experiencing more pain than they expected (36.1%). This was similar to a finding by Cohen (1980) who found 38.5% of patients experienced more pain than expected. Seers (1987a) however found a higher percentage of patients who experienced less pain than they expected (40.4% as opposed to 21.1%).

If patients hold low expectations of postoperative pain relief this may lead to them accepting unnecessarily high levels of pain and may inhibit them from asking for pain relief. Patients often seem unaware of when to ask for pain killers (Hayward 1975). Cohen (1980) found that 22.1% of the patients questioned were uncertain or afraid to ask for pain relief and Seers (1987b) found that although 68% of nurses felt that patients would ask for analgesia, 42% of the patients expected the nurse to know.

Although 75% of nurses felt that analgesics met the needs of their patients nearly one third of the patients felt they had not been able to have a pain killer when they wanted it.

As well as this mismatch between the expectations of patients and nurses other factors may limit the administration of analgesia to patients in pain. Fagerhaugh and Strauss (1977) report three factors that may result in differences between actual and potential pain relief. The first is the work demands of the clinical setting and secondly the complexity of patient-staff and staff-staff relationships including the need of the patient to know when and how to request pain relief and the amount of pain they are to endure, together with each nurse and patient having their own, possibly conflicting, philosophy about pain and its relief. The organisational setting may therefore influence the effectiveness of pain relief as may the behaviours of the staff. Staff may appear to be too busy for the patients to feel they can request pain relief. Ley (1976) suggested that patients find it difficult to interrupt busy nurses. Where patients' pain trajectories or experiences are different to that expected by the staff, they may be unprepared to handle it and may label the patient as uncooperative or difficult leading to a deterioration in staff patient relationships Strauss, Fagerhaugh and Glaser (1974).

1.5.6 Lack of accountability

Fagerhaugh and Strauss (1977) suggested that a third factor that explained the difference between actual and potential pain relief was the institutional accountability surrounding pain management, or lack of it. The nature of pain dictates that effective pain relief requires a multidisciplinary response. For example, nurses can only administer the analgesics that are prescribed while medical staff rely on the pain assessment of nurses to prescribe accurately. Anaesthetists are often responsible for initiating postoperative pain control while the surgical team is often responsible for the ongoing treatment. Other professionals may also be involved for example pharmacists and physiotherapists. The Royal college of Surgeons and College of Anaesthetists (1990 pg.13) report suggests that "In general the anaesthetist prescribes the regimen

and then hand over responsibility to ward medical staff who are often the most junior. The responsibility is in turn handed to the nursing staff.”

The problem associated with such multidisciplinary involvement is that there can be confusion over who is responsible for pain control. A number of studies in the 1970's suggest that health care systems do not hold health team members accountable for pain relief (Fagerhaugh 1974; Fagerhaugh and Strauss 1977). McCaffery (1979) suggests that nurses are rarely responsible for the treatment of pain but they may be expected to control the patients' expression of pain. The patient can fulfil this role by being “good” and exhibiting control by controlling the expression of pain. This is often demonstrated in the language nurses use about pain. Patients are reported to have ‘complained of pain’ and have ‘done well’ when they don’t require pain relief. Controlling the expression of pain is not the same as controlling the pain itself.

There is some evidence that nurses think that the medical profession is responsible for pain control (Lockstone 1982) although the opposite opinion has also been expressed (Carr 1991). Dodson (1985) however suggested that medical staff should give clear prescriptions which would relieve nurses of the responsibility for deciding if and when to give analgesia.

The Royal college of Surgeons and College of Anaesthetists (1990, pg.1) highlighted this problem when they suggested that “it is vital that a named member of staff is responsible for a hospital policy which ensures satisfactory pain relief for all patients after surgery.” This has lead to the development of acute pain teams as described by Ready, Oden, Chadwick, Benedetti, Rooke, Caplan, Lorie and Wild (1988) although the relationship between pain teams and ward nurses and doctors has yet to be studied in detail.

1.6 Difficulties in assessing pain

Pain perception is extremely complex; therefore, any attempt to evaluate pain in another person must begin with the recognition that pain is a subjective phenomenon, and many factors influence the perception of, response to, and reporting of pain. Thus accurate subjective and objective assessment of pain in another is difficult (Jacox 1979).

One individual can never experience directly the pain and distress of another and therefore there has to be a process by which the sufferer communicates their experiences to another. Davitz and Davitz (1981, pg.9) suggests that “any evaluation of nature or degree of another person’s suffering necessarily depends on inference.” If this inference is based on observed cues be they verbal or non-verbal from the patient in pain then it is argued by Davitz that individuals may interpret these differently depending on their characteristic inferential response to these cues. Accepting this suggests that an understanding of the factors that influence an individuals’ inferences are important to understand the effect of this on care. A number of factors have been investigated in relation to their effect on inferences of pain and suffering.

There has been relatively little research into the factors that influence nurses’ pain assessment behaviour (Nash, Edwards, and Nebauer 1993). Charap (1982) and Fox (1982) both highlight the finding that nurses lack a positive attitude to the recognition of pain and the administration of pain medication. Nash et al. (1993) investigated the factors that influence nurses’ intention to assess patients’ pain and use what they refer to as the theory of planned action, although this theory was first described by Ajzen (1985) and is described as a theory of planned behaviour. The authors identified that the intention to perform an assessment is influenced by personal attitudes, subjective norms (this reflects a person’s belief about the expectations of significant others regarding performance of a particular behaviour) and perceived control (which reflects a person’s beliefs as to how easy or difficult performance of the behaviour is likely to

be and is related to an individual's perceptions about the presence or absence of the necessary resources and opportunities regarding performance of the behaviour).

1.7 Discrepancy between nurses' and patients' pain assessment

In view of these difficulties it may not be too surprising that many studies have identified discrepancies between nurses' assessment of pain and patients' experiences. Seers (1987a) assessed the pain experience of a convenience sample of patients undergoing elective abdominal surgery using a verbal descriptor scale. The nurse in charge was approached up to 5 minutes before or after interviewing the patients. Comparisons of the scores showed that nurses consistently rated the patients' pain lower than the patients. For 77% of the time nurses and patients did not agree, 54% of nurses rated the patient's pain as less and 13% as more than did the patient. Seers comments that nurses based their analgesic administration on a number of factors such as time since surgery and type of operation while discussion with the patient was not of major importance in any assessment.

Graffam (1981, pg.13) suggested that, "while studies have identified some of the many factors which influence the perception of pain and the expectations held for its management, a totally adequate explanation for the type of nurse-patient behaviours observed in relation to pain has yet to be found." Graffam reports a study of one hundred patients and 61 nurses who were questioned following a request for pain relief by the patient and 30-60 minutes following a pain relief measure. Significant disparity was found between the nurses' and patients' rating of pain in the severe category although the author does not outline what is meant by severe. Disagreement occurred in the overall assessment for both acute and chronic pain. In 80% of the cases when disagreement did occur the patients judged the pain to be more severe both initially and following pain relief.

A second finding was that assessment of pain by nurses was minimal. 29 nurses failed to make any assessment of relief obtained because they stated that the patient would let them know if they were still in pain. Graffam reports that conversations with patients suggested that this was an inaccurate assumption. Nurses tended to rely on their observations of the patients' appearance to judge their pain experiences which can be an inaccurate form of assessment. More recently Pearce (1993) also found limited formal pain assessment in two acute hospital wards in a district hospital.

Johnston (1976) in a study of 43 patients following gynaecological surgery and 19 nurses found nurses did not communicate on, amongst other things, pain efficiently. Johnston asked patients how they felt and "as near simultaneously as possible" a nurse completed a similar form describing how the patient felt. The inventory covered both intensity and duration of pain. The nurses had significantly lower scores than patients for both pain duration and intensity. 11 nurses overestimated and 24 nurses underestimated pain duration while seven overestimated and 27 underestimated pain intensity. The nurses actually achieved fewer correct responses than would be expected by chance and Johnston concluded that, "the data would suggest that nurses do so badly on the assessment of pain that analgesics might more reliably be given to patients in greatest pain by distributing them randomly, nurses performing worse than chance" (pg.41).

Camp and O'Sullivan (1987) studied the agreement between the assessment of pain as recorded by nurses and the perception of pain as described by cancer patients. 30 nurse-patient dyads were studied. Each nurse/patient pairing was identified when a patient reported pain, patients were interviewed and the patients' nursing and medical records were reviewed. The results suggested that the majority of nurses documented only the location of pain and verbal statements by patients reporting pain and in total recorded less than 50% of the information an independent researcher was able to find; however, the documentation was not always in agreement with the cancer patients'

description of pain. Although this study relates to cancer patients similar findings have been found in relation to postoperative patients. Baxter (1989) in a survey of postoperative patients, found that there were a number of discrepancies between the nurses' written notes and the patients' reported pain intensities. An underestimation of some patients' comfort was reported by the nurses and statements were used indiscriminately for patients scoring high and low pain intensities.

McKinley and Botti (1991) investigated the agreement between nurses' and patients' estimation of the patients' pain. 115 nurses and 115 patients were recruited to the study. Patients filled in a visual analogue scale while nurses completed a self administered questionnaire. 72 patients (63%) and 97 nurses (84%) indicated that the patients had pain. Patients' and nurses' reports were poorly correlated. Nurses reported that the factors that influenced them most were what the patient said; the patient's report of the severity of pain; the patient's facial expression and the patient's posture. The authors concluded that the prevalence of pain was high and that the nurses judgement was poor.

The most recent study comparing nurses' and students' pain assessment (Field 1996) also found that nurses give consistently lower pain ratings than patients. The study used a five point verbal descriptor scale to assess pain and used analysis of variance to analyse the results although it is unclear how this is achieved. The author reports that discrepancy scores were calculated to demonstrate the difference between nurses' and patients' assessment however the basis of these scores and the statistical tests used to identify differences are not reported.

Not all studies have identified discrepancies between patients' and nurses' estimates of pain. Thompson, Webster, and Sutton (1994) in a survey of 10 nurse's and 100 patient's assessment of pain in a coronary care unit found that the nurses' assessments

agreed with patients' ratings of pain. Other studies have also found nurses' assessments to be accurate (Walkenstein 1982; Van der Does 1989).

The variable findings in the comparisons of nurses' and patients' pain scores may be related to the level of the patients' pain. Zalon (1993) found that nurses' assessment of patients' pain were correlated ($r=0.304$, $p<0.01$). However they also found that nurses tended to overestimate mild pain and underestimate severe pain. The authors used a sign test to suggest that this difference was significant although it is unclear how this was applied. Thus the tendency of nurses to over or under assess pain may depend on the severity of the patient's pain. This suggestion is supported by a study of elderly patients and the community nurses caring for them (Walker, Akinsanya, Davis and Marcer 1990) which found that nurses were inclined to underestimate levels of greatest pain and overestimate levels of least pain.

Heidrich and Perry (1982) found that some nurses may not know how to assess pain and simply rely on their own judgements regarding how much pain they believe patients are experiencing. This may explain findings by Saxey (1986) and Jacox (1979) that nurses prefer to rely on physiological signs and behaviours. Jacox in a survey of 443 registered and student nurses found that nurses reported that physiological signs were easier indices to use in pain assessment than verbal communication. Such reliance on observations is unreliable in assessing pain. Teske, Daut, and Cleeland (1983) tried to develop a rating instrument designed to assess pain behaviour by means of standardised observational ratings. They suggested that, "correspondence between self report and observation is expected to be far from perfect" (pg.290) due to the factors which may affect self report or non-verbal behaviour or both. These include such things as anxiety, depression, patient's response style, patient's ethnic background and other variables. Despite these factors the authors expected "some correspondence" between observational measures of pain and self report by patients. Teske et al. (1983) compared the ratings using the developed scale and the patients' ratings on a visual

analogue scale. Although the scale showed high inter rater reliability, the validity of the scale was poor. They report that “even though these nurses were able to agree on the judgements of pain, the relationship between judgements and patients’ self reports, while significant, is not high. The variance in observers’ judgements of pain only accounts for 10-16% of the variance in patients’ self reports”(pg.294). Teske et al. (1983) suggests that this has important implications for practice in that this highlights the importance of caution in judging a patient’s pain using observations of pain behaviours.

The assumption that patients’ verbal reports are the best indicator of the patient’s experiences is common in the literature, indeed it is inherent in the definition of pain as given by McCaffery. McCaffery (1972) however points out that what the patient says is not what the patient verbalises but includes all verbal and non verbal behaviours. The value of verbal reports of pain has been a matter of debate in the medical literature over many years (Parkhouse and Holmes 1963). Fordyce (1976) suggest that there are at least two reasons why pain might not be simply what the patient says it is. Firstly a patient’s knowledge and perception will limit their ability to discriminate what is happening in his body. Secondly in expressing one’s own experiences, verbal and non verbal behaviours often differ, and there is no reason to believe that the verbal behaviour is more valid or believable than non-verbal. Fordyce points out that the discrepancy between what people say and what they do is not simply a question of honesty or candour. For various reasons, people may intentionally or unintentionally try to conceal or exaggerate the amount of pain they are feeling. Proshansky, Ittelson, and Rivlin (1970) suggest that privacy removes social constraints and permits behaviours such as vocalisations, body movements and vomiting, which sufferers would not wish to perform in public. Fagerhaugh and Strauss (1977) discusses the concept of pain work and suggests that “staff members can be much concerned with or disturbed by the overly expressive patient, for they are up against not only how to manage the patient’s expression of pain but also, perhaps, how to manage their own

reactions to that expression”(pg.20). A similar finding was reported by Wiener (1975) who studied nurses’ reactions to patients with low back pain. Pain expression was seen as appropriate up to a certain level however “Staff members signal to patients by facial expression body posture, or, when pain expression is excessive, by explicit statement, that expressions like loud moaning and whimpering are not acceptable” (pg.512). It is not surprising therefore that Jacox (1979) in a study of 102 patients found that 70% of them did not like discussing their pain with others and some may have cultural inhibitions to the expression of pain (Sargent 1984).

Keats (1976) suggests that there may be many reasons why a patient might ask for a pain killer and other discomforts will influence this. Chapman (1985) suggests a wide range of negative feelings and fears may be expressed by the patient through a complaint of pain. This may suggest nothing more than the multifactorial nature of pain, such factors forming part of the overall experience of pain. However the suggestions that verbal reports may be unreliable suggests that pain is what ever the patient experiences rather than what they necessarily say. A patient may state that they have no pain because of a fear of narcotic analgesics, despite displaying non-verbal signs of pain or may experience pain but wishes to appear to have recovered. It could be argued that the evidence highlights the need for a comprehensive assessment of the patient which includes the patients’ verbal descriptions, but acknowledges this may be tempered by other factors. Perhaps this is to say that what the patient says should be accepted rather than believed and that it should be remembered that when McCaffery talks about what the patient ‘says’ this includes any channel of communication the patient may use.

The available research suggests that the reliance nurses place on patients’ verbal response is variable. Saxey (1986) asked 35 nurses how they assessed pain, 91% identified the patient’s verbal report as a key factor however, even those who strongly agreed that patients’ pain is what they say it is were reluctant to use patients’ verbal

reports as the best indicator. McCaffery (1983) found that nurses felt they had to substantiate patients' reports by observing facial expressions or autonomic signs. Baer, Davitz and Lieb (1970) found that nurses inferred more pain from verbal than non verbal communication although Jacox and Stewart (1973) and Oberst (1978) have found the opposite and Jacox (1979) found that nurses found it easier to use physiological signs and behaviours in pain assessment rather than verbal reports. Barnhouse, Kolodychuk, Pankratz and Olinger (1988) in a comparison of nurses' and patients' assessments of postsurgical pain found a reliance on verbal reports and a lack of assessment of non-verbal indicators of pain. Sengstaken and King (1993) studied 76 elderly people in nursing homes who were suffering from chronic pain. Of those able to communicate 43% had been diagnosed as being in pain by their physicians. Of the other 24 who could not verbalise their pain only 4 (17%) had been diagnosed. Marzinski (1991) studied 60 Alzheimer's patients who were unable to communicate verbally and showed that 26 had conditions commonly associated with pain but only three were given analgesics. These studies suggest that relying totally on verbal reports of pain may be misleading although Parmlee, Smith and Katz (1993) found that cognitively impaired elderly patients' self reports of pain were as reliable as patients with no cognitive impairment. There are however some groups in which verbal reports are not available for example the unconscious, the young child (Howard 1993) or neonate, the very confused (Simons and Malabar 1995) or the patient with severe learning disabilities.

Lack of knowledge amongst nurses about pain assessment would suggest that continuing education would improve pain assessment. Camp and O'Sullivan (1991) however found no significant difference between control and subject groups following a continuing education programme relating to pain assessment although Faye et al. (1992) found that education did make a difference. Nash et al. (1993) suggest that unless nurses themselves perceive deficits in the knowledge, skills and/or resources that they possess, interventions aimed at improvement in these areas may have little impact.

1.8 Factors affecting nurses' assessment of pain

Researchers have explored a wide range of factors that may influence nurses' assessment of pain. These can be divided into patient and nurse characteristics.

1.8.1 Patient Characteristics

1.8.1(a) Socio-economic status

Davitz and Davitz (1981) using vignettes of patients and rating scales relating to pain and psychological distress have studied many influences that may affect nurses' assessment of patients' pain. The first set of studies looked at variations in the patients and their influence on the inferences made. Analysis of variance was used to identify significant differences in the factors studied including socio-economic status.

Differences relating to the patients' socio-economic status were significant at the 0.01 level, low status patients were generally expected to experience more pain than middle or high status patients. A more recent study by Calvillo and Flaskerud (1993) in common with previous studies found that nurses underestimated the pain of women undergoing cholecystectomy. The authors also found that nurses tended to regard white, middle class patients as experiencing more postoperative pain than less educated, ethnic minority patients. The authors suggest that "nurses assign a greater amount of pain and more credibility to the expression of pain to those patients with more social value" (Calvillo and Flaskerud 1993, pg.458). Choiniere, Melzack, Girard, Rondeau, and Paquin (1990) compared the accuracy of nurses' estimates of the pain of patients on a burn unit but found no influence of socio-economic status on the assessment.

1.8.1(b) Illness / Severity

In the study by Davitz and Davitz (1981) already mentioned, the use of vignettes highlighted a significant difference at the 0.001 level in relation to physical pain and discomfort. A further study by Davitz and Davitz (1981) was designed to explore nurses' beliefs about the degree of suffering typically associated with various illnesses.

The study involved nurses rating physical pain and psychological distress for a large number of illnesses. The correlation between psychological distress and pain ratings was 0.09 suggesting that nurses saw these as different. There were some conditions in which a high congruence between pain and psychological distress existed for example vignettes containing descriptions of trauma were seen as both highly painful and psychologically distressing. The most painful illnesses were seen as those involving cardiovascular disease (angina, pre-infarction angina, coronary thrombosis) or severe trauma (burns, broken neck, gunshot wounds in the chest). The illnesses associated with the highest degree of psychological distress were psychological disorders or those disorders involving the threat of death or long term, severe disability. The effect of the nature of the illness was also identified by Oberst (1978). Short, Burnett, Egbert and Parks (1990) found that the type of surgery that a patient had undergone was a significant factor in both the amount of medication elderly postoperative patients received as well as being a factor that the nurses themselves identified as important.

1.8.1(c) Evidence of Pathology

Taylor, Skelton and Butcher (1984) used one paragraph descriptions of patients to obtain 268 nurses' estimates of the intensity of the hypothetical patients' suffering, the priorities for specific pain relief actions, and ratings of the patient on a series of trait dimensions. The descriptors varied according to duration of pain, signs of physical pathology, signs of depression, and diagnostic category. The nurses attributed less intense pain when the subject had no sign of pathology, and when the duration was long term and chronic. More negative personality and behavioural traits were attributed to the patient when signs of pathology were negative. This result suggests a dichotomous, organic versus psychogenic model of pain on the part of health care staff. This finding was supported by a study by Halfens, Evers and Abu-saad (1990) who noted that nurses attributed less pain to the hypothetical patient when test results of physical pathology were negative than when test results were positive.

1.8.1(d) Gender

Several studies using vignettes have identified no differences in inferences of pain and psychological distress in relation to gender (Davitz and Pendleton 1969; Oberst 1978). Although these studies failed to identify differences in nurses' inferences of pain in relation to the patient's gender Bond (1981) found that nurses in a radiotherapy ward initiated more analgesic injections in women than in the men and refused more analgesic requests from the male patients. This suggests that there may be a difference in attitude to treatment. Oberst (1978) found gender had no effect although Cohen (1980), in contrast to the studies mentioned earlier, found differences between nurses' medication choices for patients of different sexes. Using two sets of identical vignettes, where the only difference was the sex of the patient, nurses selected less medication for the pain of female than of males patients.

While research into the influence of gender on nurses' assessment of pain has been inconclusive evidence of the relationship between differences in perceptions of pain and social characteristics, in particular gender, have been explored by Bendelow (1993). The study of 'lay' understanding of the perception of pain in a multi-racial inner-city area identified significant gender differences in the emphasis on the role of emotions and social expectations of the ability to cope in experiences and perceptions of pain. Although these gender related differences were identified in 'lay' individuals there is evidence that gender based perceptions of pain may influence the way health professionals interpretation of patients' experiences. Bendelow (1992) found that health professionals in a pain clinic unanimously believed that women were more likely to be suffering from pain with psychogenic origins.

Evidence of an influence of gender on pain assessment also comes from a study by Hadjistavropoulos, McMurtry and Craig (1996). They found that judgements made by thirteen female and nine male university students of videotaped patients experiencing back pain were influenced by both gender and physical attractiveness. Females were

viewed as experiencing greater pain intensity than males and although physical attractiveness had no influence on judgements of male patients female attractive patients were viewed as experiencing less pain and their pain as less unpleasant than the less attractive female patients.

1.8.1(e) Age

Davitz and Davitz (1981) also looked at the influence of the patient's age on nurses' inferences. The age of the patient was found to have little influence on the nurses' inferences of physical pain, however it was a factor in relation to psychological distress. Nurses rated children of 4-12 as less psychologically distressed than patients in other age groups. The lack of influence on inferences of pain of the patient's age was also found by Taylor et al. (1984). Van der Does (1989) in a study of nurses' and patients' assessment of pain following burn dressings found that there was a moderate but significant negative correlation between patient's age and the nurses' ratings of pain and tension before and after a burn dressing. The finding that age does influence psychological distress scores was also supported by Oberst (1978) who found however that the mean scores on a scale of suffering increased with age.

1.8.1(f) Ethnic variation

Davitz and Davitz (1981) used questionnaires with patient vignettes to study the effect of ethnic variation on inferences of pain. Three studies were carried out using mild, moderate and severe illnesses in the vignettes. The studies display consistent findings suggesting that ethnic background is an important determinant of nurses' inferences of suffering in relation to both pain and psychological distress. Nurses generally saw Jewish and Spanish patients as suffering most, and Oriental and Anglo Saxon / Germanic patients as suffering least pain and psychological distress.

The suggestion that patients' responses to pain and suffering are partially determined by their ethnic origins is supported by the work of Zborowski (1969). This work is often

cited in the literature as evidence of culturally determined pain responses. Zborowski discusses the differences in response to pain of Jewish, Italian, Irish and old American patients at a large veteran administration hospital in New York although as Zborowski points out the subjects consisted only of male patients of low-lower middle class origins. Zborowski interviewed patients from the four groups and was able to describe differences in the reactions to pain along ethnic lines. As well as differences in pain related behaviours and emotional response, Zborowski identified differences that may affect the “medical practitioners” assessment of pain. When assessing factors such as intensity, location and duration of pain “less precision can be expected from the Irish and Italian patients than from the Old American and Jewish, who, despite their striking differences in behaviour, tend to be more precise in describing their pain experiences” (Zborowski 1969, pg.240). The use of interviews and the interpretation of the comments has been criticised as being subjective and open to bias (Dodson 1985). Bates (1987) has also criticised the reductionist approach taken by Zborowski and the failure to control for the influence of other medical, psychological and socio-cultural variables on pain intensity.

Ethnic variation was also a factor identified by Calvillo and Flaskerud (1993) who studied nurses’ pain assessment of American ‘Anglo’ and Mexican patients. They found that nurses assigned more pain to white higher social class patients.

1.8.2 Nurse Characteristic

1.8.2(a) Length of Nursing Experience

Several studies have identified differences in nurses’ assessment depending on their experience of nursing. Choiniere et al. (1990) compared nurses’ estimates of pain experienced by patients suffering from burns during treatments and at rest. Pain was assessed using a visual analogue scale and a verbal scale following a painful procedure and later in the day. The nurses scores were found to correlate with those of the patients. The degree of under or overestimation was defined by comparing the nurses

visual analogue scale with that of the patient, if the nurse's score was within 1 of that of the patient it was seen as correct. The nurses correctly perceived the patients' pain only 30% of the time during procedures and 49% of the time the patient was at rest. 27% of the nurses' estimates for pain during procedures were overestimates while 43% underestimates. During rest 33% of the estimates were underestimates while 18% were overestimates. Nurses also overestimated the effectiveness of medication.

Choiniere et al. (1990) compared the accuracy of nurses' estimates with factors that may have influenced them such as number of years of nursing experience, their work status or their age. A significant interaction was found between years spent in nursing patients with burns and estimation of patients' pain. Incidence of overestimation of patients' pain was shown to be more frequent in nurses who were less experienced while underestimation was significantly more likely in those with more experience.

The influence that experience may have on nurses' assessment of pain has been highlighted by other studies. Perry and Heidrich (1982) studied how burn pain is assessed and managed during debridement using a questionnaire sent to 151 burn units in the United States. It was found that inexperienced nurses rated the pain as more severe, as did nurses who gave higher doses of analgesia before the procedure. Staff members who had spent less time working with burn patients believed debridement was more painful: those working over 5 years (N=57) gave a mean pain rating of 2.8 whereas those working less than 5 years (N=80) gave a rating of 3.14, a significant difference ($p<0.01$). Fagerhaugh (1974) also studied nurses in burn units and found that more experienced nurses would give less drugs and were less concerned at inflicting pain, because they knew the treatments were essential for recovery.

Iafrati (1986) also reports a study of burn nurses and patients. Comparison of nurses' and patients' scores showed that nurses correctly assessed the pain 31% of the time, overestimated it 34.5% of the time and underestimated the pain 34.5% of the time. The

author suggests that new graduates, new burn nurses and associate and bachelor graduates and nurses over 30 tend to overestimate, and veteran nurses especially veteran burn nurses, diploma graduates and nurses under 25 tend to underestimate it. These conclusions are however made without the necessary statistical analysis to support the conclusions.

Mason (1981) carried out a study in 5 hospitals in the St. Louis, Missouri, metropolitan area that replicated some of the work undertaken by Davitz and Pendleton (1969).

Mason does report that although the nurses did not vary in their inferences of patients' psychological distress in relation to the nurses' length of professional experience, nurses with less than one year of professional nursing experience and nurses with 6-10 years of experience differed in their inferences of pain at a significance level of $p < 0.05$. Nurses with the lesser amount of nursing experience inferred the greatest degree of pain.

Davitz and Davitz (1981, pg.52) suggested that, "one might argue that, over the course of a nurse's career, as a result of repeated experiences with patients who have experienced suffering, a nurse might become inured to the pain and psychological distress of her patients. On the other hand in the absence of systematic evidence, one might reasonably argue that nursing experience underscores the reality of patient suffering, and as a consequence, sensitises the nurse to patient suffering."

The effects of experience on nurses' inferences are therefore not clear from the current research. Davitz and Davitz (1981) report a small scale study in which interviews were carried out with staff to investigate the nurses' reactions to the suffering of patients at various stages in a nurses' career. Small group interviews were carried out which focused on a patient for whom they had experienced a lot of sympathy and another patient for whom they had felt less sympathy. A number of issues are drawn out of the interviews by the authors. The nurses described changes between the nursing school

and their practice which was often described in terms of a change from the idealism of the school to the reality of the practice, a shift from a universal sympathy to a more controlled and selective reality. Although most talked about becoming more practical, realistic and down to earth as a result of their professional experience, others reported an increased sensitivity and emotional understanding of the suffering of others. Davitz and Davitz (1981) suggest that these reactions were explained by increasing selectivity of nurses' reactions, nurses describing their current reactions in terms of a more selective sympathetic response in contrast to the universal empathy of their nursing school experience.

Nurses reacted differently towards different patient characteristics such as age, however there were certain expectations regarding patients who had a right to complain and those who were merely complainers. There was a crucial difference between those whom the nurses believed were suffering and those who were seen as overacting. These patients engendered feelings of anger and frustration amongst the nurses and led to the nurses reducing contact. Nurses also reported the very real difficulties involved in dealing with someone who was suffering and feeling overwhelmed by the emotions engendered. These led sometimes to difficulties being carried into their private life.

Not all studies have identified nurses' experience as an influence on their inferences of pain and suffering. Dudley and Holm (1984) used the Standard Measure of Inferences of Suffering questionnaire (SMIS) (Davitz and Davitz 1981) to investigate the relationship between nurses' assessments of pain and psychological distress and years in practice, age, and relative job satisfaction. The associations were weak and non significant as were the associations between assessment and educational preparation, clinical practice area and shift assignment. Oberst (1978) also found no significant relationship between years of experience and inferences of pain.

As well as the length of nursing experiences studies have also considered factors such as the current position of the respondent. Mason (1981) reports no statistically significant variance in mean scores in relation to the nurses' educational preparation, the activity status, the professional employment position and hospital in which the subject was employed. As well as length of experience Davitz and Davitz (1981) looked at current position, area of greatest nursing experience, reducing-augmenting reactions to stimuli, reactions to psychological distress, stoicism, and preference for interpersonal versus technical duties among other factors. The study involved 94 nurses working in two large metropolitan hospitals in the United States of America. The researchers used the SMIS questionnaire to calculate the nurses' mean pain rating, mean psychological distress rating and mean pain plus psychological distress rating. The study found that the rating of one's own pain and the tendency to augment stimulation (as measured by a scale developed by Vando 1969) were related to the nurses' inferences of patients' physical pain and the combined mean score of pain and psychological distress. No relationship was found between representation-sensitisation (sensitivity to one's own experiences of psychological distress measured on the scale developed by Byrne 1961), stoicism, years of experience, current position or area of greatest nursing experience and mean pain ratings. Inferences of psychological distress are related to the nurse's preference for interpersonally oriented nursing activities. The analysis also failed to identify any significant relationships between ratings and current position or areas of greatest interest.

1.8.2(b) Ethnic background

Davitz and Davitz (1981) while investigating many factors that may influence nurses' perceptions of pain found some significant differences in ratings associated with ethnic or national background of the nurses. In the lower quartile there was a clear predominance of nurses with north European backgrounds, while in the upper quartile there were three times as many subjects from other European and twice as many from

African backgrounds suggesting a tendency to higher ratings amongst other Europeans and Africans.

The influence of culture on nurses' inferences has been investigated in other studies. Davitz and Davitz (1981) studied 544 female registered nurses in the United States, Japan, Puerto Rico, Korea, Thailand, and Taiwan. The analysis of variance clearly and strongly supported the first hypothesis that degree of patient suffering inferred was related to the national background of the nurses, Korean and Japanese nurses inferring the most patient suffering. The authors suggest that the cultural differences support the notion that inferences of pain and psychological distress are socially learned. As an extension to the study Davitz and Davitz (1981) also studied nurses in Uganda, Nigeria, Nepal, England, Israel, Belgium, and India. They conclude that the results of the survey confirmed the assumption that attitudes are, in part, socially learned responses as nurses from one culture varied markedly in their inferences from those from a differing culture. Among the thirteen countries Korean nurses inferred the greatest psychological distress whereas Nepalese, Taiwanese, and Belgian nurses inferred the least. In relation to pain, Koreans inferred the greatest amount of physical pain while nurses from England inferred the least. The researchers report conversations with English nurses who report that one of the most difficult adjustments they had to make when working in the United States was the low tolerance to pain of American patients. The effects of cultural variations were also investigated by comparing the inferences of a sample of nurses from one metropolitan hospital in the United States half of whom were white and half black. The groups were sub-divided into assessing white patients or black patients. The researchers found no significant differences between the groups in terms of pain but the black nurses inferred a greater degree of psychological distress in patients than did white nurses, this did not vary with the colour of the patient.

Variations in the inferences made by nurses from different cultures does call into question the applicability of research into the factors influencing inferences of suffering between one culture and another.

1.8.2(c) Personal experience of pain

Davitz and Davitz (1981) have reported a link between nurses' own pain experiences and their inferences of pain in others. They argue that this finding suggests that nurses who experience greater pain themselves tend to infer greater pain in others. This it is argued supports the notion that one person cannot directly observe another persons' suffering and therefore "knowledge" of another person's suffering is always a matter of inference, and the inference depends upon one's own experiences and beliefs. Support for the finding that personal experience may influence nurses' inferences of pain was provided by Holm, Cohen, Dudas, Medema and Allen (1989) who, using the SMIS questionnaire (Davitz and Davitz 1981), found that the nurses' personal experiences of pain were the only variable that predicted significantly their perceptions of patients' pain and psychological distress. The authors suggest that although additional study is warranted, the findings suggest that nurses who have experienced intense pain are more sympathetic to the patient in pain.

The relationship between personal experience and inferences of pain was also investigated by Ketovuori (1987). 22 patients were studied following gynaecological laparotomy using the Finnish Pain Questionnaire. Surgical nurses (29 who had not undergone surgery in the past and 33 who had) also answered the same questionnaire. Nurses who had not experienced wound pain estimated the intensity of wound pain higher than the patients and the nurses who had experienced it, both groups of nurses estimated it incorrectly. These results contradict those of Davitz and Davitz (1981). The authors note that the quantity of postoperative medication was insufficient because the quality and intensity of pain were misunderstood and attitudes towards the administration of analgesics were counter therapeutic.

1.8.3 Education

Another factor that may influence the way nurses perceive the pain experienced by their patients is their professional education. Students during their professional education are exposed to theoretical sessions and as well as clinical settings where they will encounter patients who may be suffering pain. Interviews carried out by Davitz and Davitz (1981) suggested that students' reactions to patients' suffering may change as the students gained clinical experience. They suggest that it is not unreasonable to expect a change in beliefs about suffering which, when students enter nursing, will have been derived from some personal experiences but may also be based on cultural stereotypes shared by the population at large. In order to investigate this further the SMIS was administered to identify any change in students during their training. The study design used both longitudinal and cross sectional aspects and involved six schools and a total of 1,014 nurses. As well as the administration of the questionnaire, 20 students from each year level in each of the six schools were interviewed with regards to their academic and clinical experiences.

The results are a little confusing as both the cross sectional data (measurements in each year) and the longitudinal data (measurements at "spring" and "fall") are combined to produce measurements at six points. Using analysis of variance a significant difference ($p < 0.001$) was found between the pain ratings of the first year students as measured in the fall and all other groups. For psychological distress there was a significant difference ($p < 0.001$) between the first year students as measured in the fall and the other groups. The authors report that the results are the same if the cross sectional and longitudinal data are compared independently. The results show that the changes in ratings for both dimensions of suffering occurred during the first year, but the changes in ratings for pain and psychological distress occur in the opposite direction. Inferences of pain decreased between the fall and spring of the first year and then remain constant for the rest of the year. Inferences of psychological distress increased sharply between the fall and spring of the first year and continue to rise during the second year and then

remained the same. The authors suggest that the results “incontrovertibly demonstrate that inferences of suffering change significantly during the course of nurse education” (pg.125).

The changes in inferences appear to occur primarily in the first year of training with inferences of patients’ physical pain decreasing over the course of training, while inferences of psychological distress increased. The authors also looked at the differences between the schools and found that there were significant differences between the different schools. These differences did not seem to be related to the type of degree offered, the setting of the school (e.g. hospital, community college, four year college or university) location (urban, suburban) or characteristics of the curriculum (for example the amount of clinical experience). Davitz and Davitz (1981) suggest that the principal finding of this research is that nursing education does have a significant impact on students’ beliefs about patients’ suffering.

1.8.3(a) Becoming acculturated

A number of reasons for these changes are proposed and supported with quotations from student interviews. The first factor is a process of becoming ‘acculturated’ within the subculture of nursing. Davitz and Davitz (1981) suggest that the adoption of the belief system of nurses is a part of this process and results from day to day contact with members of the faculty, clinical supervisors, and graduate nurse students. They suggest that exposure to the beliefs that nurses held resulted in the students beginning to acquire some of these beliefs. Another factor was the repeated exposure of students to patients who were suffering and the expectations that the student would respond as a professional. During the interviews students described their initial fear and anxiety in relating to patients who were suffering and the gradual reduction in this emotional reaction. This reduction was interpreted as becoming more objective and more professional. A couple of students described this change in relation to pain.

“You learn to tolerate patient’s pain. You accept it as something that has to be. I don’t get as upset; I can observe pain more objectively. I used to worry about asking patients if they have pain; now I ask them questions and it doesn’t bother me. As for myself, I’m more tolerant of my own pain” (pg.128).

“You have to turn off the pain, otherwise you can’t work. You have to learn to be objective. Nurses must learn control” (pg.128).

Davitz and Davitz (1981) suggest that while nursing education has been successful at sensitising students to the psychological distress of patients, it may at the same time desensitise students to the patient’s pain. In effect they suggest that nurses are being “taught” that patients feel less pain than the students believed the patients did upon entering training. This process may in some way be inevitable as part of the process of what the students described as becoming “objective” or “professional.” This distancing may be necessary in order to function effectively in providing nursing care, however this may create difficulties in that too much distancing may affect the quality of patient care.

The results of this study are consistent with a similar study by Lenburg, Burnside and Davitz (1970b). This cross-sectional study also identified a change in the ratings on a forty item questionnaire of 108 first year students and 150 second year students. First year students inferred higher levels of pain than the second year students ($p < 0.05$) and lower levels of psychological distress ($p < 0.05$). Three factors are identified as being important in this change, the first is the nursing curriculum with aspects such as sociology, psychology and history intended to extend the students’ understanding of self and others. A second factor is what is described as the emphasis on the potential sociological consequences regarding work, family responsibilities, future goals, and so forth. A third factor in the educational process of nursing students which may contribute to changes in their inferences is the clinical experience with patients.

Lenburg et al. (1970b) suggests that, over a period of time, repeated occupational involvement in pain-weighted situations may serve to alter the nature of inferences. That is students may learn to “inattend” to what has become familiar and routine.

Support for the notion that during a nurse’s educational preparation changes may occur in their attitudes to caring comes from work by Smith (1992). Smith describes the experiences of students during their training and notes that students believe they changed during their training. Smith suggests that they come into nursing fresh and enthusiastic, but by the end of the three years they become cynical and disillusioned. Smith describes a student’s experiences of caring for a patient in pain during her first ward allocation. “She thought that the patient was not being given adequate analgesia to control the pain I asked her if she could not have used the lunch time report to make her observations and recommendations known to the trained staff. She was doubtful, feeling that her junior status prevented the trained staff from taking her seriously, but also from seeing the person behind the pain, as she (a new entrant to nursing) still could. Another explanation for their reactions was that, drawing on the third-year accounts, they had got into a rut of always doing things the same way and feeling rushed and stressed to do the real work which prevented them from stepping back and asking why ?” (Smith 1992, pg.113).

1.8.3(b) Desensitisation

Greenwood (1993) has suggested that the structures and processes of nurse education in the United Kingdom led to an apparent desensitisation of student nurses to human need. The suggestion is that the professional socialisation into nursing may result in students becoming desensitised to human need. Greenwood (1993) suggests that this is due to two processes, the compartmentalisation of concepts for theory and concepts for practice and continued exposure to poor nursing practice resulting in some students becoming habituated.

If the finding that nurse education seems to somehow desensitise nurses to the pain experience of their patients is confirmed then this has important implications for nurse education. If during training nurses come to tolerate pain levels in patients that previously they would not have done this has implications for the quality of care given to patients who are in pain.

Support for this finding comes from comparisons of nurses and other occupational groups. Lenburg, Glass and Davitz (1970a) reports a study in which the inferences of pain and suffering of nuns, teachers, physicians and nurses were compared. The authors suggest that the nuns due to their theological and philosophical orientation to life may be more sensitive to suffering. The teachers may also have heightened awareness due to their trained sensitivity to feelings and reactions of children and their parents. Lenburg however suggests that as nurses and doctors are trained to respond more objectively to illness and the pain and distress that accompany this “on the basis of these factors one might expect nurses to demonstrate greater sensitivity to pain and distress situations” (pg.393). Lenburg also suggests that the repeated exposure of nurses and physicians to suffering may actually reduce their sensitivity and lead to decreased inferences of physical or emotional suffering. The study used a questionnaire consisting of 36 vignettes and two rating scales for each. The mean ratings for each of the groups showed that for both pain and psychological distress the groups respond in the same order with the nuns inferring the greatest pain and psychological distress followed by the teachers, the nurses and the physicians. Analysis of variance indicated that occupational groups differed significantly from each other in degree of pain ($p < 0.01$) and psychological distress ($p < 0.05$). The authors suggest that a possible explanation of the results is that the nurses and doctors undergo technical education which specifically prepares them to deal with physical and psychological suffering. In addition to this “in the course of their daily work they repeatedly encounter suffering and are called upon to apply their skills in relieving it. Suffering becomes an ordinary or commonplace problem to solve. It becomes another

expected behaviour of those being served, much as noise and physical activity are behaviours which teachers expect of their pupils” (Lenburg et al. 1970b, pg.396). It is suggested that specific knowledge and accustomed psychological response of physicians and nurses tend to reduce their overall reaction to suffering and therefore decrease their level of inference of both physical pain and emotional distress.

1.8.3(c) Cognitive dissonance

If nurses become desensitised to an extent that their expectations of pain are different to those of the patient this may have serious consequences in relation to the care given. Graffam (1981) reports that students during a graduate elective course had been concerned at the limited response to patients who reported pain. Nurses who were aware of the patient’s dissatisfaction used rationalisation to justify their reaction or denied that the patient’s pain was as severe as reported. Graffam (1981) uses the concept of cognitive dissonance (Festinger 1957) to explain this. A difference in the expectations of the nurses and patients in relation to the control of pain may cause stress due to the difference between internal beliefs and external events. To reduce this stress rationalisation, rejection and withdrawal are used. Wiener (1975) found that the nurses’ difficulties in dealing with intractable pain on an orthopaedic ward led to patients being labelled as difficult, or demanding and being seen as clock watchers, crocks, malingerers and manipulators.

Not all studies have noted the same pattern of a decrease in sensitivity during the educational process. Halfens et al. (1990) reports a study that replicated aspects of an earlier study by Taylor et al. (1984). Three groups of subjects from three university hospitals in different areas of the Netherlands were sent a questionnaire asking about a hypothetical patient. The three groups were 44 students in their first year, 40 students in their last two years and 49 registered nurses. The results showed that the level of pain assessment is influenced by nurses’ level of education with student nurses in their first year ascribing less pain to the hypothetical patient than student nurses in their last

two years of education, registered nurses came somewhere in the middle. This contradicts the findings reported by Lenburg et al. (1970b) and Davitz and Davitz (1981) that the sensitivity of nurses to pain decreases during their educational programme.

Other studies have looked at the relationship between qualifications, type of educational preparation and nurses inferences. Neither Dudley and Holm (1984) or Oberst (1978) have found any relationship with type of educational preparation. Available research has also found no relationship between inferences and area of specialisation (Oberst 1978) clinical practice area and staff assignment (Dudley and Holm 1984) or relative job satisfaction (Dudley and Holm 1984).

These studies are difficult to interpret for a number of reasons. Some of the studies were carried out in countries other than the United Kingdom and therefore because of the effect of cultural differences and differences in educational preparation make direct application of these findings to the United Kingdom difficult. Several of the studies described use a cross-sectional design in which differences in pain inferences between the groups could be masked or created by differences between the groups in factors such as previous or personal experience, ethnic back ground or age. Many of the studies fail to report this information.

1.9 Summary

This review has highlighted the research suggesting that the standard of postoperative pain relief is inadequate. The importance of relieving pain and the difficulties that have contributed to the inadequate relief have been discussed highlighting the numerous factors that are important in this process. One of the most important seems to be inadequate assessment. Pain assessment is a core element in the successful treatment of pain however there is evidence that nurses are poor at estimating patients' pain.

The research that has explored factors influencing nurses' pain assessment has been reviewed. The type of illness, evidence of pathology, socio-economic status, age, gender and ethnic background are all factors that have been highlighted as potentially influencing the assessment of patients' pain. There are also a number of characteristics of the nurses themselves that may influence the assessment of pain. These include length of experience, ethnic background, personal experience of pain, and education. The report of the Royal college of Surgeons and College of Anaesthetists (1990) suggests that improved education is an important element in improving pain control. Studies in the United States have however identified a decrease in students' inferences of pain, suggesting that the effect of education may be to decrease students' sensitivity to pain.

In view of the concerns expressed about the applicability of such findings in the United Kingdom and the methodological criticisms, the effect of education on inferences of suffering needs to be explored further. To explore these issues three studies were designed. The aim of the first study was to describe the effect of nurse education on students' inferences of suffering. A longitudinal design was adopted to overcome the methodological problems of previous studies and to provide information about the effect of nurse education on inferences of pain and psychological distress in the United Kingdom. The characteristics of the patient or cases, and those of the students, that may influence the students' inferences of pain and psychological distress were also examined.

The relationship of inferences of pain and psychological distress to surgical nurses' assessment of pain was explored in the second study. This study explored the relationship between inferences of pain and psychological distress and pain assessment in a clinical setting which is important in interpreting the significance of any changes in inferences identified during nurse education. This study thus acts as a measure of the criterion related validity of the SMIS questionnaire as well as exploring the effect of the

characteristics of the cases in the SMIS and the characteristics of the nurses on inferences of pain and psychological distress.

A third study explored students' experiences of caring for patients in pain. The aim of this study was to explore the students' experiences of caring for patients in pain and through this identify factors that may influence the students' inferences of pain. Students' experiences could then be related to the explanations that have been proposed in the literature for any changes in inferences that were identified.

Chapter 2 Study One

2.1 Introduction

This chapter describes the aims, method and the results of study one. The aims of study one were to :-

1. Adapt the SMIS questionnaire (Davitz and Davitz 1981) for use in the United Kingdom and to include vignettes representing postoperative pain.
2. Describe the changes in nurses' inferences of suffering following the common foundation course of a diploma level and a degree level project 2000 pre-registration course.

2.2 Design

This study is a longitudinal descriptive study that describes the situation that exists rather than attempting to bring about change. Elements of the study attempt to replicate findings from previous studies by Davitz and Davitz (1981). The responses of diploma and undergraduate students to an adapted SMIS questionnaire were measured at the beginning of the common foundation course (CFP) and compared to their responses at the end of their CFP some eighteen months latter.

2.2.1 Development of questionnaire

Data were collected by means of a questionnaire comprising an adapted version of the SMIS questionnaire (Davitz and Davitz 1981) with additional questions asking for personal details of the respondent.

Davitz and Davitz (1981) have reported a number of studies concerned with nurses' beliefs about suffering in relation to patient characteristics in which the authors used the same basic technique. These studies presented brief vignettes describing patients and asked the respondent to rate the degree of pain and the degree of psychological distress that a patient would be likely to experience. This approach was used to

examine the effect of a number of characteristics by varying these characteristics in the vignettes presented, while holding other factors constant. The effects of patient characteristics such as sex, age and the nature of illness were studied in this fashion.

A number of these studies have used the SMIS questionnaire which was developed by Davitz and Davitz (1981) in the United States of America. The questionnaire consists of five categories of illness/injury which are cardiovascular, cancer, infection, trauma and psychiatric illness. Within each of these categories two levels of severity, mild and moderate, were used. 'Severe' levels of these cases were not used due to "the relatively restricted range of ratings elicited by items involving more severe illness and injury" (Davitz and Davitz 1981, pg.50). Both male and female patients are described and three age levels are used: 4-12, 30-45 and over 65. A counterbalanced design is used so that each illness / injury category is paired with each degree of severity, sex and age level. Thus the five illness / injury categories (each at two levels of severity), two sexes, and three age levels give a total of sixty items.

Each item consists of a brief vignette describing a patient's illness or injury, sex and age. The respondent is then asked to make two ratings for each item, the degree of psychological distress and the degree of physical pain. These ratings were made on two 7 point scales. A mean score for each of the measures, pain and psychological distress is calculated and differences analysed using parametric tests. Although some statistical texts argue that ordinal level scales should be analysed using non-parametric tests, Polit and Hungler (1991) suggest that the majority of writers believe that the distortion caused by treating such scales as interval is too small to warrant abandonment of powerful statistical analysis. Anderson (1961) suggests that the assumption that scales must be interval to use parametric statistics is wrong and that t-tests can be used to identify real differences in the means of two groups.

2.2.1(a) Reliability

Davitz and Davitz (1981) report the internal consistency of this instrument which was evaluated on the basis of the data from 90 nurses. The authors report that the average ratings of physical pain for even numbered items was compared to parallel ratings for odd numbered items. Using the Spearman-Brown correction, the correlation obtained was 0.96 for psychological distress ratings and 0.96 for pain. Davitz and Davitz (1981) suggest that this shows that the instrument has “a very high degree of internal consistency” (pg.51).

Davitz and Davitz (1981) also report the test-re-test reliability of the questionnaire. The questionnaire was administered to 50 nurses on two occasions one week apart. The test-re-test correlation was 0.89 for ratings of physical pain and 0.87 for psychological distress. Davitz and Davitz (1981) therefore suggests that this instrument was not only internally consistent, but also displayed a high degree of stability over time.

2.2.1(b) Validity

Many studies have used written descriptions of patients to elicit pain estimates from staff (Baer, Davitz and lieb 1970; Lenburg, Glass and Davitz 1970a; Cohen 1980; Dudley and Holm 1984). The SMIS questionnaire or similar instruments have been used in a number of published studies (Baer et al. 1970; Baer, Davitz and Lieb 1970; Lenburg, Burnside and Davitz 1970b; Mason 1981). The use of the questionnaire in different studies supports its face validity.

This type of questionnaire can however be criticised on a number of levels in terms of its validity. Firstly the questionnaire requires the respondent to rate the pain and psychological distress the patient is likely to be feeling, on the basis of the vignette, on a seven point scale. As discussed in the literature review the nature of pain is more complicated than can be represented on the basis of a uni-dimensional rating scale

(Chapman, Casey and Dubner 1985). This type of scale may not adequately reflect the affective component of the pain experience.

The vignettes themselves contain very limited information. Harrison (1991) suggests that the use of vignettes is somewhat artificial as in the clinical situation staff would select which cues they attend to while the vignettes make this decision for them. In practice staff interact with the patients thus giving them the opportunity to ask further questions. Subtle cues from the patient's voice, facial expressions, body tone and posture are all available. These factors have been shown to be important in how pain and distress are assessed (Baeyer, Johnson and McMillan 1984). Kahn and Steeves (1986) have also criticised the construction of suffering as a degree of pain or psychological distress suggesting that this is simplistic. They suggest that further conceptualisation of suffering must take into account that it is a response distinct from the response of pain or psychological distress, although these are related.

Although the limitations of ratings given on the basis of limited information need to be acknowledged the power of this approach as Harrison (1991) points out is the possibility of controlling the information presented which is difficult to achieve in normal clinical settings. It is also possibly the only method that can highlight changes in inferences over a period of time.

The issue of construct validity relates to the question of what this questionnaire is really measuring. The assumption underlying this questionnaire is that suffering is a phenomenon which cannot be experienced by anyone else than the person experiencing it and therefore nurses and others have to make inferences about the pain and psychological distress that exists. Inferences will be based on a number of cues which may include verbal reports by the patient, behavioural and physiological measurements and other information. Davitz and Davitz (1981) argues that this is part of a process that requires interpretation of the cues in terms of the experience of

suffering and formation of a judgement of the other person's suffering. The interpretation of cues will depend on the nurse's beliefs about the experience of suffering associated with various cues. Davitz and Davitz (1981) refers to these beliefs as the belief matrix. "The substantive nature of a belief matrix is defined by assumed relationships between specific observable cues and the degree of physical pain or discomfort and psychological distress a patient is experiencing" (Davitz and Davitz 1981, pg.12). These beliefs are learned and therefore the substantive nature of a nurse's belief matrix is related to characteristics of the nurse likely to be associated with differences in patterns of social learning. Davitz suggests that in addition to their substantive nature, belief matrices may be distinguished from one another on the basis of the general level of inferred physical pain or discomfort and psychological distress. This level of inferred physical pain or discomfort and psychological distress may be related to :

- a) Constitutional factors (e.g. nurse's pain threshold)
- b) Life experience (e.g. nurse's own experience of pain)
- c) Social learning variables (e.g. nurse's ethnic background)
- d) Personality variables (e.g. nurse's tendency to repress or attend to own psychological problems)
- e) Professional experience variables (e.g. nurse's area of specialisation.)

Davitz and Davitz (1981) also suggested that nurses' beliefs about suffering are related to their nursing behaviours and that the beliefs about suffering expressed by nursing students are likely to change over the course of their professional education.

One approach to the evaluation of construct validity is that of known groups technique (Polit and Hungler 1991). If the above proposals are correct then groups from differing cultural backgrounds would be predicted to have different levels of inferred physical pain or discomfort and psychological distress. In a variety of studies Davitz and Davitz (1981) found that the degree of suffering inferred was related to

the nationality of the nurse and they have also found differences in inferences through nurses' education. These findings support the suggestion that the SMIS questionnaire does have a degree of construct validity.

Validity is not an absolute and although it can be argued that the validity of the SMIS questionnaire can be supported in the research carried out by Davitz and Davitz (1981) this is not adequate to support its use in this research. Although the focus of this research is to look at the effect of nursing education on nurses' inferences, a similar aim to Davitz and Davitz (1981), the different cultural basis of the sample needs to be considered. The questionnaire contains some culturally specific terms for example "sidewalk" and "physician" which may have caused confusion if used in the United Kingdom.

The questionnaire also contained no vignettes which included patients following any surgical procedure. The questionnaire was therefore adapted to account for these difficulties.

2.2.1(c) Adaptation of the questionnaire

Three main adaptations were made to the questionnaire. In order to include post surgical cases into the questionnaire it was necessary to replace one of the five case categories with postoperative cases. As the sample that was to be used in the clinical areas in study two was least likely to have had a lot of experience of psychiatric cases these cases were replaced. A list of different surgical cases was distributed to lecturers and researchers in an academic nursing department to assess which cases were mild, moderate or severe (Appendix 1). All cases were male and in the adult age band to ensure any variation in inferences was due to the perceived severity of the illness/trauma. The mean pain scores and psychological distress scores are shown in Table 1.

Table 1 Mean pain and psychological distress scores of surgical cases

Question n=20 missing =0	Mean pain score	Standard deviation	Psychological distress score	Standard deviation
1	4.0500	0.7592	3.2000	1.0563
2	4.2500	0.9105	2.6500	0.8751
3	3.0000	0.7947	2.2000	1.1517
4	3.7500	1.2085	2.7000	1.1743
5	5.2000	1.1050	4.8500	1.1367
6	4.7500	0.9105	3.9500	1.2344
7	3.5000	1.0000	2.1500	1.3089
8	3.8500	1.4609	2.0000	0.9733
9	4.4000	1.1425	5.0000	1.0260
10	4.5500	0.9987	3.7000	1.2607

From these results question three was selected as the mild case due to the low pain and psychological distress score allocated to it. Question six was selected as the moderate case as the pain score allocated to question five was felt to be too high considering the findings of Davitz and Davitz (1981) in relation to severe cases. These cases were inserted into the SMIS questionnaire in place of the psychiatric cases. The place in the questionnaire and the sex and age of the case it replaced were retained.

Comments from respondents to the surgical questions also highlighted some confusion over the headings on the seven point scale. Some of the respondents felt that there was a contradiction between some of the terms. In particular the term “Little” was felt to represent something different from the other terms. In order to reduce this confusion the terms little and mild and great and severe were removed. Culture specific terms were altered to reflect the common expressions used by the potential respondents to the questionnaire. For example ‘sidewalk’ was replaced by pavement.

2.2.1(d) Personal details

As well as the questions making up the SMIS a number of other questions related to demographic information such as age were included. The students were asked to include their names to enable matching of the questionnaires on the first and second administration. The student's sex was obtained from school records and as age (Mason 1981), sex (Mason 1981), nursing experience (Mason 1981), experience of an illness (Davitz and Davitz 1981) and nationality /culture (Davitz and Pendleton 1969; Davitz, Davitz and Higuchi 1977; Calvillo and Flaskerud 1993) have all been suggested as factors that may possibly affect the students inferences, this information was also asked for. Students were also asked about their intended branch to identify any differences between these groups.

Questions relating to the standard of pain relief, the aim of pain relief and the risk of addiction were included in the questionnaire to allow identification of any change in the students' attitudes to these factors during the common foundation course. A copy of the complete questionnaire is in Appendix 2.

In addition to the questions asked in the first administration of the questionnaire in the second administration students were asked if they had nursed patients who were experiencing pain in order to identify the effects of direct contact with patients in pain.

2.2.2 Ethical approval

The project was submitted to the research committee of the college of nursing which was set up to ensure that the students of the college were protected from inappropriate or excessive demands from researchers. The intended methods including those relating to study three were described to the committee and a copy of the questionnaire was supplied. Permission to proceed with the project was received from the college (see Appendix 3).

2.2.3 Pilot

The questionnaire was piloted in one branch of the college of nursing in which the main study was to be carried out. The questionnaire was administered to a total of 48 students from the September 1992 intake of students two weeks after the beginning of the course and was re-administered two weeks later. Administration took place during tutorial sessions arranged through the tutors in the college. A brief description of the study was given and students were given the opportunity to opt out of completing the questionnaire. The questionnaires were distributed and the researcher remained with the students while they completed the questionnaires. Once completed the questionnaires were collected and analysed using the Minitab statistical program on an Apple Macintosh computer.

2.2.3 (a) Results of the pilot study

The method chosen for administering the questionnaire proved successful as no major difficulties were encountered. The results obtained are shown in Table 2.

Table 2 Results of the pilot study

n=48 missing =0	Mean pain score	Standard deviation	Mean Psychological distress score	Standard deviation
1st administration	3.7909	0.6465	4.0279	0.8027
2nd administration	3.5521	0.6707	3.9239	0.7399

Correlation of the pain scores on the first and second administration gives a Pearson product moment correlation coefficient of 0.740. This is lower than the test-re-test correlation reported by Davitz and Davitz (1981) of 0.89 although this was following a re-test after one week rather than the two week period used in this case. The correlation of 0.761 for psychological distress was again lower than that achieved by Davitz and Davitz (1981) but again this was after one rather than two weeks. Polit

and Hungler (1991) suggest that for most cases reliability coefficients above 0.70 are considered satisfactory.

Altering the psychiatric cases to surgical cases did not alter the internal consistency of the questionnaire. Split half reliability was found to be 0.933 for pain scores and 0.946 for psychological distress. Using the Spearman-Brown prophecy formula this gives a split half reliability of 0.965 for pain scores and 0.963 for psychological distress scores. This compares well with the correlation of 0.96 for both pain and psychological distress scores found by Davitz and Davitz (1981). Regression equations for both pain and psychological distress suggest that the surgical cases do not influence the variation of the overall mean scores significantly more or less than the other four types of cases:

Mean pain scores = $0.0205 + 0.192$ (cardiovascular cases) + 0.220 (trauma cases) + 0.195 (surgical cases) + 0.201 (cancer cases) + 0.184 (infection cases).

Psychological distress scores = $- 0.0362 + 0.198$ (cardiovascular cases) + 0.207 (trauma cases) + 0.210 (surgical cases) + 0.205 (cancer cases) + 0.186 (infection cases).

The questionnaire took most students 20-25 minutes to complete. Treece and Treece (1982) suggest that questionnaires should not take more than 20-25 minutes to complete. Long questionnaires may result in respondents being either reluctant to complete the questionnaire or becoming fatigued, resulting in inaccurate answers.

2.2.4 Subjects

The amended questionnaire was administered during tutorial sessions to students entering training at a large nursing college in the Midlands. The estimated intake for the March 1993 intake was 150 adult branch students, 20 child students, 35 mental health students and 15 learning disabilities students, giving a total intake of 220 students. Estimates of the required sample size were based on the results obtained for diploma students by Lenburg, Burnside and Davitz (1970b). These showed a mean pain score of 3.97 in the first year and a mean pain score of 3.82 in the second year. This gave a difference of 0.15. Assuming a standard deviation of 0.61 (Lenburg et al. 1970b), a significance of 5%, and a power of 80%, this gave a sample requirement of 251 (Polit and Hungler 1991). The sample from the college and undergraduate students was estimated to be 240 which would give a chance of a type II error of approximately 20% which was felt to be appropriate.

Originally it had been intended to include only those students intending to follow the adult branch. This proved to be logistically impossible as the tutorial groups included students from a variety of branches and would have reduced the power of the research. It was therefore decided to include students intending to follow all branches which would allow comparisons of inferences of students intending to follow different branches and provide a more appropriate sample size.

2.2.5 Procedure

At the time of the study the college consists of 4 sites. Following approval by the college's ethical committee each of the head of centres was approached to ask for permission to contact the students' tutors. The head of one college declined permission due to existing research being carried out at the centre. It was felt that another study would be an unfair burden on the students. This had the effect of reducing the potential sample to 192. Although this reduced the power of the study it was not possible at this stage to increase the sample size.

The tutors responsible for each of the tutorial groups that made up the March 1993 intake of students were contacted. Arrangements were made to administer the questionnaire during tutorials. At the commencement of each tutorial session students were given a verbal explanation of the purpose of the research. The researcher described the aims of the study as to understand the views of students towards pain. The students were given permission to decline to participate in the study if they so wished. On reflection this may have been an inappropriate strategy as it would have been difficult for students to take the option of withdrawing from the session in the researcher's presence. This was especially true as the researcher was often introduced as a former tutor which may have affected the ability of the students to opt out of participating.

A question was included in the questionnaire for the second administration to ask if the student was willing to participate in an interview. The purpose of the interviews, the method of recording and who would conduct the interview were all explained verbally to each group.

Questionnaires were collected at the end of tutorial sessions and the information obtained was entered onto an Apple Macintosh computer. Towards the end of the student's first year the tutors were re-contacted and tutorial sessions in which the questionnaire could be re-administered were arranged. These were arranged as close to the end of the common foundation course as possible but due to annual leave and placements the sessions occurred approximately 4-8 weeks before the end of the common foundation course.

Analysis was performed using the Minitab statistical package (version 8.2) and the statistical package for the social scientist (SPSS version 6.1) on an Apple Macintosh

computer. Tests used included paired and unpaired Student's t-tests (t), one way and two way analysis of variance (F), and chi square (χ^2) for category data.

2.3 The Results of Study One

The results in this section reflect the study of the student nurses' inferences of pain and psychological distress over the common foundation programme. This aspect of the study was designed to test the null hypothesis that there would be no change in students' inferences of pain or psychological distress over the period from entering the course (time 1) to the completion of the common foundation course (time 2). This section also describes the effect of a number of characteristics of the students themselves or of the cases in the questionnaire on the students' inferences of pain and psychological distress, the null hypothesis being that these factors would not influence students' inferences of pain or psychological distress.

2.3.1 Sample and missing values

221 students were admitted to the cohort studied in this research. Two students were absent from the session in which the questionnaire was first administered (both from site 1) while two declined to take part in the study (both from site 3) giving a total of 217 questionnaires which were completed by students in the first sample (see Table 3). Of these 174 (80.2%) students were included in the second administration. No students declined to take part in the second administration of the questionnaire. Students who were absent from the sessions in which the questionnaires were administered on the second occasion were traced via the school of nursing and were sent a questionnaire via the post. The return rates are shown in Tables 3 and 4.

Table 3 Questionnaire return following the first administration

	Number	Percentage
Completed questionnaires	217	98.2%
Declined to take part	2	0.9%
Absent	2	0.9%
Total	221	100%

Table 4 Questionnaire return following the second administration

	Number	Percentage
Returned	174	80.2%
Returned after reminder	4	1.8%
Non returns	25	11.5%
Left course	14	6.5%
Total	217	100%

2.3.2 Inferences of pain and psychological distress

A mean score for pain and psychological distress was calculated for each subject by combining the scores for all sixty scenarios. The values for the mean pain and psychological distress scores are displayed as histograms in Figures 4-7. These demonstrate that the scores were normally distributed and therefore parametric statistical tests are appropriate. In the case of subjects not rating any of the cases, their mean score was not calculated and they were recorded as a missing subject. This resulted in some variation in the sample size for the inferences of pain and psychological distress and when studying the differences in case and student characteristics.

Figure 4 Mean Inferences of pain at the beginning of the CFP
(n=193)

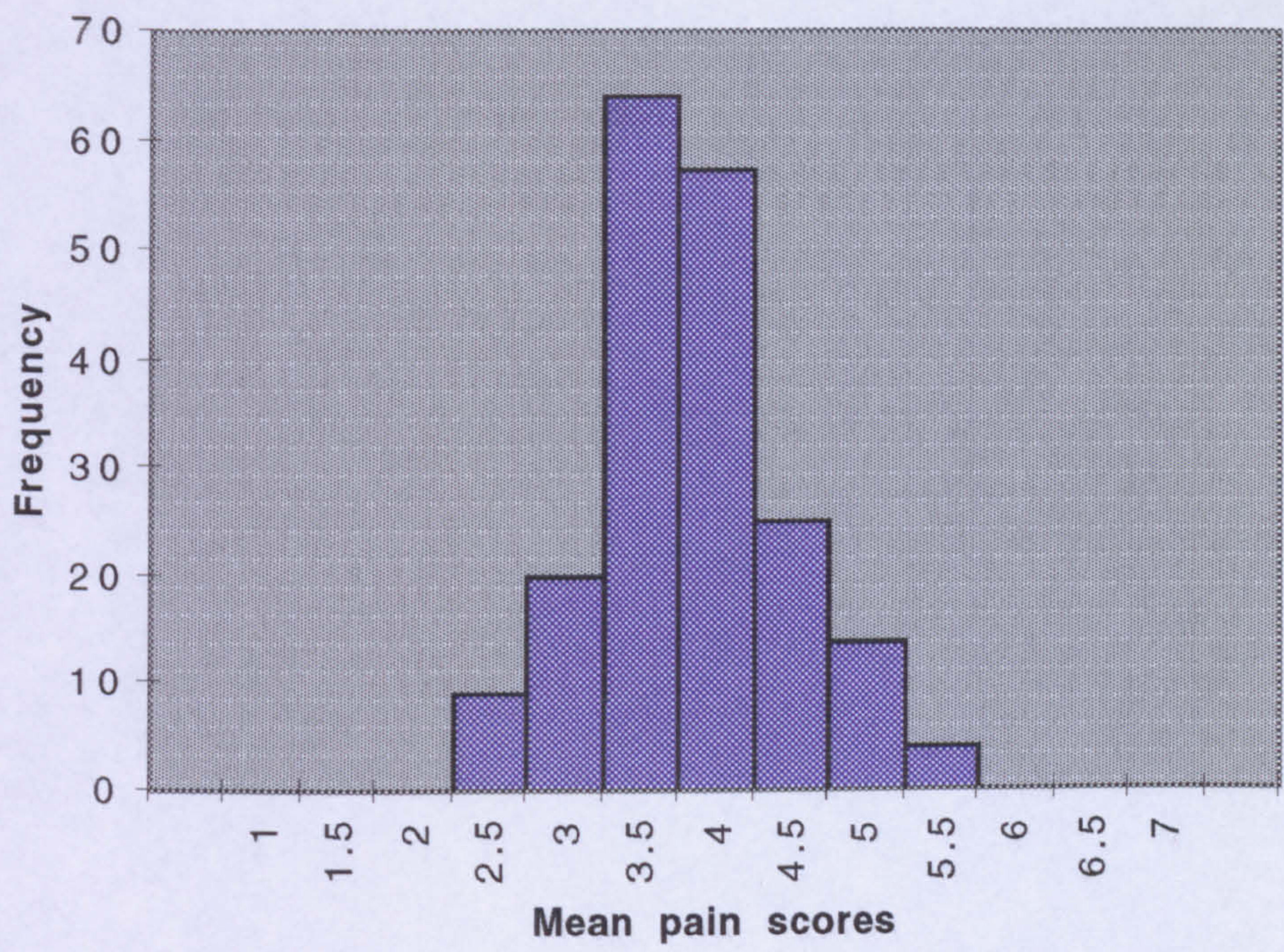


Figure 5 Mean inferences of psychological distress at the beginning of the CFP
(n=197)

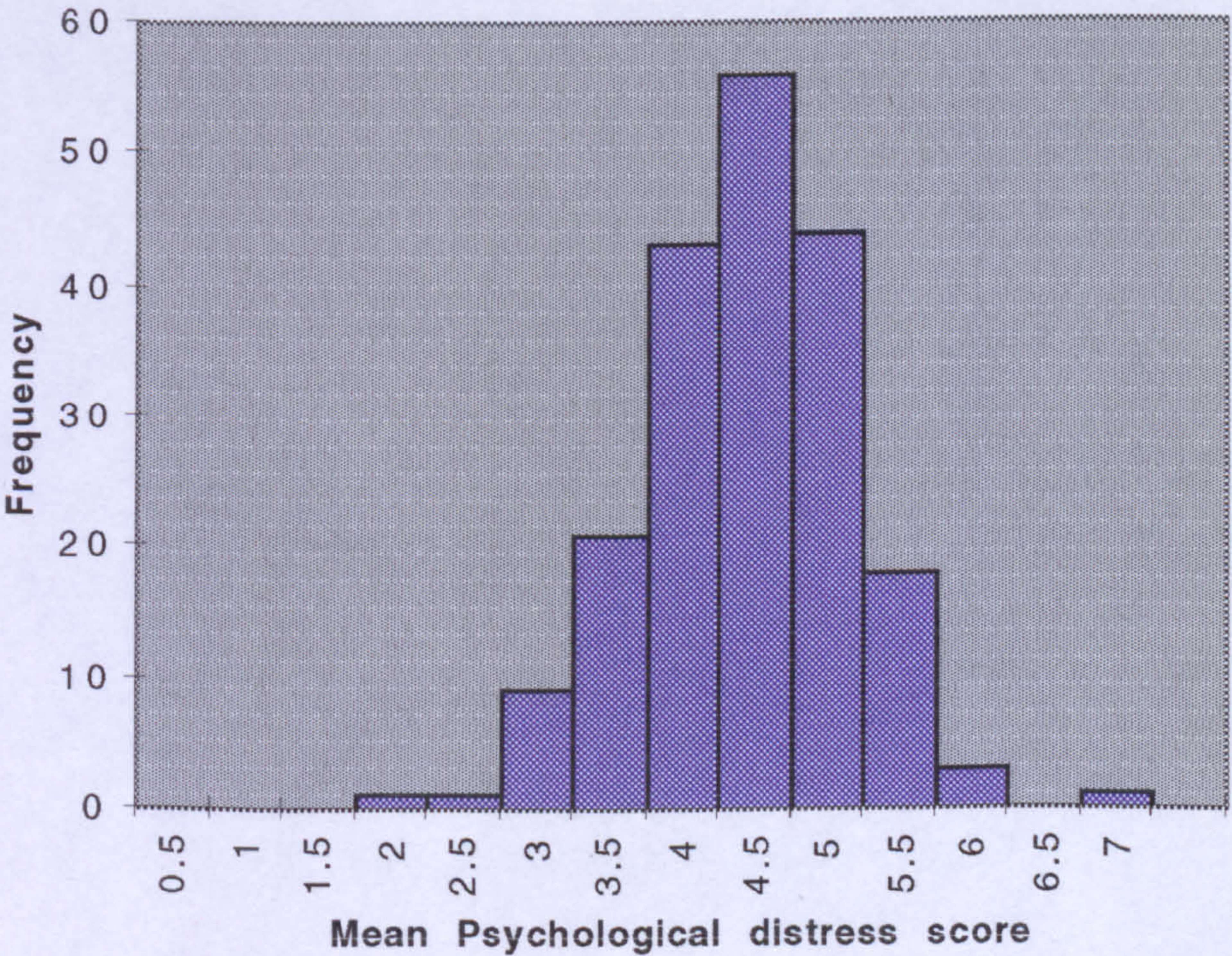


Figure 6 Mean Inferences of pain at the end of the CFP (n=177)

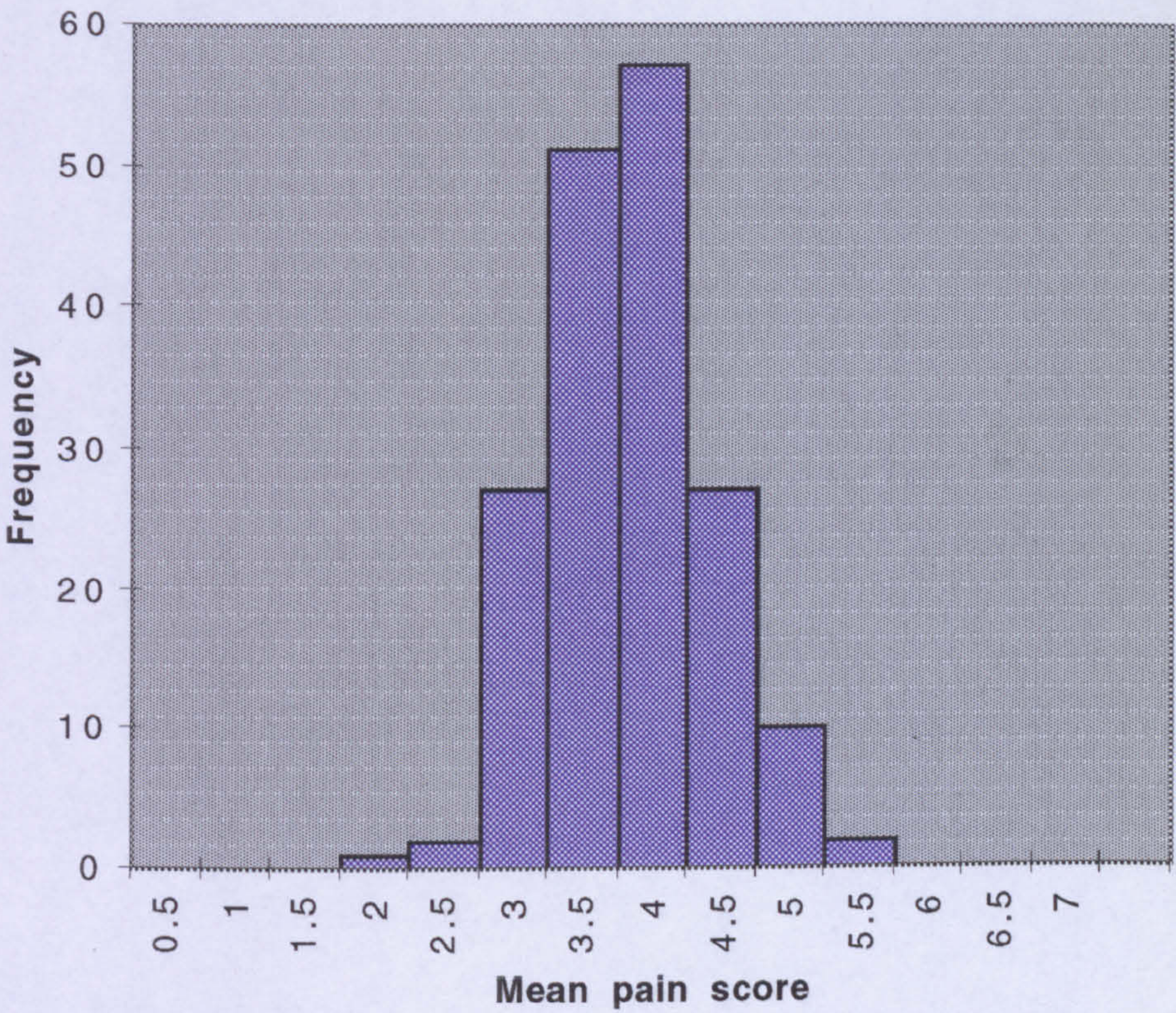
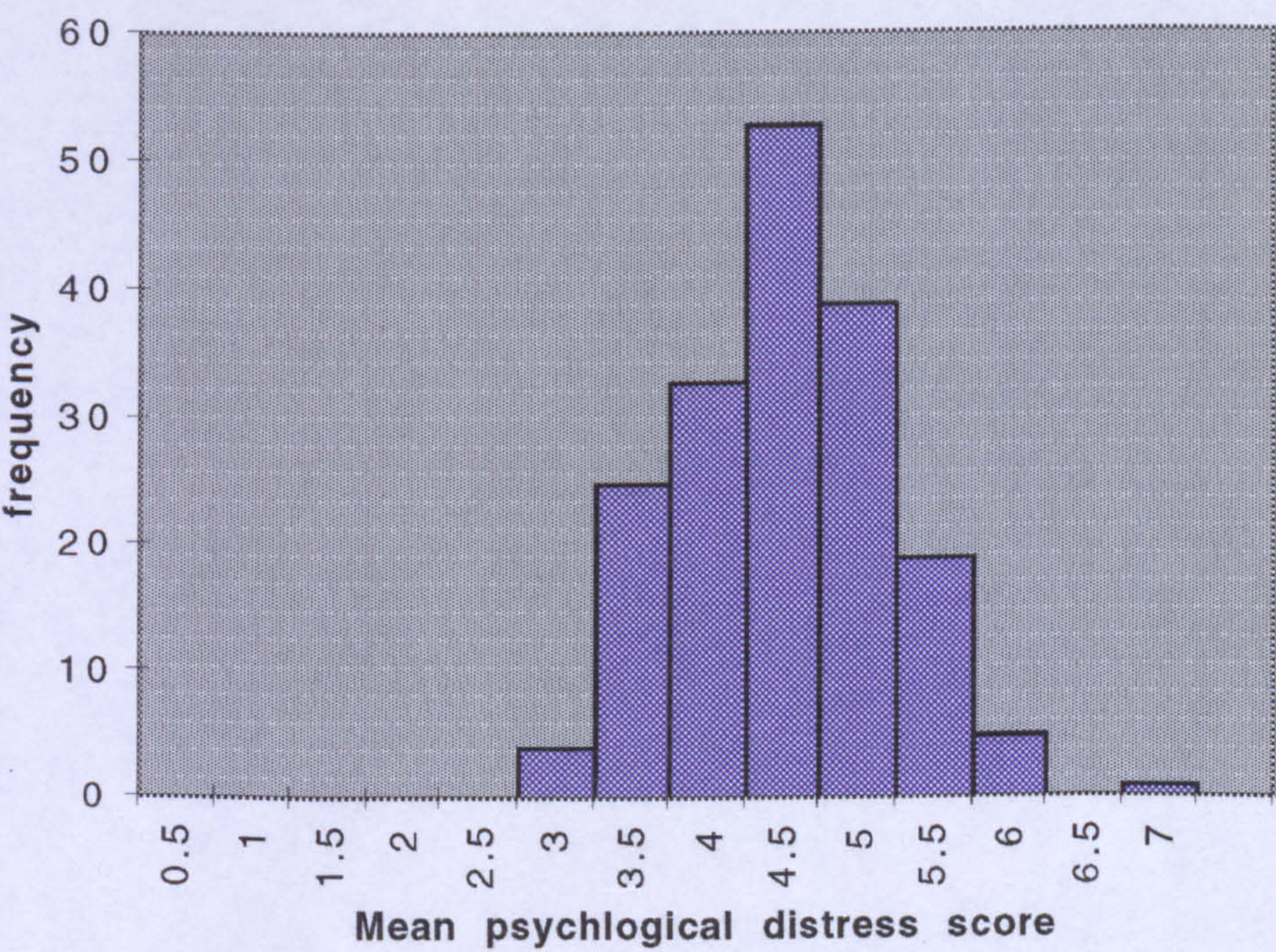


Figure 7 Mean inference of psychological distress at the end of the CFP (n=179)



The mean pain score and the mean psychological distress scores were positively correlated (Pearson’s $r = 0.547$, $df=189$, $p< 0.001$) which is consistent with the correlation of 0.56 reported by Davitz and Davitz (1981).

Table 5 shows the overall changes in pain and psychological distress scores over the period of the CFP. The mean scores for all the cases show that although there was very little change in the pain scores ($t=-0.15$, $df=176$, $p<0.9$) there was a significant increase in the psychological distress scores ($t=-2.23$, $df=178$, $p<0.03$). Thus the null hypothesis that there would be no change in the students’ inferences of pain over the course of the CFP can be accepted in relation to pain scores, but rejected in relation to psychological distress scores.

Table 5 Mean inferences of pain and psychological distress at the beginning and end of the CFP

	n (missing)	Mean score at beginning of the CFP (Standard deviation)	n (missing)	Mean score at the end of the CFP (Standard deviation)
Pain	193(24)	3.5865 (0.6353)	177(40)	3.5827 (0.6186)
Psychological distress	197(20)	4.1909 (0.7057)	179(38)	4.2759 (0.6732)

The mean scores for pain and psychological distress are compared in Table 6 and 7. The inferences of psychological distress were consistently higher than those for pain. This difference is statistically significant (Table 6) thus showing that although

inferences of pain and psychological distress are related they were seen as different by the respondents.

Table 6 Mean inferences of pain and psychological distress for different cases at the beginning of the CFP

Cases	n (missing)	Mean pain score at beginning of the CFP (Standard deviation)	Mean psychological distress scores at the beginning of the CFP (Standard deviation)	Paired t test
All cases	189(28)	3.5865 (0.6353)	4.1909 (0.7057)	-13.00 p<0.0001
Adult cases	194(23)	3.5367 (0.6488)	4.1111 (0.6712)	-12.79 p<0.0001
Child cases	201(16)	3.7715 (0.6939)	4.0197 (0.9621)	-3.85 p<0.0002
Elderly cases	203(14)	3.5362 (0.6996)	4.4396 (0.7782)	-16.81 p<0.0001
Male cases	185(32)	3.5773 (0.6676)	4.1211 (0.7201)	-10.91 p<0.0001
Female cases	185(32)	3.5853 (0.6527)	4.2700 (0.7037)	-13.96 p<0.00001

Table 7 Mean inferences of pain and psychological distress for different cases at the end of the CFP

	n (missing)	Mean pain score at end of the CFP (Standard deviation)	Mean psychological distress score at the end of the CFP (Standard deviation)	t value
All cases	177(40)	3.5827 (0.6186)	4.2759 (0.6732)	-14.96 p<0.0001
Adult cases	179(38)	3.5449 (0.6043)	4.2653 (0.6717)	-16.62 p<0.0001
Child cases	179(38)	3.6855 (0.6665)	4.1212 (0.8689)	-6.96 p<0.0001
Elderly cases	179(38)	3.5262 (0.6700)	4.4414 (0.7527)	-17.38 p<0.0001
Male cases	179(38)	3.5929 (0.6398)	4.2126 (0.6910)	-12.84 p<0.0001
Female cases	179(38)	3.5767 (0.6162)	4.3393 (0.6737)	-17.62 p<0.0001

The standard deviations for both pain and psychological distress scores showed that there was a high degree of variation in inferences of pain and psychological distress amongst the students. In order to explore influences on the inferences, a number of characteristics of the cases on the questionnaire and of the students were explored.

The effect of these different characteristics were explored using a two way analysis of variance, time (beginning and end of the CFP) being the within subject factor, the

within and residual representing the error. When exploring the effects of the characteristics of cases (e.g. gender and age group) these and time were included as within subject variables. Where different characteristics of the students were explored these were between subject variables.

2.3.3 Effects of the characteristics of cases on inferences of pain and psychological distress

2.3.3(a) Gender

The scenarios in the questionnaires were divided into male and female cases. By combining all the male and all the female scenarios a score for male and female cases was calculated in order to assess whether the students' inferences of pain or psychological distress were different for male and female cases (Table 8 &9).

Table 8 Mean inferences of pain for male and female cases at the beginning and end of the CFP

	n (missing)	Mean pain score at the beginning of the CFP (Standard deviation)	n (missing)	Mean pain score at the end of the CFP (Standard deviation)
Female cases	192(25)	3.5853 (0.6676)	179(38)	3.5767 (0.6162)
Male cases	192(25)	3.5773 (0.6676)	179(38)	3.5929 (0.6398)

Table 9 Mean inferences of psychological distress for male and female cases at the beginning and end of the CFP

	n (missing)	Mean psychological distress score at the beginning of the CFP (Standard deviation)	n (missing)	Mean psychological distress score at the end of the CFP (Standard deviation)
Female cases	188(29)	4.2618 (0.7130)	179(38)	4.3393 (0.6737)
Male cases	188(29)	4.1171 (0.7305)	179(38)	4.2126 (0.6910)

Analysis of variance showed no significant effect of gender of cases on inferences of pain ($F=0.07$, $df=1$, 178 , $p<0.8$) nor was there an interaction with time ($F=1.33$, $df=1$, 178 , $p<0.3$). However there was a significant effect on inferences of psychological distress ($F=100.64$, $df=1$, 178 , $p<0.001$) even though again there was no significant interaction with time ($F=0.31$, $df=1$, 179 , $p<0.6$). In other words, female cases received higher inferences of psychological distress than did male cases and the increase over the CFP was the same for both sets of cases.

2.3.3(b) Age of cases

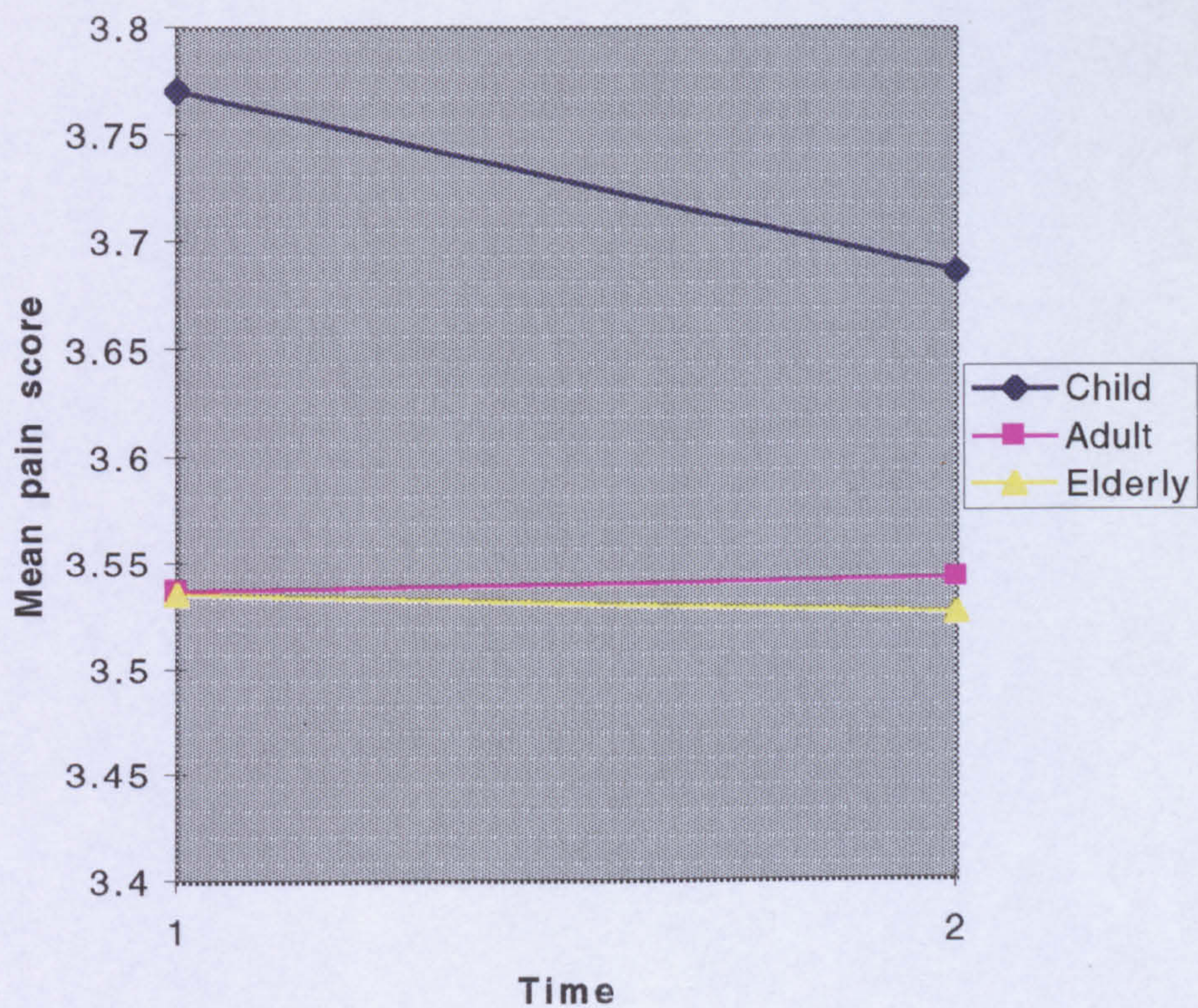
The cases in the questionnaire were divided into three age groups: child, adult and elderly. Analysis of variance was performed to identify any differences in inferences that may exist for different age groups and to identify any effect that different inferences for these age groups may have on the changes in the students' inferences of pain and psychological distress scores over the CFP (Table 10).

Table 10 Mean inferences of pain for child, adult and elderly cases at the beginning and the end of the CFP

	n (missing)	Mean pain score at the beginning of the CFP (Standard deviation)	n (missing)	Mean pain score at the end of the CFP (Standard deviation)
Child cases	202(15)	3.7715 (0.6939)	179(38)	3.6855 (0.6665)
Adult cases	196(21)	3.5367 (0.6488)	179(38)	3.5422 (0.6043)
Elderly cases	205(12)	3.5362 (0.6996)	179(38)	3.5262 (0.6700)

Analysis of variance shows that there was a highly significant difference between the pain scores of the three different age groups ($F=68.42$ $df=2, 328$ $p< 0.001$) and that there was also a significant interaction between the age groups and time ($F=6.13$, $df=2, 328$, $p< 0.003$). Thus not only did students infer different pain scores depending on the age groups of the cases, their inferences of pain changed over time differently depending on the age group of the cases. Figure 8 represents the three age groups and the change in scores over the CFP.

Figure 8 Changes in inferences of pain according to age group of cases



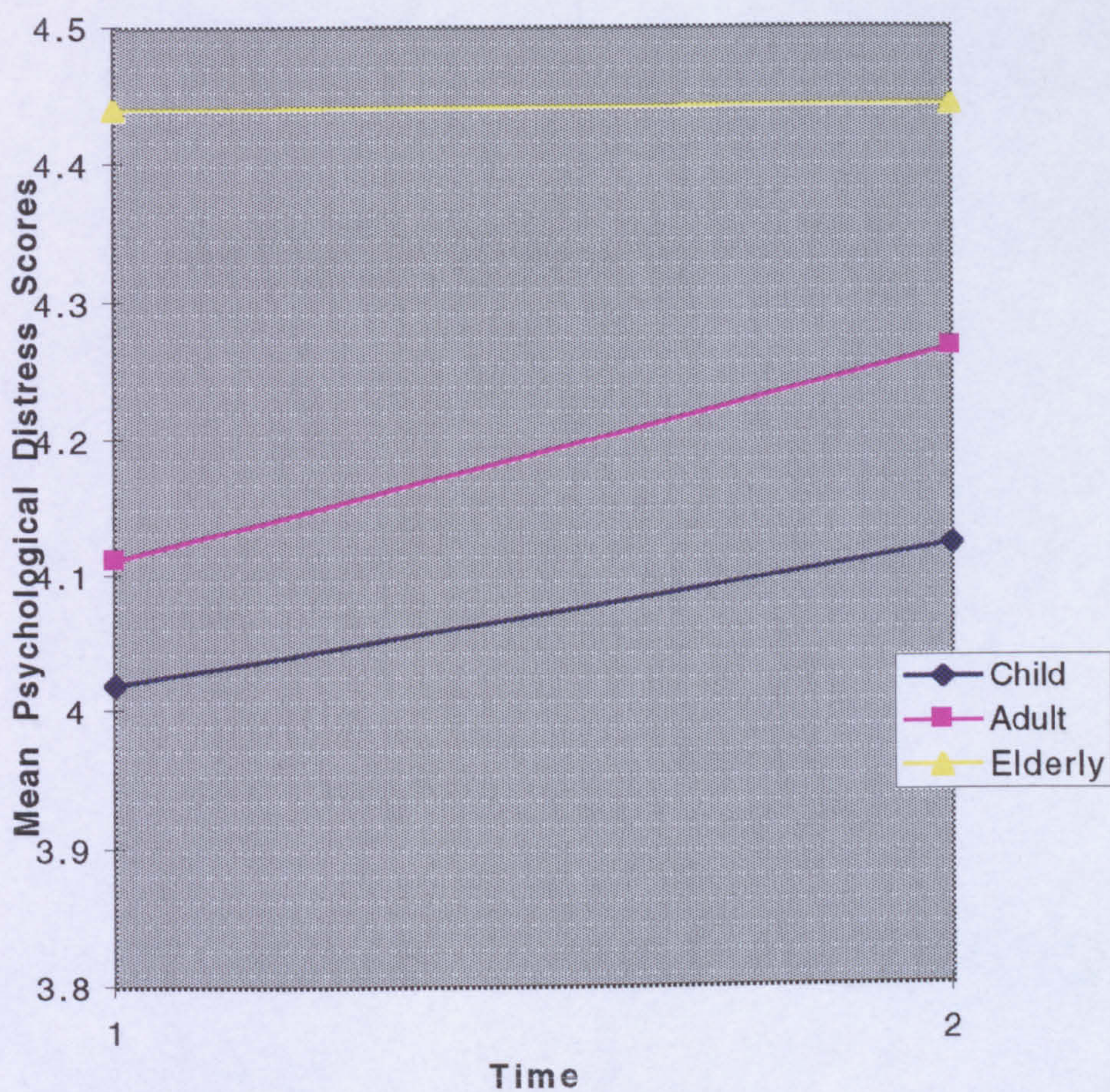
For the inferences of pain, Scheffe’s post hoc comparisons showed that the differences lay between the means for the child and adult cases at both the beginning ($F=79.5, p<0.001$) and end of the CFP ($F=26.5, p<0.001$) and between the child and the elderly cases at the beginning ($F=81.67, p<0.001$) and the end ($F=36.5, p<0.001$) with no difference between the means for the adult and elderly cases. This shows that the students inferred more pain for the child cases than either the adult or elderly cases at both the beginning and end of the CFP, but did not differentiate between adult and elderly cases at either time. While the students all received placements relating to all the age groups, the majority of placements for the child experience were in nursery settings which would be unlikely to have involved children in pain or distress.

Table 11 Mean inferences of psychological distress of child, adult and elderly cases at the beginning and the end of the CFP

	n (missing)	Mean psychological distress score at the beginning of the CFP (standard deviation)	n (missing)	Mean psychological distress score at the end of the CFP (standard deviation)
Child cases	203(14)	4.0197 (0.6939)	179(38)	4.1212 (0.8689)
Adult cases	194(23)	4.1111 0.6712)	179(38)	4.2653 (0.6717)
Elderly cases	204(13)	4.4396 (0.7782)	179(38)	4.4414 (0.7527)

When examining the effect of age of cases on inferences of psychological distress (Table 11) a Mauchly sphericity test showed that the assumption of homogeneity of covariance was not met for the age groups ($W=0.71457$, $\chi^2 = 53.77297$, $p=0.000$) or the interaction between age groups and time ($W=0.83217$, $\chi^2 = 29.31516$, $p=0.000$) and so the Greenhouse-Geisser test was used as this is a more conservative test (Kinnear and Gray 1994). The Greenhouse-Geisser test shows that the age of the cases was still a significant influence on the inferences of psychological distress ($F=31.57$ $df=1.56, 322$, $p<0.001$) and there was also a significant interaction with time ($F=4.47$, $df= 1.71, 322$, $p<0.02$). Figure 9 shows that inferences of psychological distress for the adult and child cases increased while inferences for the elderly cases remained more stable with high inferences of psychological distress at the beginning and end of the CFP compared to the other groups.

Figure 9 Change in psychological distress scores according to the age group of cases



Scheffe's post hoc comparisons showed that the differences lay between the means for the elderly and adult cases at both the beginning ($F=34.66$, $p<0.001$) and end of the CFP ($F=7.06$, $p<0.05$) and between the elderly and child cases at the beginning ($F=34.66$, $p<0.001$) and end ($F=24.86$, $p<0.001$) with no difference between the means for the adult and child cases. Thus the students inferred higher psychological distress scores for elderly cases than for adult and child cases at both the beginning and end of the CFP, however there was no difference in the inferences for the child and adult cases at either time.

Thus although the age of cases affected both inferences of pain and psychological distress, there was a different pattern for each. The students inferred more pain in

children compared to the adult cases however they did not infer higher psychological distress for the child cases compared to the other groups.

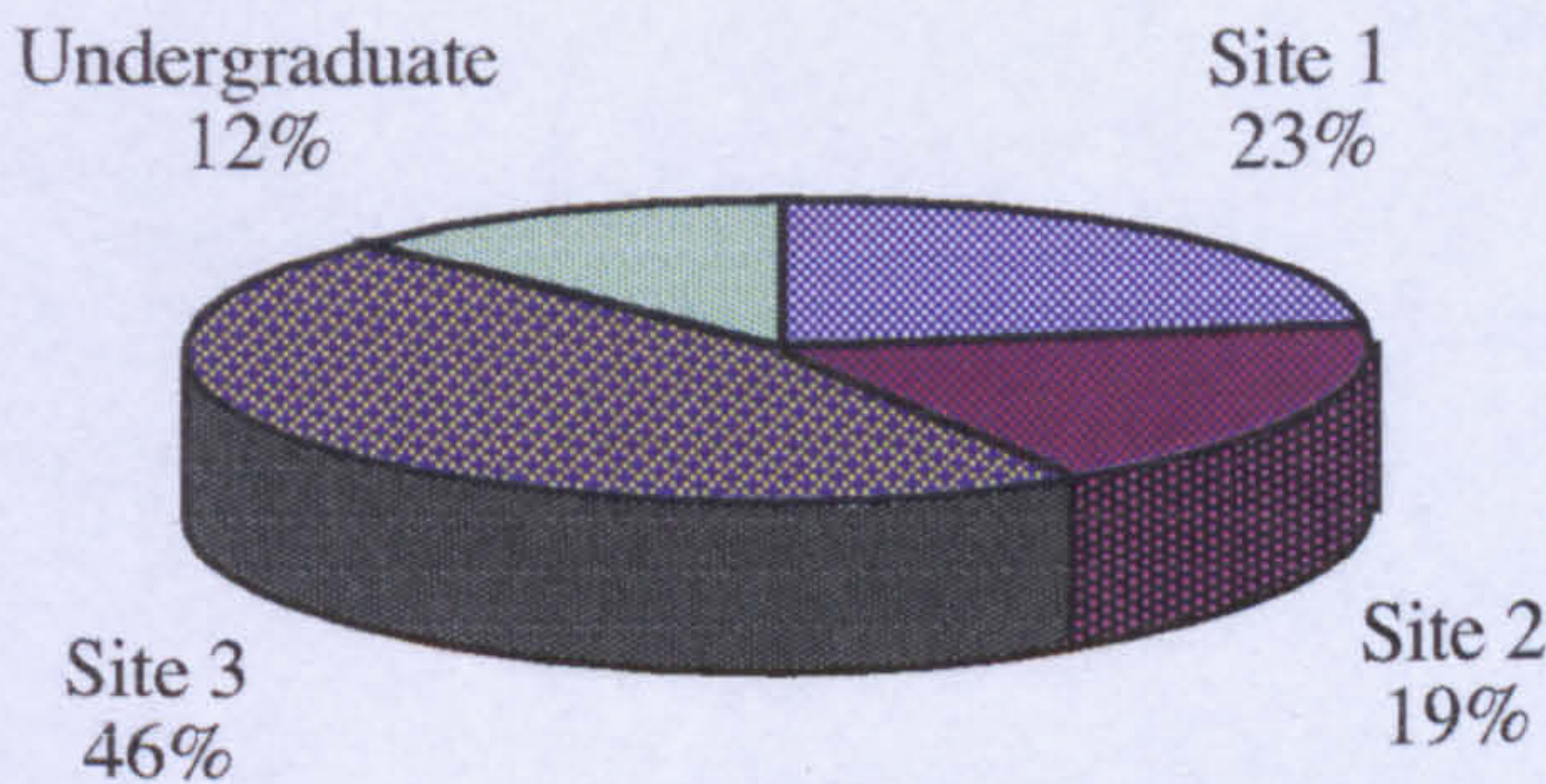
2.3.4 Characteristics of students

2.3.4 (a) Site

The students were recruited for the study from four sites, the numbers of students from the three different sites within the college and from a local university course are shown in figure 10. Students at different sites undertake clinical experiences at different placements although three of the sites followed the same curriculum. Analysis of the inferences of students from the different sites allows exploration of these differences.

Figure 10 Distribution of subjects across sites

n= 217



The mean inferences of pain and psychological distress according to site are displayed in Tables 12 and 13.

Table 12 Mean inferences of pain at the beginning and end of the CFP according to site

Site	n	Mean	Standard	n	Mean	Standard
n= 217 (missing=0)	(missing)	pain score at the beginning of the CFP	deviation	(missing)	pain score at the end of the CFP	deviation
Site 1	44(6)	3.3579	0.5330	44(6)	3.4076	0.5942
Site 2	40(1)	3.6688	0.7302	34(7)	3.6358	0.7101
Site 3	85(14)	3.6696	0.6257	77(22)	3.6468	0.5801
Under- graduates	24(3)	3.5743	0.6053	23(4)	3.5558	0.6963
Total	193(24)			178(39)		

Table 13 Mean inferences of psychological distress at the beginning and end of the CFP according to site

Site	n	Mean	Standard	n	Mean	Standard
n=217 (missing=0)	(missing)	psychological distress scores at the beginning of the CFP	deviation	(missing)	psychological distress scores at the end of the CFP	deviation
Site 1	49(6)	4.1143	0.7412	44(11)	4.1492	0.5280
Site 2	40(1)	4.2417	0.7985	35(7)	4.4379	0.7169
Site 3	84(15)	4.2396	0.6757	77(22)	4.2875	0.7109
Under-graduates	24(3)	4.0924	0.5768	23(4)	4.2333	0.7108
Total	197(25)			179(44)		

As can be seen from the above tables site one has a lower mean pain score than the other three sites whilst the undergraduate students have a lower mean psychological distress score than the other three sites. Although analysis of variance indicates that the site is a significant influence on inferences of pain ($F=3.08$, $df=3, 159$, $p< 0.03$) this is not the case for psychological distress scores ($F=1.35$, $df=3, 164$, $p< 0.3$). However Scheffe post hoc comparisons failed to reach the critical values for F (5% level) of 7.8 for pain at either the beginning or end of the CFP. As there was no consistent pattern in the means and the probabilities associated with the effect of site were only just significant, no conclusion is drawn from these findings. Sites deliver the same core teaching and any differences in effect of delivery on the students' inferences would need to be explored in a further study.

Although the students' inferences of pain and psychological distress varied according to the site there was no interaction between the site and time for pain scores ($F=1.39$, $df=3, 159$, $p<0.3$) or psychological distress scores ($F=0.24$, $df=3, 164$, $p<0.9$). Thus changes in the students' inferences of pain and psychological distress over the CFP did not vary according to the site as can be seen in figures 11 and 12.

Figure 11 Mean pain scores at the beginning and end of the CFP according to site

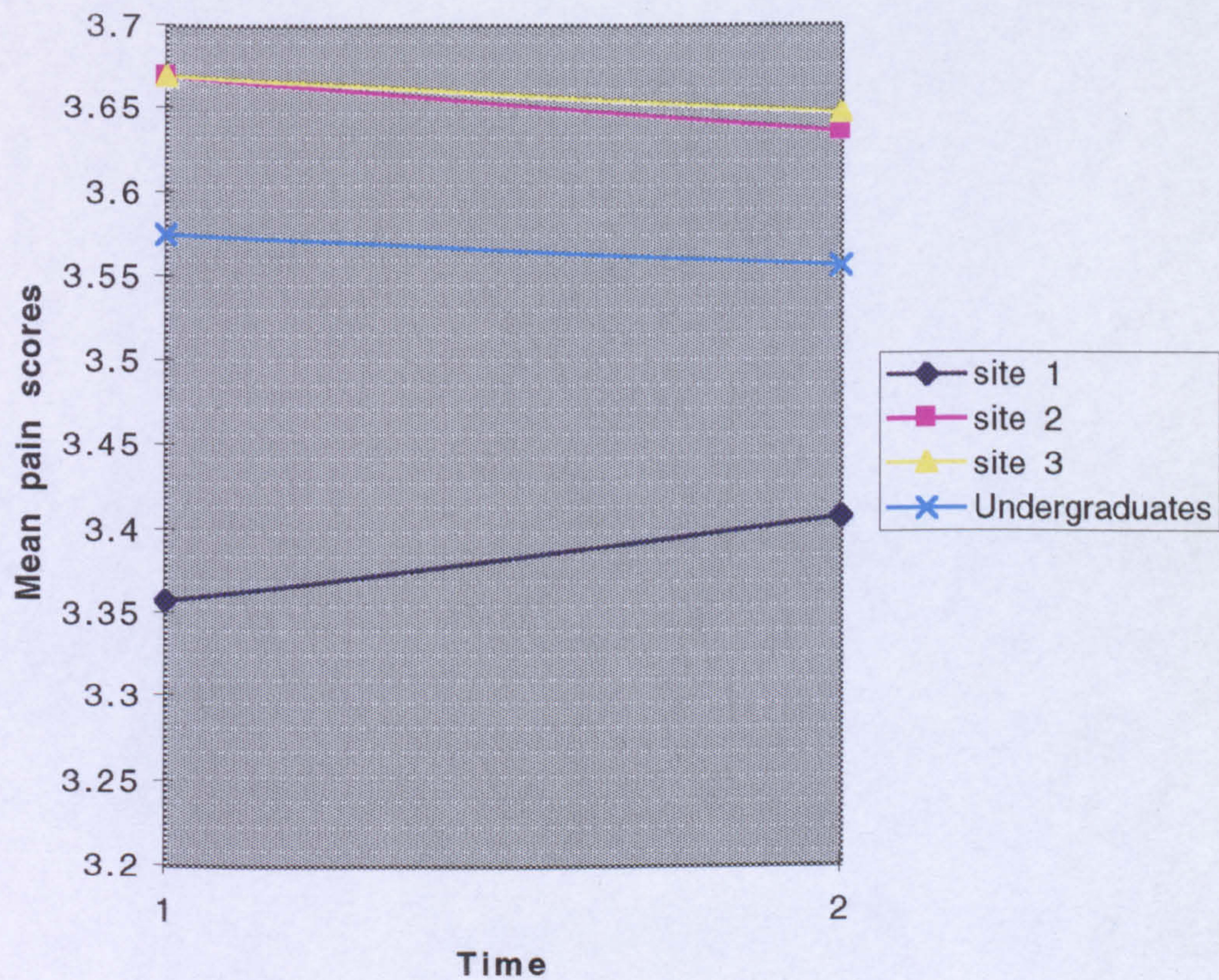
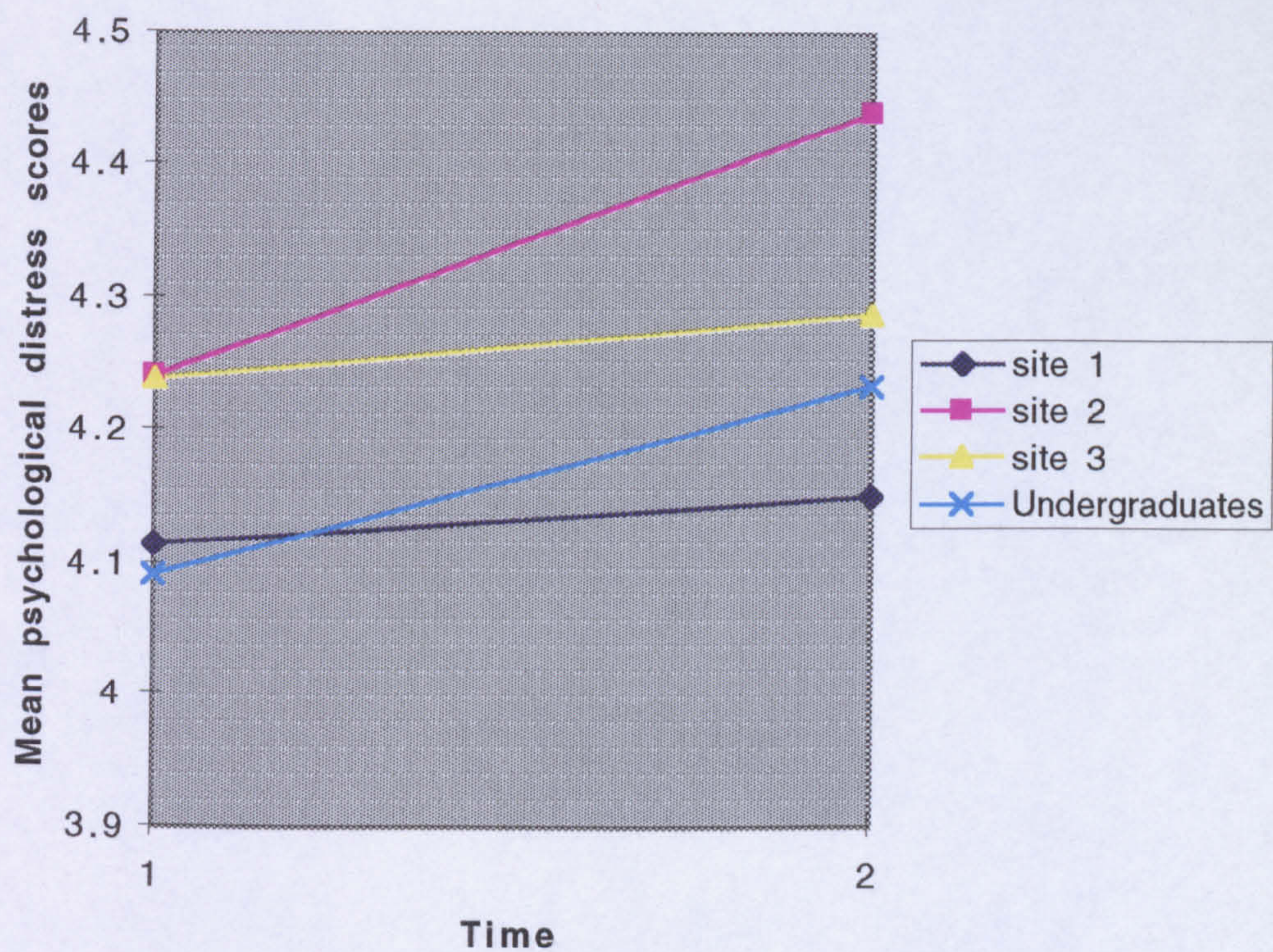


Figure 12 Mean psychological distress score at the beginning and the end of the CFP by site



2.3.4(b) Branch

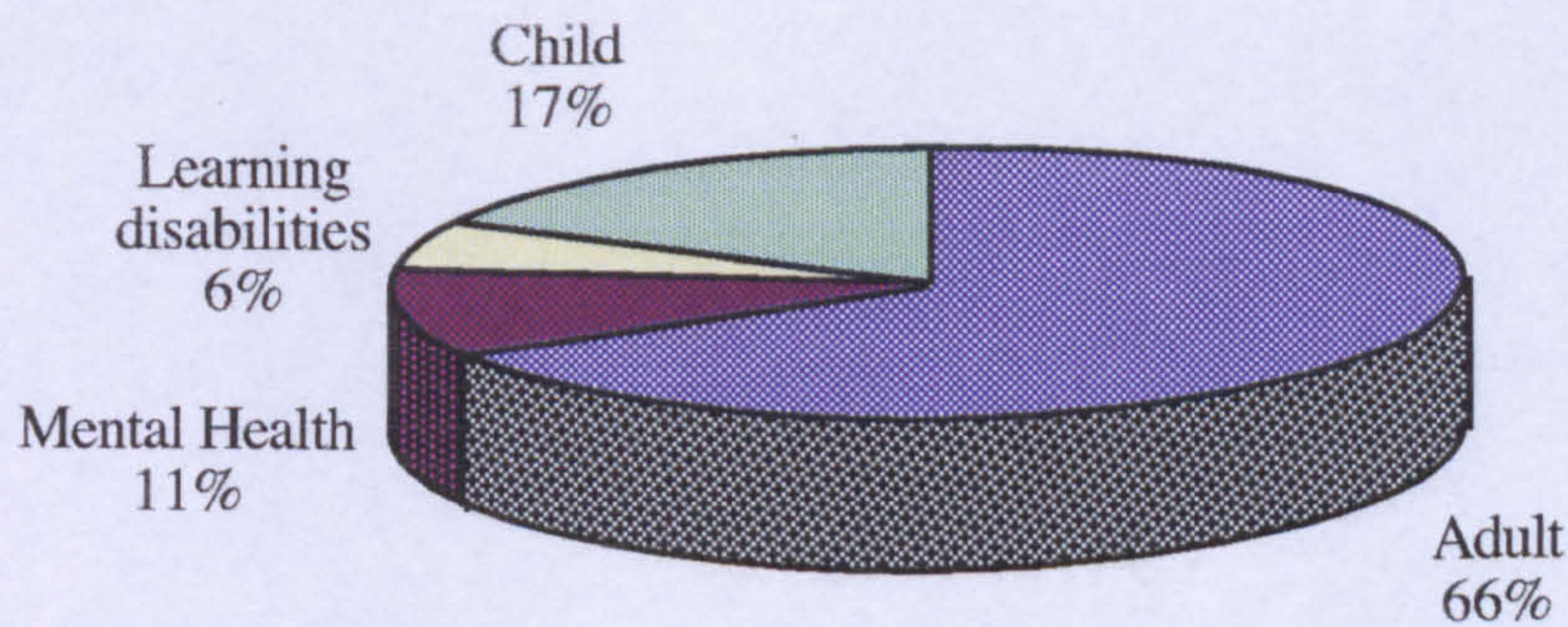
All four branches were offered at the college of nursing while all undergraduates were recruited to the adult branch, the distribution of students amongst the branches is illustrated in Table 14 & figure 13. There is a possibility that there may have been differences in the type of students recruited to the different branch programmes.

Table 14 Intended Branch of study

Branch	Number	Percentage
n = 207		
missing = 10		
Adult	138	66.7 %
Mental health	22	10.6 %
Learning difficulty	12	5.8 %
Child	35	16.9 %

Figure 13 Distribution of students by branch

(n=207)



The mean pain and psychological distress scores for the students intending to follow the different branches are shown in Tables 15 and 16. The difference in the group sizes mean that care should be taken in interpreting these results however there were no significant differences between the pain scores of the students intending to follow different branches ($F=1.55$ $df=3, 153$, $p< 0.3$), and there was no interaction between students' choice of branch programme and time ($F=0.15$, $df=3, 153$, $p< 0.7$), that is

students’ inferences of pain did not change differently according to which branch they were intending to follow.

Table 15 Inferences of pain according to branch

Branch n= 207 (10 missing)	n (missing)	Mean pain score at the beginning of the CFP	Standard deviation	n (missing)	Mean pain score at the end of the CFP	Standard deviation
Adult	125(13)	3.6107	0.6390	115(23)	3.6572	0.5700
Mental Health	21(1)	3.7563	0.7311	19(3)	3.4439	0.6805
Learning disabilities	11(1)	3.5739	0.7247	8(4)	3.4875	0.9025
Child	28(7)	3.4536	0.5316	29(6)	3.4454	0.7034
Total	185(22)			171(36)		

As with the inferences of pain there were no significant differences in inferences of psychological distress according to intended branch ($F=0.65$, $df=3$, 158 , $p<0.6$) and no interaction between branch and time ($F=1.31$, $df=3$, 158 , $p<0.3$). Thus the intended branch of study had no effect on the inferences of psychological distress or the way inferences changed over the CFP.

Table 16 Inferences of psychological distress according to branch

Branch n= 207 (10 missing)	n (missing)	Mean psychological distress score at beginning of the CFP	Standard deviation	n (missing)	Mean psychological distress score at end of the CFP	Standard deviation
Adult	127(11)	4.1687	0.7099	116(22)	4.3027	0.6741
Mental Health	20(2)	4.2275	0.5798	18(4)	4.1167	0.6657
Learning disabilities	11(1)	4.6502	0.3011	8(4)	4.1875	0.5547
Child	31(4)	4.1517	0.8385	30(5)	4.2894	0.7302
Total	189(18)			172(35)		

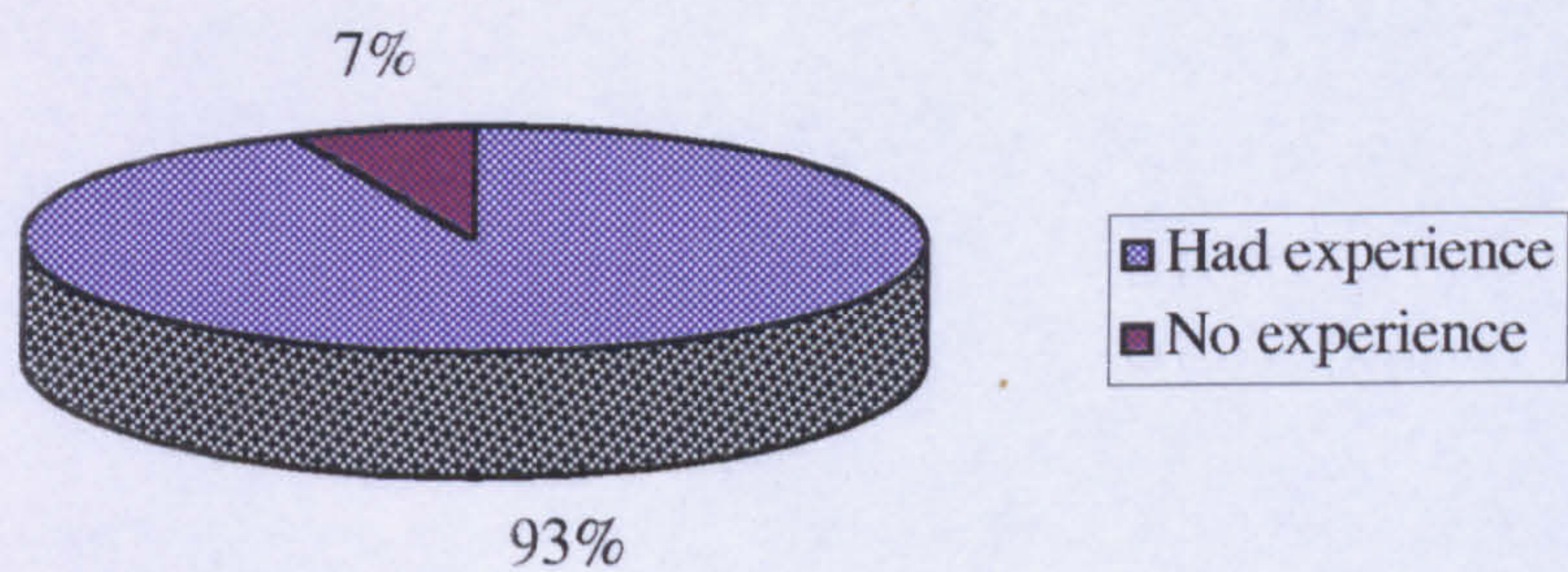
Students’ choice of branch was also recorded at the end of the CFP as they were able in some cases to change the branch they intended to follow. The students’ choice of branch at the end of the CFP was not related to their inferences of pain ($F=1.48$, $df=3$, 157, $p< 0.3$) or psychological distress ($F=0.29$, $df=3$, 162 $p< 0.9$) and there was no interaction with time in relation to pain ($F=1.37$, $df=3$, 157, $p<0.3$) or psychological distress ($F=0.69$, $df=3$, 162, $p< 0.6$). Thus as with the choice of branch on commencing the CFP, choice of branch at the end of the CFP was not related to inferences of pain or psychological distress or the way they altered over the CFP.

2.3.4(c) Caring for patients in pain

As experience of caring for patients in pain has been suggested as a factor that may affect inferences students were asked if they had cared for a patient experiencing pain during their CFP placements. The vast majority of students had cared for a patient in pain (Figure 14). It is therefore not possible to explore the effects of this experience

on students' inferences of pain. The students reported a range of placement experiences, and of those reporting an adult experience 20 had a placement on a surgical ward (Table 17 and 18).

Figure 14 Students' experience of caring for a patient in pain
n=178 (missing=39)



There was no effect of placement experience on inferences of pain ($F=0.67$, $df=1$, 160 , $p<0.5$) or psychological distress ($F=0.15$, $df=1$, 165 , $p<0.7$) neither were there significant interactions between time and placement experience for either pain ($F=2.83$, $df=1$, 160 , $p<0.1$) or psychological distress ($F=0.34$, $df=1$, 165 , $p<0.6$). Therefore there is no difference between the inferences of students who have had a surgical placement and those who had not, nor does such an experience affect changes in inferences over the course.

Table 17 Inferences of pain of students who have or have not had a surgical experience

Surgical experience n= 178 (39 missing)	n (missing)	Mean pain score at beginning of the CFP	Standard deviation	n (missing)	Mean pain score at end of the CFP	Standard deviation
Has had a surgical placement	19(1)	3.561	0.568	20(0)	3.763	0.548
Has not had a surgical placement	145(13)	3.5828	0.6210	156(2)	3.5639	0.6245
Total	164(14)			176(2)		

Table 18 Inferences of psychological distress of students who have or have not had a surgical experience

Surgical experience n= 178 (39 missing)	n (missing)	Mean psychological distress score at beginning of the CFP	Standard deviation	n (missing)	Mean psychological distress score at end of the CFP	Standard deviation
Has had a surgical placement	20(0)	4.1660	0.636	20(0)	4.385	0.619
Has not had a surgical placement	147(11)	4.1654	0.7019	158(0)	4.2674	0.6793
Total	167(11)			178(0)		

2.3.4(d) Age

Students were asked to give their age in years. These were then categorised to give groups with comparable sizes to allow analysis of the effect of the students' age on their inferences of pain and psychological distress. The categories of the students' age and the mean pain and psychological distress scores for each of the groups are shown in Tables 19 and 20.

As would be expected the majority of the sample was in the 17-25 age range and the majority of the students were under 21 years of age (54%). Although analysis of variance showed that the students' age had a significant effect on the students' inferences of pain ($F= 2.98$ $df=4, 156$, $p< 0.03$) examination of the mean scores (Table 19) shows no consistent relationship with increasing or decreasing age. This is supported by the scatter plots of inferences of pain at the beginning (figure 15) and end (figure 16) of the CFP and the lack of a significant correlation between age and pain at the beginning of the course (Pearson's $r = -0.117$, $df =190$, $p< 0.2$). However there is a weak negative correlation between age and inferences of pain at the end of the CFP (Pearson's $r =-0.1496$ $df =174$, $p< 0.05$). This correlation only just reaches significance, accounting for less than 3% of the variance so no firm conclusions can be drawn without further investigation.

Table 19 Mean pain scores according to students' age category

Age (years) n=214 (missing=3)	n (%)	n (missing)	Mean pain score at beginning of the CFP (Standard deviation)	n (missing)	Mean pain score at the end of the CFP (Standard deviation)
17&18	39(18%)	34 (5)	3.577 (0.607)	35 (4)	3.538 (0.496)
19	42(20%)	37 (5)	3.744 (0.493)	31 (11)	3.814 (0.517)
20	34(16%)	32 (2)	3.709 (0.616)	28 (6)	3.868 (0.481)
21-25	45(21%)	40 (5)	3.507 (0.784)	37 (8)	3.414 (0.679)
26 & over	54(25%)	48 (6)	3.471 (0.603)	44 (10)	3.431 (0.695)
Total	214(100%)	191 (23)		175 (39)	

Figure 15 Relationship of mean inference of pain at the beginning of the course to the age of the student (n=191)

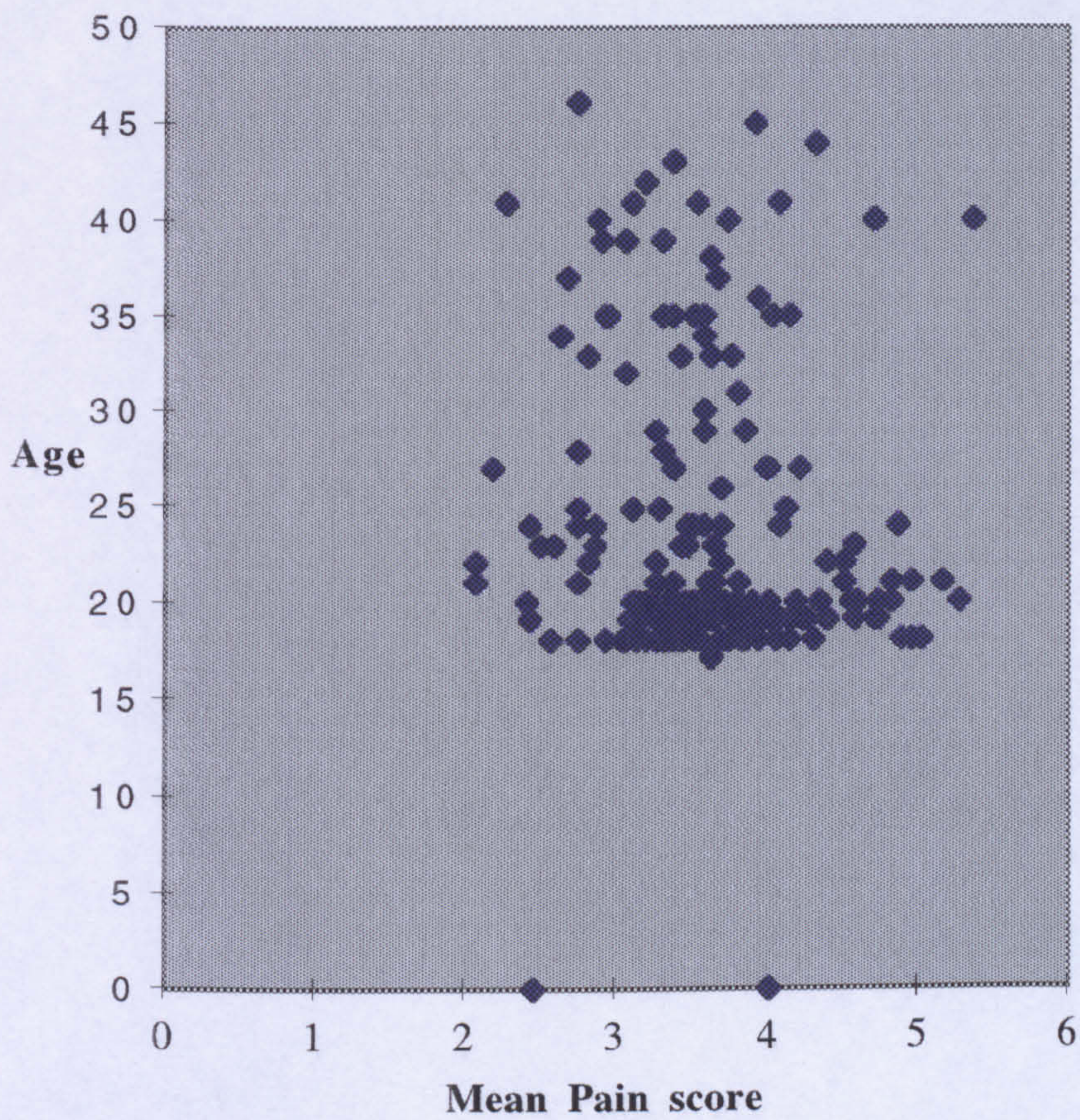
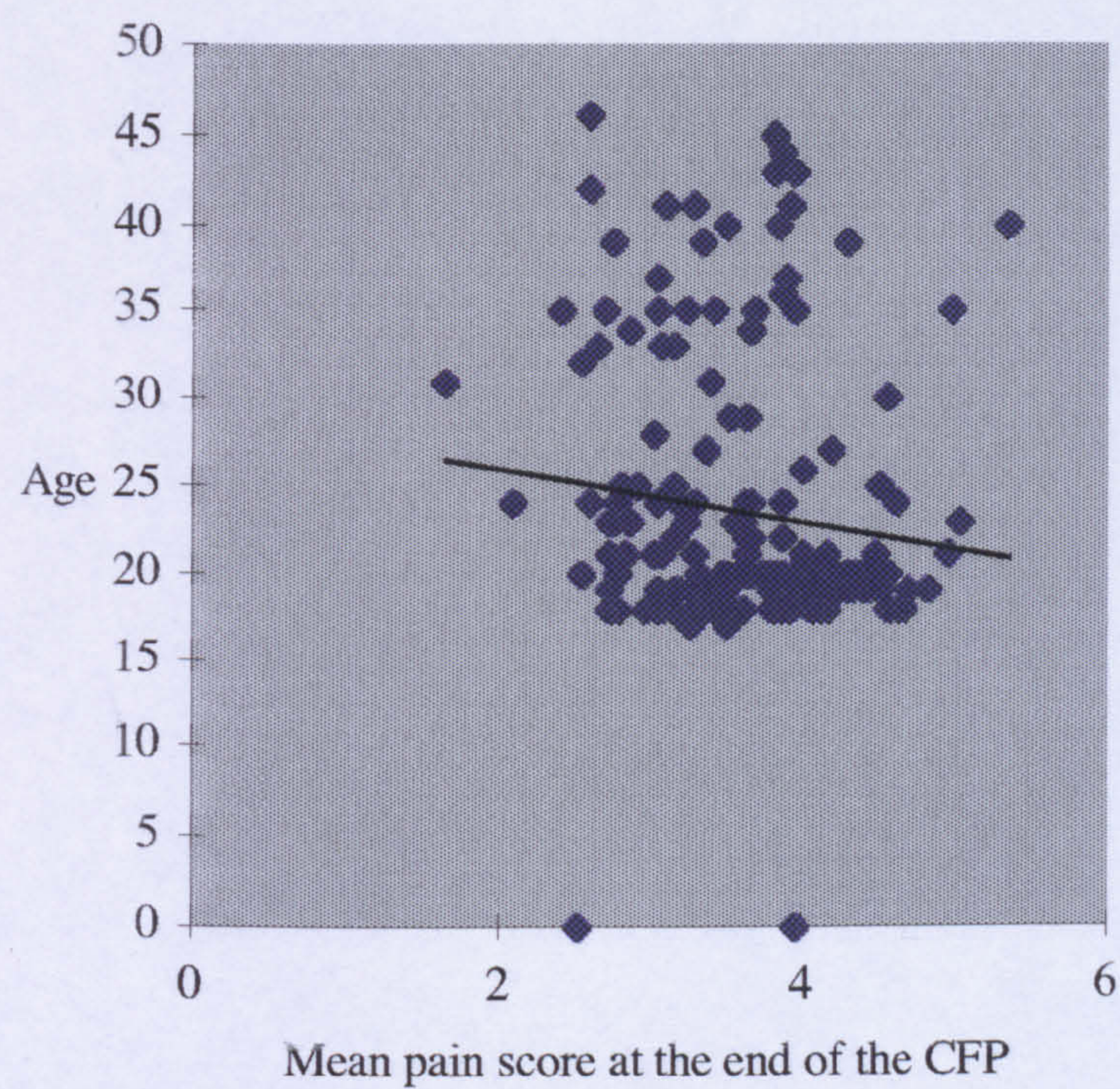


Figure 16 Relationship of mean inference of pain at the end of the course to the age of the student (n=175)



The relationship between the age of the students and their inferences of psychological distress are shown in Table 20.

Table 20 Mean psychological distress scores according to students' age category

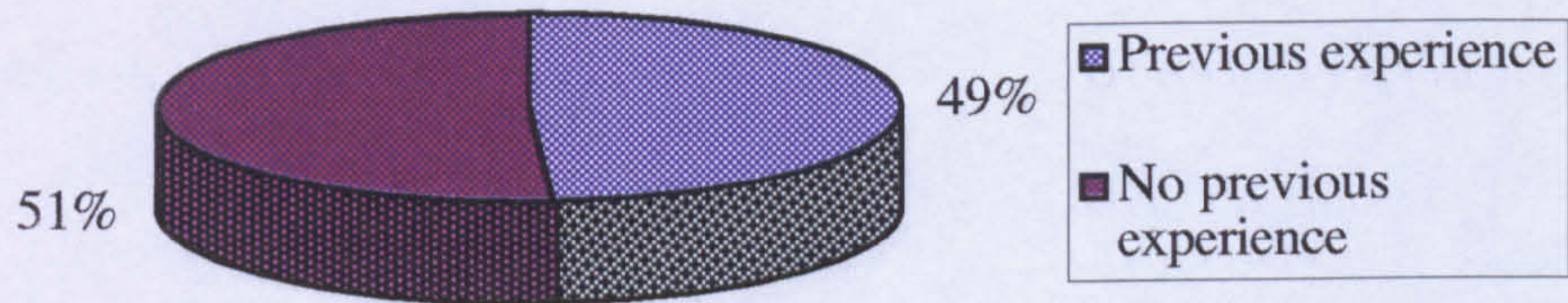
Age (years) n=214 (missing=3)		n (missing)	Mean pain score at beginning of the CFP (Standard deviation)	n (missing)	Mean pain score at the end of the CFP (Standard deviation)
17&18	39(18%)	35 (4)	4.104 (0.646)	35 (4)	4.132
19	42(20%)	37 (5)	4.279 (0.697)	33 (9)	4.462
20	34(16%)	32 (2)	4.074 (0.674)	28 (6)	4.395
21-25	45(21%)	40 (5)	4.091 (0.750)	37 (8)	4.201
26 & over	54(25%)	51 (3)	4.346 (0.724)	44 (10)	4.238
Total	214 (100%)	195 (19)		177 (37)	

Unlike for inferences of pain, the age category of the students did not affect their inferences of psychological distress ($F= 1.55$, $df=4$, 161, $p< 0.2$) and there was no interaction between age and time ($F= 1.79$, $df=4$, 161, $p< 0.2$). Thus the students' age was not related to inferences of psychological distress or the way these inferences changed over the CFP.

2.3.4(e) Previous nursing experience

Just under half of the students entering training had previous nursing experience (Figure 17).

Figure 17 Previous nursing experience
(n=184 missing=33)



The relationship between previous nursing experience and the students’ inferences of pain and psychological distress are displayed in Tables 21 and 22.

Table 21 Pain scores at the beginning and end of the course by previous experience

n= 184 (missing= 33)	n (missing)	Pain score at the beginning of the CFP	Standard deviation	n (missing)	Pain score at the end of the CFP	Standard deviation
Previous experience of nursing	83(7)	3.562	0.627	72(18)	3.515	0.624
No previous experience of nursing	82(12)	3.643	0.654	78(16)	3.680	0.591
Total	165(19)			150(34)		

Table 22 Psychological distress scores at the beginning and end of the course by previous experience

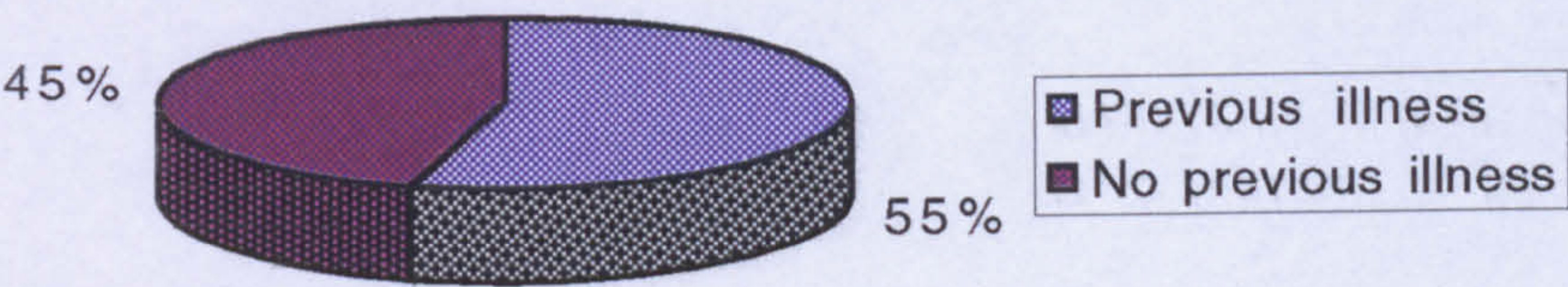
n= 184 (missing=33)	n (missing)	Pain score at the beginning of the CFP	Standard deviation	n (missing)	Pain score at the end of the CFP	Standard deviation
Previous experience of nursing	86(4)	4.216	0.689	78(12)	4.344	0.573
No previous experience of nursing	82(12)	4.222	0.766	73(21)	4.228	0.759
Total	168(16)			151(33)		

Previous experience of nursing had no significant effect on students' inferences of pain ($F=1.87$, $df=1$, 136 , $p=0.173$) and there was no significant interaction with time ($F=0.37$, $df=1$, 136 , $p<0.6$). Previous experience of nursing also had no significant effect on inferences of psychological distress ($F=0.18$, $df=1$, 141 , $p<0.7$) and as with inferences of pain there was no interaction with time ($F=3.26$, $df=1$, 141 , $p<0.08$). Thus nurses with previous experience of nursing, and therefore potentially increased exposure to pain and suffering, did not infer different levels of pain or psychological distress than those with no experience. Previous experience of caring for patients had no effect on the way inferences of pain or psychological distress changed during the CFP.

2.3.4(f) Previous Illness

Personal experience of a painful illness has been suggested as an influencing factor in inferences of pain. Just over half the students had experience of what they themselves defined as a painful illness or injury (Figure 18).

Figure 18 Students’ experience of a previous illness
(n=209 missing=8)



Mean pain and psychological distress scores related to the students’ experience of illness can be seen in Tables 23 and 24.

Table 23 Mean pain scores according to the experience of an illness at the beginning of the CFP

Experience of a painful illness n= 184 missing =33	n (missing)	Mean pain score at the beginning of the CFP (Standard deviation)	n (missing)	Mean pain score at the end of the CFP (Standard deviation)
Has had previous experience	82(8)	3.643 (0.654)	72(18)	3.680 (0.591)
No previous experience	83(11)	3.562 (0.627)	78(16)	3.515 (0.680)
Total	165(19)		150(34)	

Table 24 Mean psychological distress scores according to the experience of an illness at the beginning of the CFP

Experience of a painful illness n= 184 missing =33	n (missing)	Mean psychological distress score at the beginning of the CFP (Standard deviation)	n (missing)	Mean psychological distress score at the end of the CFP (Standard deviation)
Has had previous experience	82(8)	4.222 (0.766)	73(17)	4.228 (0.759)
No previous experience	86(8)	4.216 (0.689)	78(16)	4.344 (0.573)
Total	168(16)		151(33)	

Analysis of variance showed that a previous illness was not related to the students' inferences of pain ($F=0.03$, $df=1$, 155, $p<0.9$) or psychological distress ($F=2.24$, $df=1$, 159, $p=0.2$), and there was no interaction with time for either inferences of pain ($F=0.01$, $df=1$, 155, $p<1.0$) or psychological distress ($F=0.45$, $df=1$, 159, $p<0.6$). Students with an experience of a painful illness at the beginning of the course did not infer different levels of pain or psychological distress than those with no experience. Such an experience also had no effect on the way inferences changed over the CFP.

2.3.4(g) Student Gender

The vast majority of students were female (Table 25 and 26) leading to very unequal sized groups. A comparison of the pain and psychological distress scores of the students according to their gender can be seen in Table 25 and 26. Analysis of variance shows that there were no significant differences between male and female students in relation to inferences of pain ($F=0.83$, $df=1$, 161, $p<0.4$) or psychological

distress ($F=0.71$, $df=1$, 166 , $p<0.4$) and there were no interactions with time for either pain ($F=0.0$, $df=1$, 161 , $p<1.0$) or psychological distress ($F=0.0$, $df=1$, 166 , $p<1.0$). Male and female students do not therefore infer different levels of pain or psychological distress and there are no differences in the way male and female students' inferences change over the CFP.

Table 25 Pain scores of male and female students

Sex n=202 (15 missing)	n (%)	n (missing)	Mean pain score at beginning of CFP (Standard deviation)	n(missing)	Mean pain score at end of CFP (Standard deviation)
Female	179 (88.6%)	179(0)	3.610 (0.614)	158(21)	3.610 (0.610)
Male	23 (11.4%)	18 (5)	3.590 (0.680)	19(4)	3.380 (0.660)
Total		197(5)		177(25)	

Table 26 Psychological distress scores of male and female students

Sex n=202 (15 missing)	n (%)	n (missing)	Mean psychological distress score at beginning of CFP (Standard deviation)	n (missing)	Mean psychological distress score at end of CFP (Standard deviation)
Female	179 (88.6%)	166(13)	4.210 (0.680)	159(20)	4.300 (0.650)
Male	23 (11.4%)	20(3)	4.080 (0.850)	20(3)	4.080 (0.800)
Total		186(16)		179(23)	

2.3.4(h) Country of origin

It is not possible to comment on any differences in inferences of pain in relation to the country of origin of the student as 98% of the sample originated from the United Kingdom.

2.3.5 Students' views of pain relief

Students' views relating to the standard of pain control, the aim of pain control and the potential rate of addiction were obtained in the questionnaires at the beginning and end of the CFP.

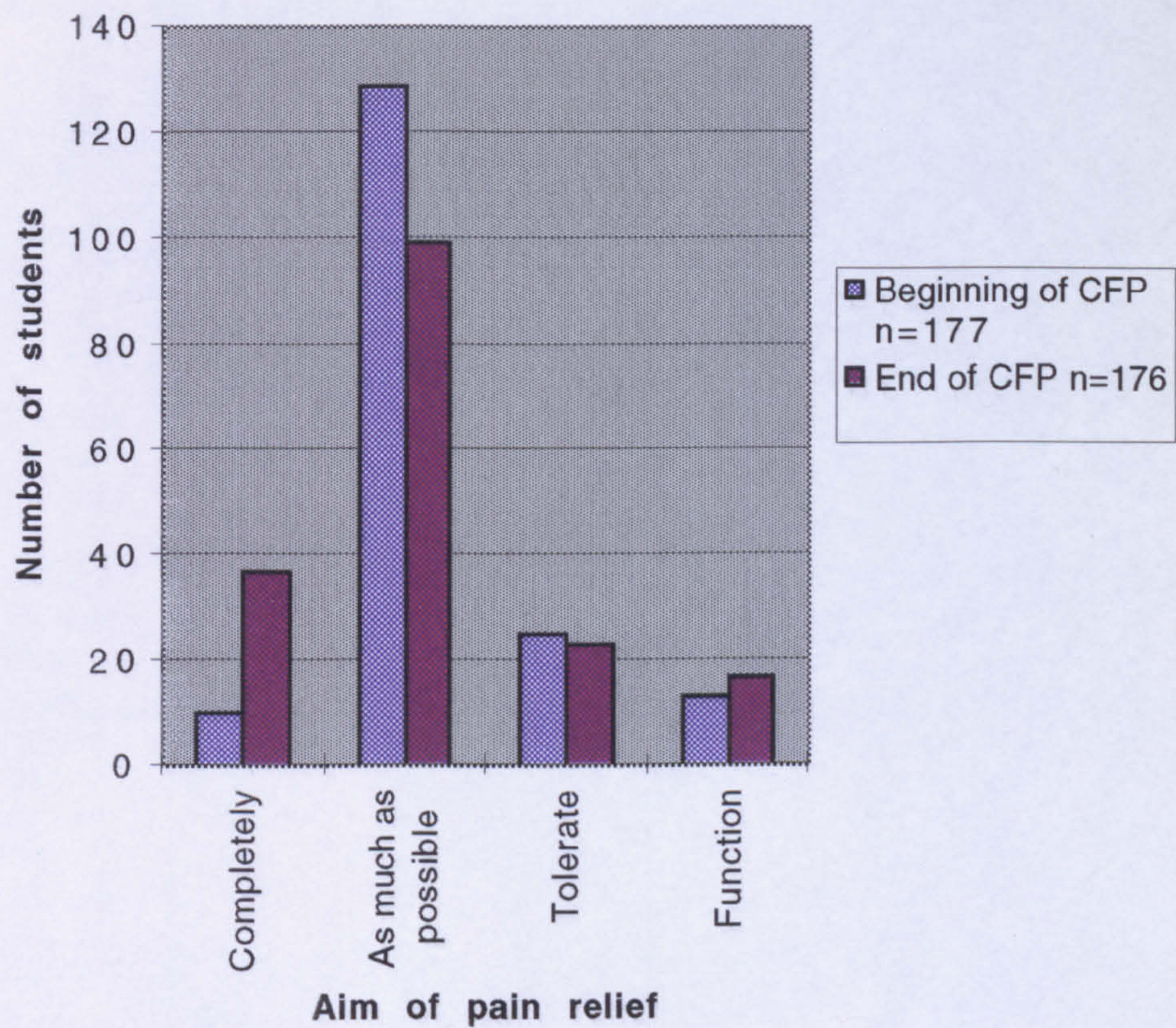
2.3.5(a) Students' views of the aim of pain control

The majority of the students commencing the CFP felt that the aim of pain control was to relieve the pain as much as possible with only 5.7% suggesting the aim was to relieve the pain completely (Table 27). A one sample chi-square test using the values from the first administration as the expected values suggests a highly significant change over the CFP ($\chi^2 = 81.08$, $df = 3$, $p < 0.001$). This change appears to be mainly due to an increase in the number of students suggesting that the aim of pain relief should be to relieve the pain completely, although even after the CFP a considerable proportion of the students still see the aim of pain relief as only to relieve the pain enough to allow the patient to tolerate it or to function (Figure 19).

Table 27 Students’ views of the aim of pain relief

Aim of pain relief	At beginning of the CFP		At end of the CFP	
	Number n = 177 (missing =40)	Percentage	Number n=176 (missing =41)	Percentage
To relieve the pain completely	10	5.7%	37	21%
To relieve the pain as much as possible	129	72.9%	99	56.3%
To relieve the pain enough so that the patient can tolerate it	25	14.1%	23	13%
To relieve the pain enough to allow the patient to function	13	7.3%	17	9.7%
Totals	177	100%	176	100%

Figure 19 Changes in the students' views of the aim of pain control over the CFP



The relationship of students' inferences of pain and psychological distress to the their views of the aim of pain relief at the beginning of the course are illustrated in Tables 28 and 29.

The students' views of the aim of pain relief had no effect on their inferences of pain ($F=1.95$, $df=3$, 130 , $p<0.2$) or psychological distress ($F=0.44$, $df=3$, 135 , $p<0.8$) and their was no interaction between students' views of the aim of pain control and time for inferences of pain ($F=0.25$, $df=3$, 130 , $p<0.9$) or psychological distress ($F=0.79$, $df=3$, 135 , $p<0.6$). Students' views of the aim of pain relief had no effect on their inferences of pain or psychological distress. Students' views of the aim of pain relief also had no effect on the way their inferences changed over the CFP.

Table 28 Pain scores by students' views of the aim of pain relief at the beginning of the course

Aim of pain relief at the beginning of the CFP n = 177 missing = 40	n (missing)	Mean pain score at the beginning of the CFP (Standard deviation)	n (missing)	Mean pain score at the end of the CFP (Standard deviation)
To relieve the pain completely	10(0)	3.2733 (0.3674)	7(3)	3.2929 (0.5888)
To relieve the pain as much as possible	115(14)	3.5929 (0.6482)	106(23)	3.5961 (0.6333)
To relieve the pain enough so that the patient can tolerate it	23(2)	3.5558 (0.6714)	21(4)	3.4452 (0.5605)
To relieve the pain enough to allow the patient to function	12(1)	3.8486 (0.5662)	12(1)	3.7778 (0.4342)
Total	160(17)		146(31)	

Table 29 Psychological distress scores by students' views of the aim of pain relief at the beginning of the course

Aim of pain relief at the beginning of the CFP n = 177 missing = 40	n (missing)	Mean psychological distress score at the beginning of the CFP (Standard deviation)	n (missing)	Mean psychological distress score at the end of the CFP (Standard deviation)
To relieve the pain completely	10(0)	4.3500 (0.8435)	7(3)	4.4024 (0.9986)
To relieve the pain as much as possible	118(11)	4.1567 (0.7320)	106(23)	4.2526 (0.6668)
To relieve the pain enough so that the patient can tolerate it	22(3)	4.3629 (0.7046)	21(4)	4.2103 (0.6347)
To relieve the pain enough to allow the patient to function	13(0)	4.3043 (0.6295)	13(0)	4.4551 (0.5663)
Total	163(14)		147(30)	

As already described the students' views of the aim of pain relief changed significantly over the CFP. The relationship of inferences of pain and psychological distress to the aims of pain relief as described at the end of the CFP are described in Tables 30 and 31.

Table 30 Pain scores by students' views of the aim of pain relief at the end of the CFP

Aim of pain relief at the beginning of the CFP n = 176 missing = 41	n (missing)	Mean pain score at the beginning of the CFP (Standard deviation)	n (missing)	Mean pain score at the end of the CFP (Standard deviation)
To relieve the pain completely	35(2)	3.6110 (0.7020)	36(1)	3.5630 (0.7470)
To relieve the pain as much as possible	90(9)	3.5772 (0.5837)	98(1)	3.5871 (0.6111)
To relieve the pain enough so that the patient can tolerate it	23(0)	3.3870 (0.4930)	23(0)	3.4010 (0.5140)
To relieve the pain enough to allow the patient to function	14(3)	3.603 (0.5840)	17(0)	3.7608 (0.3978)
Total	162(14)		174(2)	

Table 31 Psychological distress scores by students' views of the aim of pain relief at the end of the CFP

Aim of pain relief at the beginning of the CFP n = 176 missing = 41	n (missing)	Mean psychological distress score at the beginning of the CFP	n (missing)	Mean psychological distress score at the end of the CFP
To relieve the pain completely	36(1)	4.2650 (0.8115)	37(0)	4.2890 (0.8120)
To relieve the pain as much as possible	90(9)	4.1284 (0.6749)	99(0)	4.2504 (0.6749)
To relieve the pain enough so that the patient can tolerate it	23(0)	4.1230 (0.5667)	23(0)	4.1170 (0.5670)
To relieve the pain enough to allow the patient to function	16(1)	4.2860 (0.7410)	17(0)	4.5760 (0.7410)
Total	165(11)		176(0)	

Again the students' views of the aim of pain control had no significant effect on inferences of pain ($F=2.21$, $df=3$, 156, $p<0.09$), or psychological distress ($F=1.08$, $df=3$, 161, $p<0.7$) and there were no significant interactions with time in relation to inferences of pain ($df=3$, 161, $F=0.4$, $p=0.754$) or psychological distress ($F=0.61$, $df=3$, 161, $p=0.607$). Thus the students' views of the aim of pain relief at the beginning or the end of the CFP were not significantly related to their inferences of pain or psychological distress or the way these changed over the CFP.

2.3.5(b) Standard of pain relief

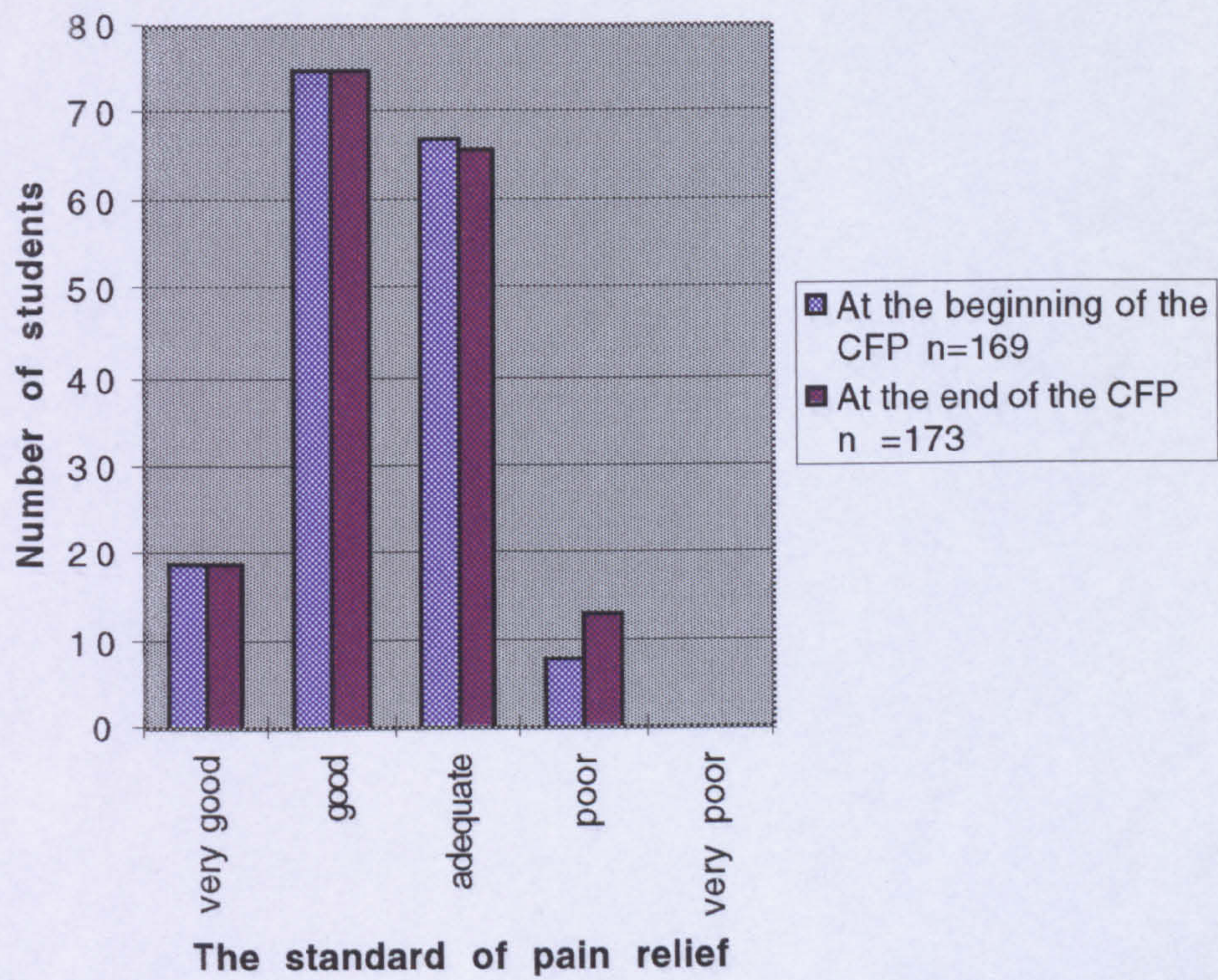
On entering training the students had a fairly good view of the standard of pain relief following surgery. 94 (56%) of students felt that pain relief after surgery is either good or very good (Table 32).

Table 32 Students’ views of the standard of pain relief at the beginning and end of the CFP

	At the beginning of the CFP		At the end of the CFP	
Standard of Pain relief after surgery	Number n=169 (missing =48)	Percentage	Number n=173 (missing =44)	Percentage
very good	19	11.2	19	11.0
good	75	44.4	75	43.4
adequate	67	39.7	66	38.1
poor	8	4.7	13	7.5
very poor	0	0	0	0
Total	169	100	173	100

A one sample chi-square test using the values from the first administration as the expected values suggests that the students’ views of the standard of pain relief did not change over the CFP ($\chi^2 = 3.125$, $df=3$, $p>0.1$) and have therefore not been affected by their experiences in their placements during the CFP (figure 20).

Figure 20 Students' views of the standard of pain control at the beginning and end of the CFP



The relationship of the students' views of the standard of pain relief at the beginning of the course and their inferences of pain and psychological distress are shown in Tables 33 and 34. The categories used in the questionnaire have been collapsed to avoid grossly uneven group sizes.

Table 33 Inferences of pain according to students' views of the standard of pain relief

Standard of pain relief after surgery n= 169 missing= 48	n (missing)	Mean pain score at the beginning of the CFP (Standard deviation)	n (missing)	Mean pain score at the end of the CFP (Standard deviation)
Very good, good	86(8)	3.6099 (0.6196)	77(17)	3.6364 (0.5742)
adequate, poor or very poor	67(8)	3.5642 (0.6867)	62(13)	3.5427 (0.6271)
Total	153(16)		139(30)	

Table 34 Inferences of pain according to students' views of the standard of pain relief

Standard of pain relief after surgery n= 169 missing= 48	n (missing)	Mean psychological distress score at the beginning of the CFP (Standard deviation)	n (missing)	Mean psychological distress score at the end of the CFP (Standard deviation)
Very good, good	91(3)	4.1827 (0.7260)	78(16)	4.2687 (0.5947)
adequate, poor or very poor	65(10)	4.2321 (0.7661)	62(13)	4.2772 (0.7500)
Total	156(13)		140(29)	

Students' views of the standard of pain relief at the beginning of the course showed no significant effect on their inferences of pain ($F=0.32$, $df=1$, 127, $p<0.6$) or psychological distress ($F=0.03$, $df=1$, 131, $p<0.9$). There were no significant

interactions between standard and time in relation to inferences of pain ($F=0.04$, $df=1$, 127, $p<0.9$) or psychological distress ($F=0.11$, $df=1$, 131, $p<0.8$). The students' views of the standard of pain relief do not therefore seem to be related to their inferences of pain or psychological distress or the way inferences change over the CFP.

Students' views of the standard of pain relief at the end of the CFP showed no significant effect on their inferences of pain ($F=0.43$, $df=1$, 157, $p<0.6$) or psychological distress ($F=0.03$, $df=1$, 160, $p<0.9$), and there was no interaction between the students' views of the standard at the end of the CFP and time for pain ($F=1.16$, $df=1$, 157, $p<0.3$) or psychological distress ($F=0.68$, $df=1$, 160, $p<0.5$).

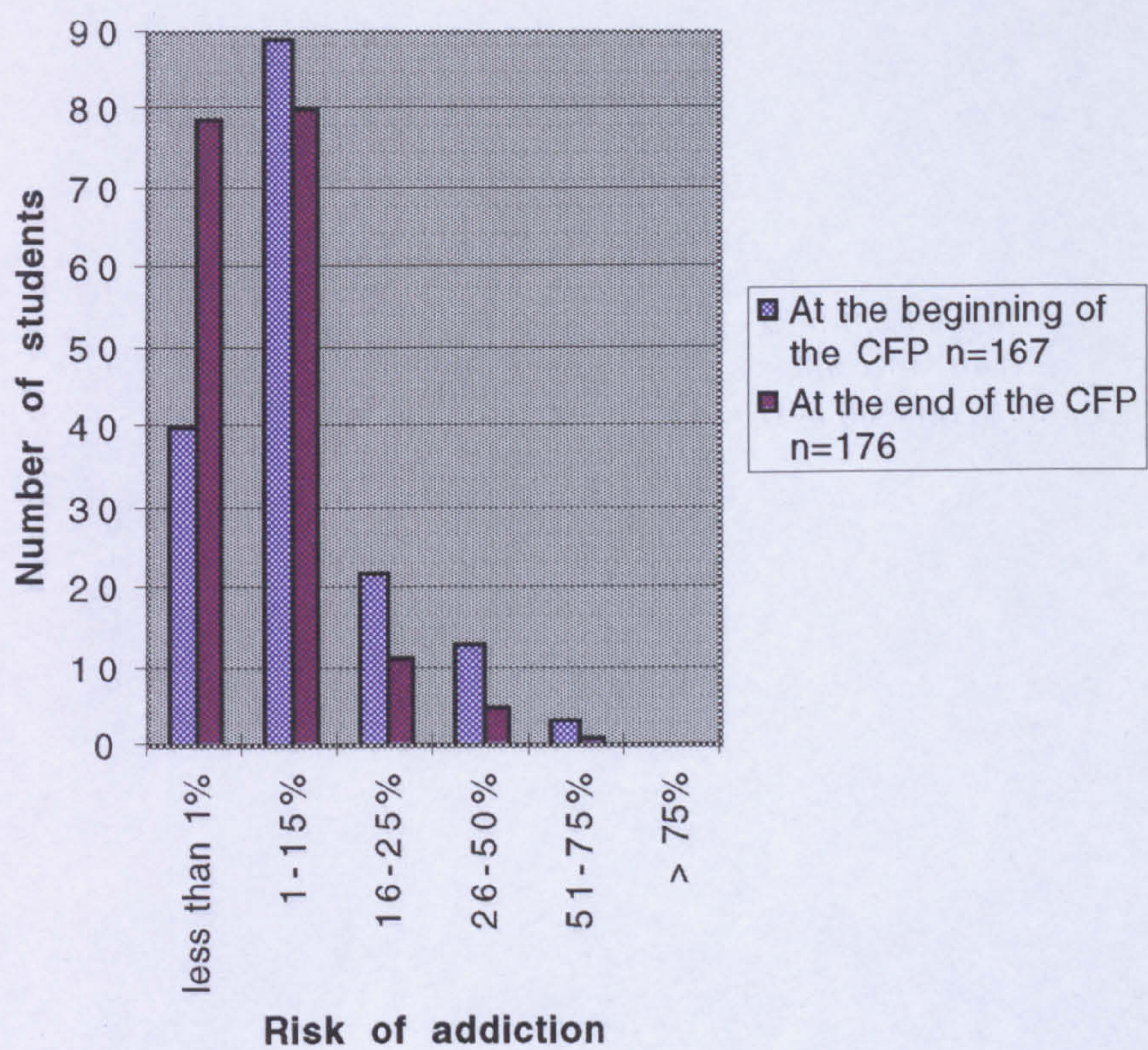
2.3.5(c) Risk of addiction

Students were asked at the beginning and at the end of the CFP to predict the risk of addiction in patients treated postoperatively with narcotic analgesics. At the beginning of the course the students tended to overestimate the risk of addiction with 127 (76%) of students identifying a risk of greater than 1% (Table 35).

Table 35 Risk of addiction

	At the beginning of the CFP n=167 (missing=50)		At the end of the CFP n=176 (missing=41)	
Risk of addiction	Number	Percentage	Number	Percentage
less than 1%	40	23.9	79	44.9
1-15%	89	53.3	80	45.5
16-25%	22	13.2	11	6.3
26-50%	13	7.8	5	2.8
51-75%	3	1.8	1	0.5
> 75%	0	0	0	0
Total	167	100	176	100

Figure 21 Changes in the students' views of the risk of addiction over the CFP



A one sample chi-square test using the results at the beginning of the course as expected values shows that the students' views of the risk of addiction did alter significantly during the CFP ($\chi^2 = 49.8$, $df = 4$, $p < 0.001$). This change is mainly seen in the increase in the number of students correctly identifying the risk of addiction as less than 1%, which illustrates that the educational input that the students received did seem to have an influence (Figure 21). However despite the improvement 55.1% of the students still over estimated the risk of addiction when asked at the end of the CFP.

As with the question on the standard of pain control there was an increase in the number of students answering this question, again this may have been due to the students being unsure of the answer at the beginning of the course and therefore not answering the question. This is supported by the fact that there were 50 students who did not answer the question at the beginning of the CFP but only 2 at the end of the

CFP. The change in the number of students correctly identifying the risk as less than one percent may have therefore been due to those students who were unsure of the answer at the beginning of the course answering correctly rather than students who did answer the question at the beginning of the CFP changing their perceptions of the risk.

As there were very small numbers of students in some of the categories used in this question these were combined to allow analysis of the relationship between the students' views of addiction and their inferences of pain or psychological distress (Table 36 and 37).

Table 36 Mean pain scores by the students' views of the risk of addiction

Risk of Addiction n = 167 missing = 50	n (missing)	Mean pain score at the beginning of the CFP (Standard deviation)	n (missing)	Mean pain score at the end of the CFP (Standard deviation)
less than 1%	33(7)	3.6192 (0.6509)	31(9)	3.6780 (0.5509)
1-15%	82(7)	3.5197 (0.6624)	71(18)	3.4653 (0.5940)
16-25%, 26-50%, 51-75% &>75%	35(3)	3.7340 (0.6510)	33(5)	3.6890 (0.6260)
Total	150(17)		135(32)	

Table 37 Mean psychological distress scores by the students' views of the risk of addiction

Risk of Addiction n = 167 missing =50	n (missing)	Mean psychological distress score at the beginning of the CFP (Standard deviation)	n (missing)	Mean psychological distress score at the end of the CFP (Standard deviation)
less than 1%	34(6)	4.2340 (0.9550)	31(9)	4.2750 (0.7900)
1-15%	82(7)	4.1869 (0.6566)	72(17)	4.1575 (0.6432)
16-25%, 26-50%, 51-75% & > 75%	37(1)	4.2280 (0.6624)	33(5)	4.4838 (0.5023)
Total	153(14)		136(31)	

The students' views on addiction at the beginning of the CFP had no effect on their inferences of pain ($F=1.98$, $df=2$, 160, $p<0.2$) nor was there any interaction with time ($F=0.71$, $df=2$, 160, $p<0.5$). Similarly no effect was seen in relation to inferences of psychological distress ($F=1.23$, $df=2$, 165, $p<0.3$) nor was there any interaction with time ($F=1.44$, $df=2$, 165, $p<0.3$).

The views of the students at the end of the CFP (Table 38 and 39) of the risk of addiction also had no effect on their inferences of pain ($F=1.76$, $df=2$, 157, $p<0.2$) or psychological distress ($F=0.87$, $df=2$, 162, $p<0.5$) and there was no interaction with time in relation to inferences of pain ($F=1.04$, $df=2$, 157, $p<0.4$) or psychological distress ($F=0.09$, $df=2$, 162, $p<1.0$). Thus the students' views of the risk of addiction

were not related to their inferences or the way the students’ inferences changed over the CFP course.

Table 38 Mean pain scores by the students’ views of the risk of addiction at the end of the CFP

Risk of Addiction n = 176 missing = 41	n (missing)	Mean pain score at the beginning of the CFP (Standard deviation)	n (missing)	Mean pain score at the end of the CFP (Standard deviation)
less than 1%	75(4)	3.5613 (0.6115)	78(1)	3.5203 (0.6173)
1-15%	71(9)	3.6254 (0.6267)	79(1)	3.6532 (0.6521)
16-25%, 26-50%, 51-75% &>75%	16(1)	3.3080 (0.4860)	17(0)	3.4690 (0.4330)
Total	162(14)		174(2)	

Table 39 Mean psychological distress scores by the students’ views of the risk of addiction at the end of the CFP

Risk of Addiction n = 176 missing =41	n (missing)	Mean psychological distress score at the beginning of the CFP	n (missing)	Mean psychological distress score at the end of the CFP
less than 1%	75(4)	4.1441 (0.7362)	79(0)	4.2685 (0.6999)
1-15%	73(7)	4.2266 (0.6528)	80(0)	4.2940 (0.6561)
16-25%, 26-50%, 51-75% & > 75%	17(0)	3.9890 (0.6920)	17(0)	4.1800 (0.6330)
Total	165(11)		176(0)	

Chapter 3 Study Two

3.1 Introduction

The main aim of this study was to explore the relationship between nurses' inferences of pain and their assessment of patients' pain. This relationship is intended as a measure of the criterion related validity of the SMIS questionnaire. If inferences of pain and psychological distress as measured by the SMIS are a predictor of the tendency of nurses to over or underestimate patients' pain this would represent support for the criterion related validity of the SMIS. Polit and Hungler (1991) suggest the criterion related approach to validity is a pragmatic one in which the researcher attempting to establish the criterion-related validity of an instrument is not seeking to ascertain how well a tool is measuring a theoretical trait but is trying to establish the relationship between the instrument and another criteria. The aim in relation to the SMIS is to ascertain the clinical implications of any changes in the inferences measured by the SMIS in study one. The null hypothesis is therefore that there is no significant difference between high and low rating nurses as measured by the SMIS and their tendency to over or underestimate patients' pain intensity.

A secondary aim of this study was to identify factors that influenced the nurses' inferences of pain and psychological distress and to compare the inferences of pain and psychological distress with those of the students surveyed in study one.

3.2 Methods

To assess the relationship between nurses' assessment of their patients' pain and their inferences of suffering nurses working in surgical wards in one teaching hospital were asked to complete the modified SMIS questionnaire. In the second part of this study a sample of nurses who had high and low mean pain scores were then selected and comparisons of the nurses' estimate of patients' pain and the patients' estimate of their

pain were collected. Each nurse was asked to rate 5 patients' pain before the patient was asked to rate their own pain.

3.2.1 Sample

Questionnaires were sent to all trained staff on the surgical wards of a large teaching hospital and the nurses' were ranked according to their mean pain scores. The nurses with the ten highest and ten lowest mean pain scores were selected for inclusion in the assessment of the relationship between inferences and the nurses' assessment of the patients' pain. The 20 nurses selected were approached and the next stage of the research was explained and their agreement was obtained. It should be noted that this sample was not selected to be representative of all the surgical nurses.

3.2.2 Data collection

As well as the questions on the adapted SMIS questionnaire a number of other questions were included (see Appendix 4). These questions related to the nurses' qualifications, age, number of years experience and country of origin. These factors have all been suggested as having a possible effect on nurses' inferences (Davitz, Davitz and Higuchi 1977; Mason 1981). Questions relating to the nurses' views on the aim and standard of pain relief and the risk of addiction were also included in order to assess any relationship that these factors had to the nurses' inferences of suffering.

A number of studies have looked at nurses' knowledge relating to pain relief and some studies have suggested that improving nurses' knowledge can improve pain relief (Sofaer 1984). In order to assess the effects of different levels of knowledge on inferences of pain the Self Administered Questionnaire (Sofaer 1984) was included in the questionnaire used for this study with the permission of the author (Appendix 5). The self administered questionnaire consists of twelve statements that relate to a number of aspects of pain. The respondent marks the statements as true, false or don't know and therefore the respondent can achieve a score in the range of 0 to 12.

Question 2 of this questionnaire was slightly modified. In Sofaer's study this read: "Narcotic analgesics such as morphine are usually the only effective drug to combat severe pain." This could be slightly misleading as some types of pain, such as neurogenic or bone pain, may not respond to narcotic analgesics and therefore pain is referred to as opiate or non-opiate responsive (Latham 1991). Thus the question asked by Sofaer could be misleading if the respondent thinks of non-opiate responsive pain. The question was therefore adapted to refer specifically to opiate responsive pain.

The nurses' and patients' pain assessment were compared using a visual analogue scale (VAS). A number of studies have looked at different types of pain assessment (McGuire 1984). As discussed in the literature review pain is a multi-dimensional phenomenon and the best assessment of pain takes this into account. The pain assessment designed for this study can be criticised on the basis that it only assesses pain intensity. It was felt that this was justifiable for a number of reasons. The design of the study required nurses to perform an assessment at short notice as part of their normal work. It was therefore important to use an assessment tool that could be administered quickly and with the least disturbance to the nurses. Similarly it was important to minimise the disruption to the patients as they were all recovering from very recent surgery. It was therefore inappropriate to use a more detailed multidimensional tool. Chapman, Casey and Dubner (1985) in a discussion of a range of assessment techniques suggests that "The efficiency and simplicity of VAS are important in clinical research. The VAS places minimal demand on sick patients, and poorly educated patients can usually grasp the nature of the scale with little difficulty" (pg.20).

It has been suggested that there may be less discrimination in pain language of patients in acute pain (Reading 1984). Pain sensation and distress scores have been shown to be highly correlated when given together and high correlation's between VAS and the

multidimensional McGill Pain Questionnaire has also been found (Taenzer 1983). Seers (1987a) suggested that verbal descriptor scales are easier to understand and complete although arguably less sensitive than a visual analogue scale. This is an important consideration for this study as comparisons between the patients' and nurses' ratings were central. Joyce, Zutish, Hrubes and Mason (1975) suggested that the VAS is more sensitive, just as valid, and it may be more reliable than verbal descriptor scales.

Sriwatanakul, Kelvie, Lasagna, Calimlim, Weis and Mehta (1983) compared several different VAS and several different expressions for the extreme end of the scale. The term agonising was preferred by the majority of participants. In comparing the different scales Sriwatanakul et al. (1983, pg.238) suggested that, "The linear horizontal scale may be the best of the five scales." This type of scale was therefore selected for this study and two data collection sheets were designed, one for the staff and one for the patients (see Appendix 6&7). The tools were piloted with two nurses, who had answered the SMIS questionnaire but were not included in the 20 nurses selected on the basis of their scores, and ten patients for whom they were caring. The basic design worked well with the two nurses used to pilot the scales completing scores for five patients each. All the patient scores were collected within 5 minutes of the nurses' rating. Minor modifications were made to the scale as marking the graduations on one side of the scale seemed to result in the respondents making the marks below the line rather than on it. The divisions were therefore extended equally above and below the line (see Appendix 8&9).

3.2.3 Ethical approval

An outline of this study was submitted to the hospital's ethics committee and approval for the study was obtained (see Appendix 10).

3.2.4 Procedure

Ethical committee approval was obtained before the nurses were approached. Initially permission for the study was obtained from the nurse manager for the surgical wards. The researcher attended a ward sisters' meeting in order to explain the purpose of the research and to obtain their permission to approach their staff. It was hoped that personal contact would help to increase the return rate.

Having obtained the co-operation of the sister/charge nurses from all six of the wards the staff were sent individually addressed questionnaires and an explanatory letter (see Appendix 11). The staff were also given an envelope in which to return the questionnaires through the internal post. After eight weeks a follow up letter to remind respondents was sent (see Appendix 12).

Following collection and analysis of the questionnaire the nurses were selected for the second part of the study. The pain assessments were carried out when the researcher was able to attend the wards and the nurses were on duty. Each nurse was approached without prior warning and asked to identify any patients for whom they were caring. Patients were selected on the basis that they were being cared for by the nurses surveyed and were one to three days post operation and, in the nurses' opinion, were fit enough to participate in the research. The nurses were all told that they could decline to participate on any occasion that was not convenient.

Within five minutes of the nurse completing the visual analogue scale the patient was also asked to participate in the research. The patient was given a standard introduction to the researcher and the research (see Appendix 13) and their verbal consent obtained.

If the patient agreed to participate they were asked to complete a pain assessment. It is important that the assessments are recorded within a short period of time to reduce the possibility of differences caused by variation in the patients' pain. The nature of the operation and the time of the nurses' and patients' pain assessment were also recorded.

Initially it had been envisaged that the data collection on the wards would take approximately six months in fact data collection took almost 15 months. This delay was caused by a number of factors. Once the data from the questionnaires had been entered and analysed the nurses were contacted in February 1994 and the data collection commenced. Identifying times when the staff were on duty, they were caring for patients who could be included in the study and when the researcher was available to collect the data proved to be very difficult.

Particular difficulties were encountered with two ward areas. One area was a short stay surgical ward with an admission unit through which staff rotated. Inpatient stays in this ward were very short, patients often being discharged in the mornings before the researcher was able to get to the ward. In the summer of 1994 a major reorganisation on one ward meant that the ward became a mixed surgical and haematology ward. The number of operations carried out on this ward was considerably reduced and staff were involved in the care of the haematology patients and therefore unable to take part in the survey.

Because of the delay in collecting the five patients' pain scores for each nurse a number of staff left during the data collection period. In the early stages of the data collection these staff were replaced by the nurse next in the ranking of their mean pain score. This inevitably resulted in a further delay in collecting the data. The delay in the data collection from the clinical areas meant that for some of the nurses, these data were being collected some 20 months after the staff had completed the questionnaire. It is

therefore possible that there had been changes in the staff nurses' inferences between the administration of the questionnaire and the collection of the ward based data.

3.3 Results of Study 2

94 staff working on surgical ward areas were surveyed using the modified SMIS questionnaire (Appendix 14). The questionnaires were distributed and individually addressed to the staff on the 6 surgical wards. 51 were returned, a return rate of 54%. This poor return rate despite follow up letters needs to be borne in mind when interpreting these results.

3.3.1 Wards

Six wards were surveyed, the return rates from the different wards are shown in figure 22. Although the return rates vary, with ward 4 having a particularly low return, the differences in return rates are not significant ($\chi^2=3.010$, $df=5$, $p<0.1$).

Table 40 displays the mean inferences of pain and psychological distress as measured on the SMIS questionnaire of the nurses from different wards. A one way analysis of variance showed that there were no significant differences in the inferences of pain ($F=1.70$, $df=5$, 45 , $p<0.2$) or psychological distress scores ($F=0.74$, $df=5$, 45 , $p<0.6$) of the nurses from the different wards which justifies combining the nurses' inferences from the different wards. The experiences of nurses caring for patients undergoing different types of surgery does not seem to be an influencing factor on their inferences.

Figure 22 Return rates from different wards

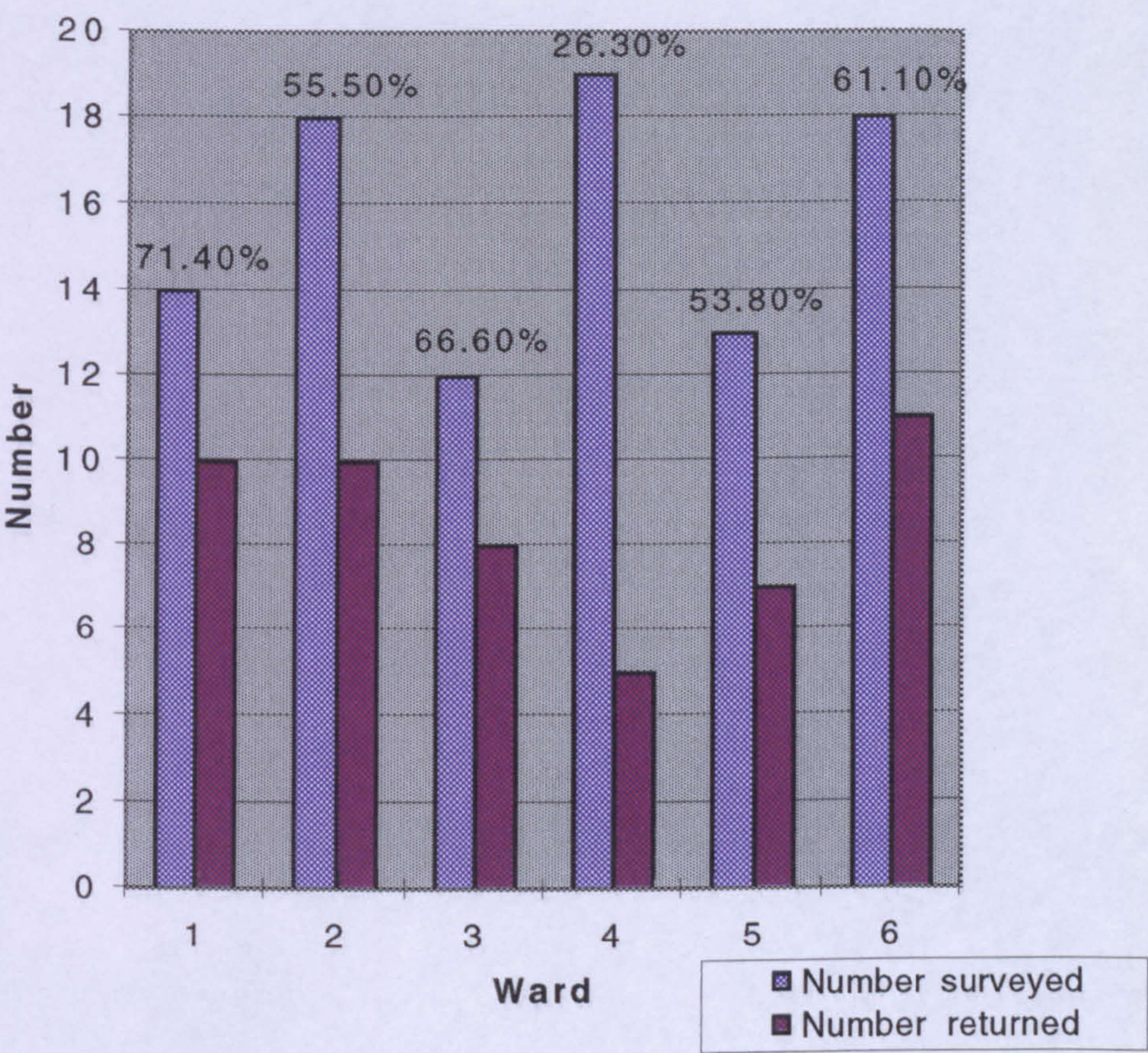


Table 40 Pain and psychological distress scores by ward

Ward	number (missing)	Mean pain rating (Standard deviation)	number (missing)	Mean psychological distress rating (Standard deviation)
1	10(0)	3.7213 (0.4301)	10(0)	4.8607 (0.4740)
2	10(0)	3.3400 (0.5989)	10(0)	4.4550 (0.9928)
3	8(0)	3.4521 (0.8072)	8(0)	4.3760 (0.8103)
4	5(0)	3.3067 (0.7262)	5(0)	4.2167 (0.5846)
5	7(0)	2.9214 (0.2704)	7(0)	4.2286 (0.7094)
6	11(0)	3.5621 (0.6262)	11(0)	4.4924 (0.9276)
Total	51(0)		51(0)	

3.3.2 Inferences of pain and psychological distress

The nurses on the wards rated the psychological distress and pain associated with the same sixty patient scenarios used in the student questionnaire. The results are shown in Table 41. Although the histogram of inferences of pain (figure 23) does not appear symmetrical the mean (3.41) and median (3.33) were sufficiently close to approximate a normal distribution. The psychological distress scores follow a normal distribution (figure 24).

Table 41 Nurses’ mean pain and psychological distress scores

	Mean pain score (Standard deviation.)	Mean psychological distress score (Standard deviation.)	t & p value
All cases	3.4195 (0.6153)	4.4758 (0.7850)	-11.07 p< 0.0001
Adult cases	3.3652 (0.6024)	4.4554 (0.7813)	-10.68 p< 0.0001
Child cases	3.5589 (0.6570)	4.5971 (1.2786)	-6.06 p< 0.0001
Elderly cases	3.3348 (0.6024)	4.3755 (0.7833)	-12.63 p< 0.0001
Male cases	3.4114 (0.6395)	4.4527 (0.8412)	-9.45 p< 0.0001
Female cases	3.4278 (0.6101)	4.4989 (0.8332)	-10.69 p< 0.0001

Figure 23 Mean inferences of pain

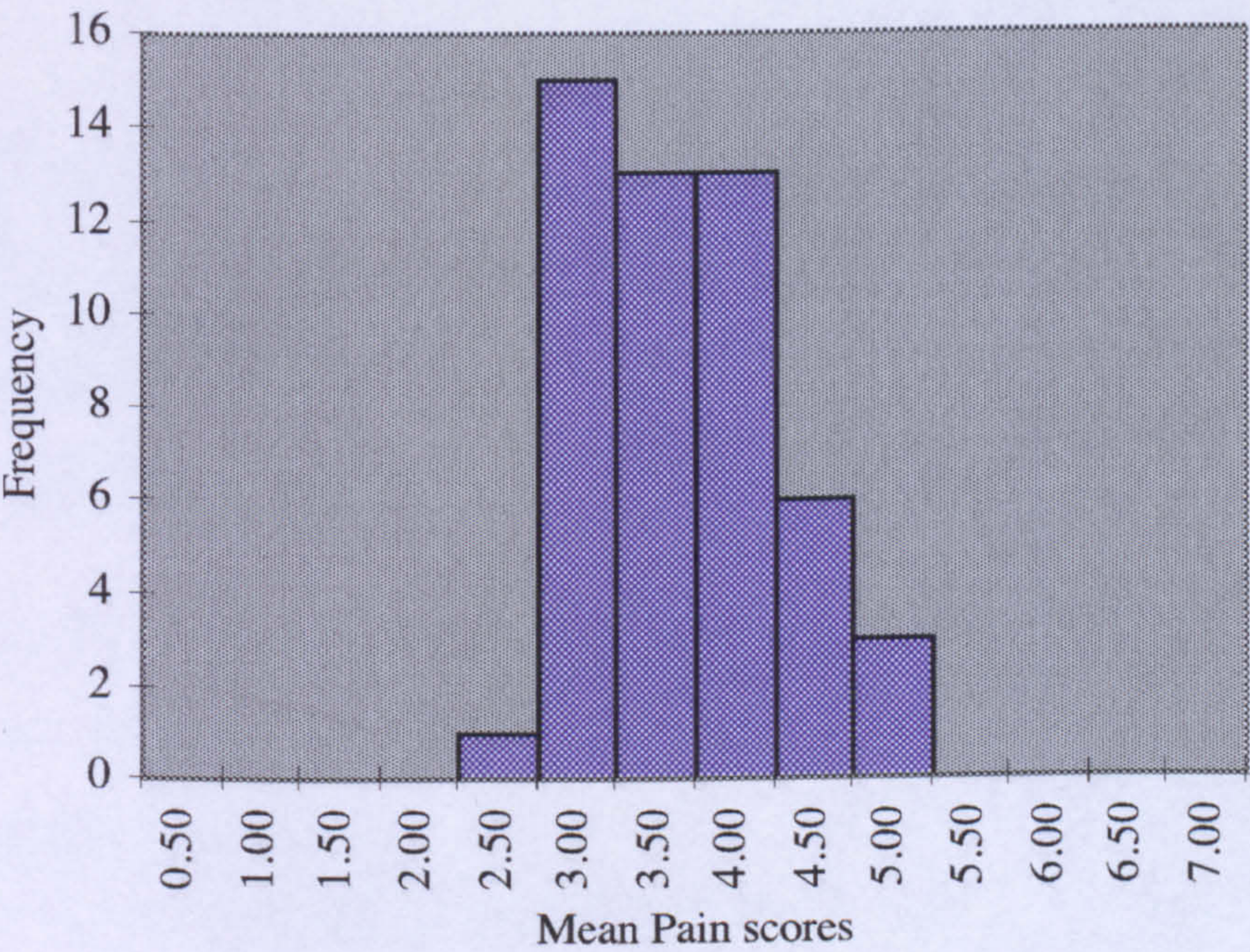
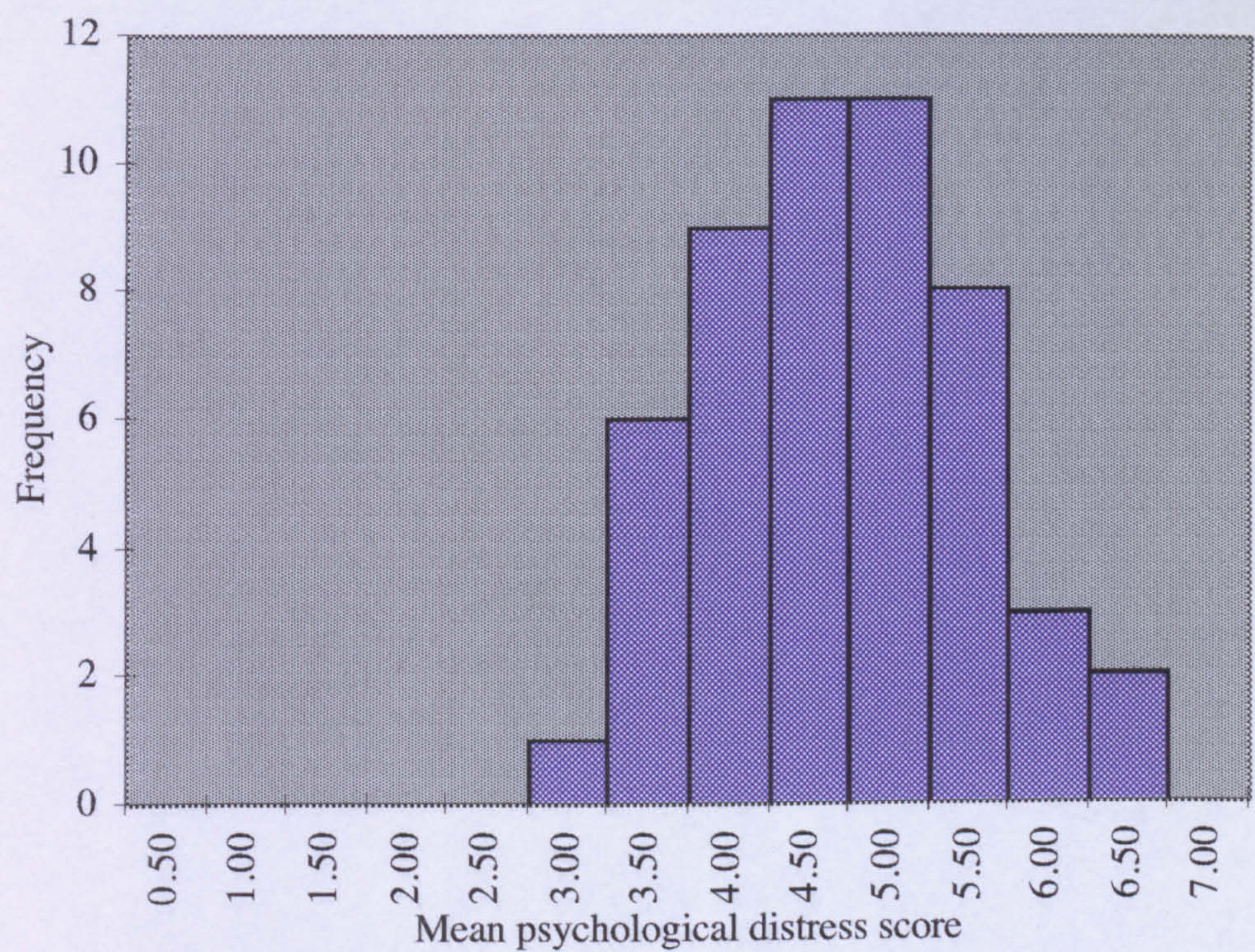


Figure 24 Mean inferences of psychological distress



The pain and psychological distress scores had a Pearson product moment correlation of $r = 0.549$ ($df=50$, $p < 0.001$). This is similar to the correlation found with the students' ratings as well as previous research (Davitz and Davitz 1981). The pain and psychological distress scores are however significantly different ($t = -11.07$, $df=50$, $p < 0.0001$) showing that the nurses perceived the two factors as different. This was consistent for all age groups and for male and female scenarios (figure 25).

Comparing the mean inferences of pain and psychological distress of the nurses and students (Table 42) shows that although there are no significant differences in the pain scores of nurses and the students at the beginning ($t = 1.71$, $df=80$, $p < 0.1$) or the end of the CFP ($t = -1.67$, $df=81$, $p < 0.1$) or in the psychological distress scores at the end of training ($t = -1.65$, $df=72$, $p < 0.10$), there is a difference between the psychological distress scores of the nurses and the students when they commence nurse training ($t = -2.36$, $df=72$, $p < 0.022$). The students infer lower levels of psychological distress on commencing the course but by the end of the CFP, this difference has decreased as

the students' inferences of psychological distress increase over the course bringing them closer to the nurses' inferences.

Figure 25 Relationship of pain and psychological distress scores across all cases

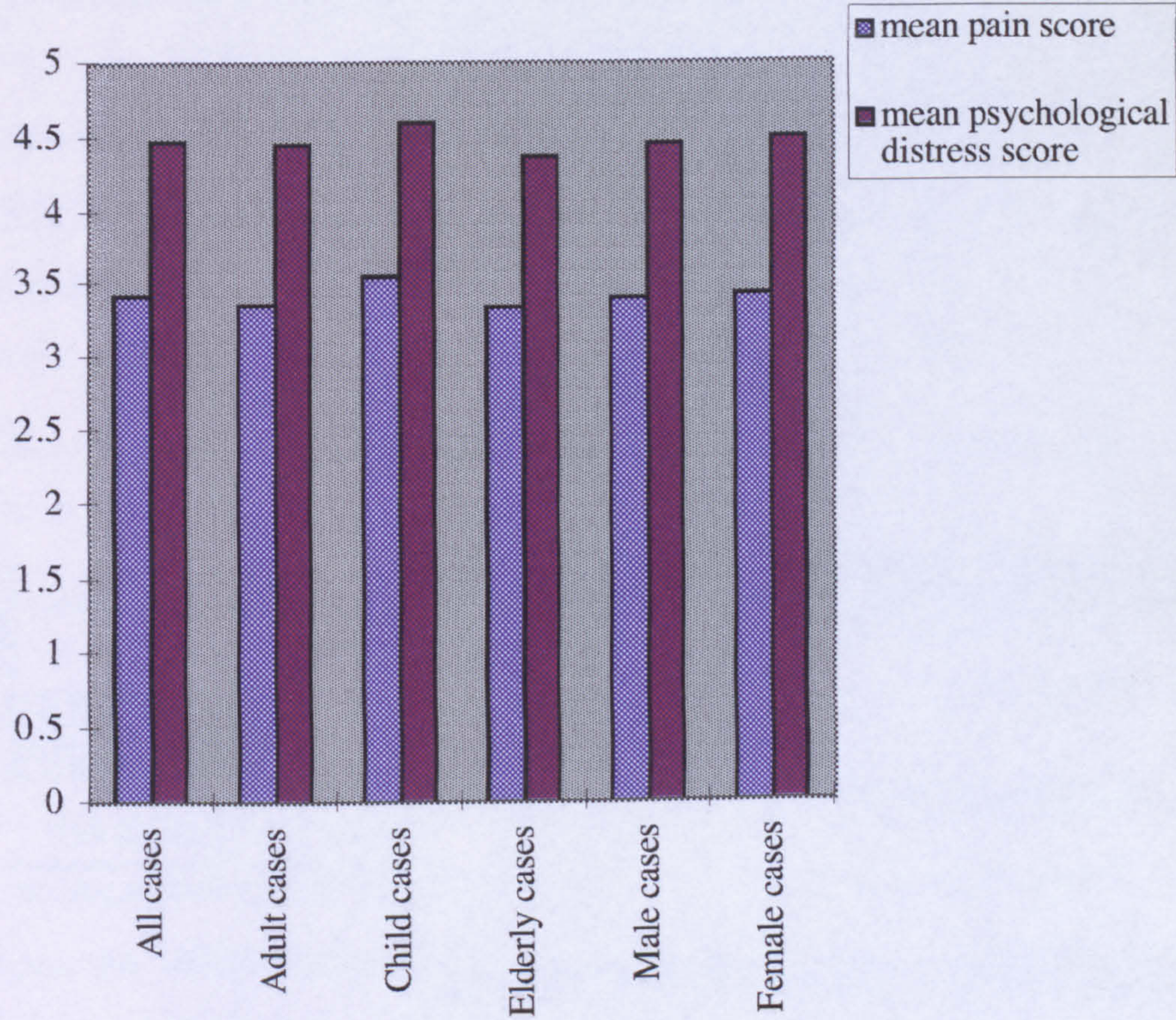


Table 42 Relationship of students’ and nurses’ pain scores

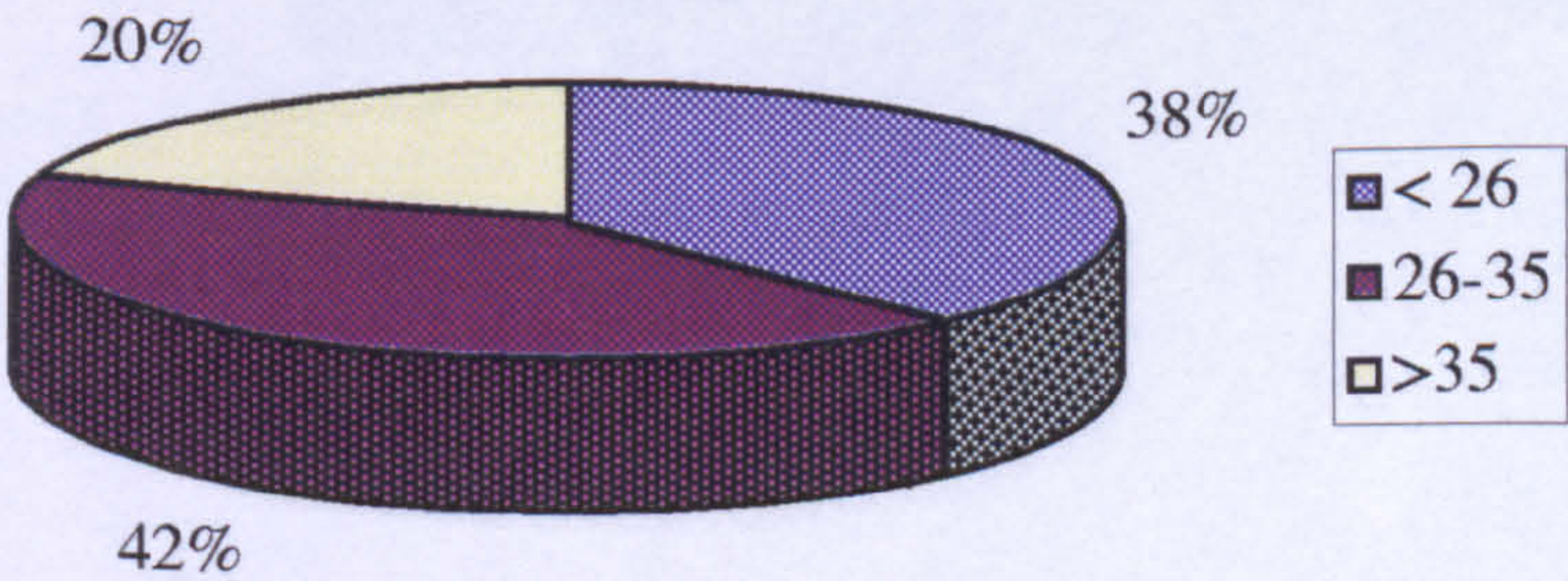
	n (missing)	Mean pain scores (Standard Deviation)	n (missing)	Mean psychological distress scores (Standard Deviation)
Students at the beginning of CFP	193 (24)	3.598 (0.635)	197 (20)	4.191 (0.706)
Students at the end of the CFP	177(1)	3.583 (0.619)	178 (0)	4.276 (0.673)
Nurses	51(0)	3.420 (0.615)	51(0)	4.476 (0.785)

3.3.2(a) Age

The ages of the staff surveyed are indicated in figure 26, and the nurses’ inferences according to their age are shown in Table 43.

Figure 26 Distribution of nurses by age

n= 50, missing=1



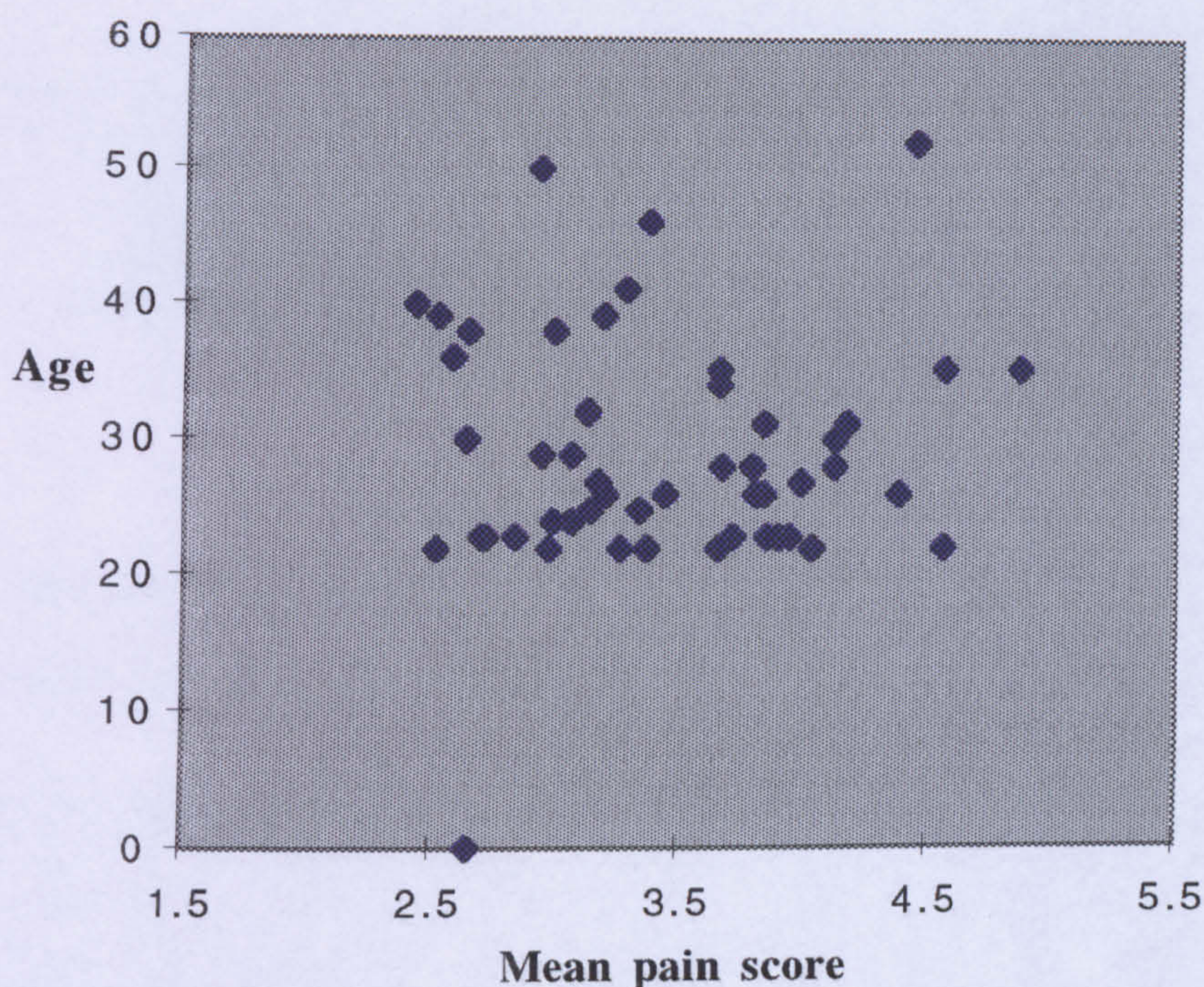
Although there was no significant relationship between the nurses’ age and their inferences of psychological distress ($F=1.10$, $df=2, 47$, $p< 0.4$) there was a significant effect on inferences of pain ($F=5.39$, $df=2, 47$, $p< 0.008$).

Table 43 Nurses’ mean pain and psychological distress scores by age

Age n= 50 missing =1	n	Mean pain scores (Standard deviation)	Mean psychological distress score (Standard deviation)
< 26	19 38%	3.342 (0.547)	4.344 (0.764)
26-35	21 42 %	3.712 (0.563)	4.669 (0.767)
> 35	10 20 %	3.030 0.594	4.251 (0.893)

Although analysis of variance showed that the nurses’ age had a significant effect on their inferences of pain, examination of the mean scores (Table 43) shows no consistent relationship with increasing or decreasing age. This is supported by the scatter plot of inferences of pain (figure 27) and the lack of a significant correlation between age and inference of pain (Pearson’s $r = -0.0451$, $df=50$, $p< 0.8$).

Figure 27 Relationship of nurses' age and inferences of pain
n= 50



Although the age profile of the nurses is older than that of the students, age did not seem to be an important factor in relation to inferences of suffering for the nurses, a similar finding to that for the students.

3.3.2(b) Experience of illness

As may be expected from the older age profile of the nurses compared to the students, 33 (65%) of nurses reported having experienced a painful illness or having had an operation while 18 (35%) had not had such an experience (figure 28). The relationship of the nurses' inferences to their experience of illness is shown in Table 44.

Figure 28 Nurses who had or had not experienced a painful illness
n=51

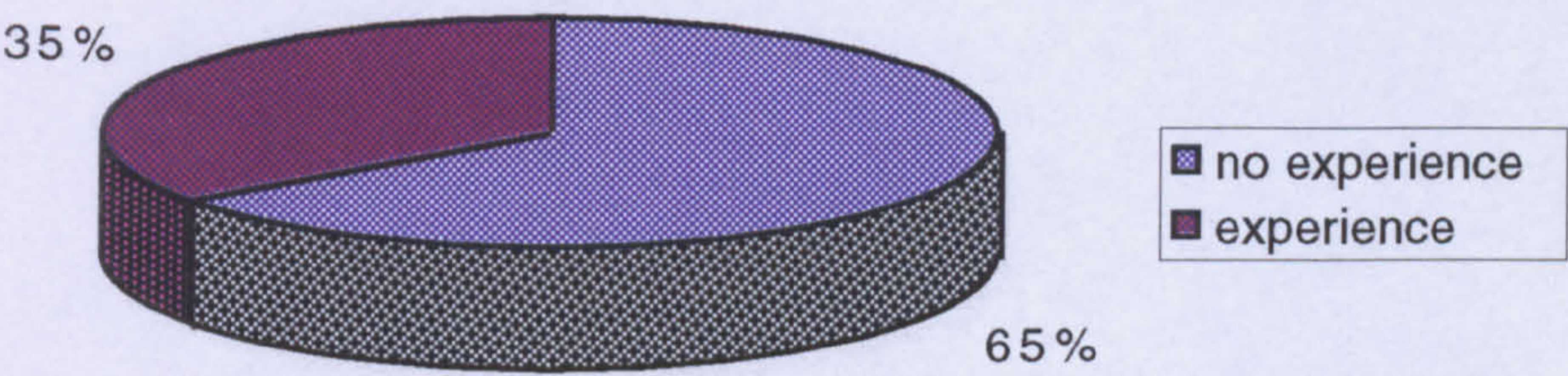


Table 44 The effect on inferences of pain and psychological distress of experience of a previous illness

Experience of a painful illness n=51	n (missing)	Mean pain score (Standard deviation)	Mean psychological distress score (Standard deviation)
No experience	18(0)	3.389 (0.699)	4.182 (0.667)
Experience	33(0)	3.436 (0.575)	4.636 (0.807)

A t test shows that nurses who have had a painful illness inferred significantly higher psychological distress ($t = -2.15, df=41, p< 0.04$) although there was no relationship with the nurses' inferences of pain ($t= -0.25, df=29 p<0.9$). A painful illness therefore seems to be related to higher inferences of suffering, perhaps personal experience engendering a more sympathetic response.

3.3.2(c) Qualifications and Length of experience

94% of the respondents had one qualification. The majority of these were either RGN or SRN (figure 29).

Figure 29 Nurses’ qualifications

n=48 (missing =3)

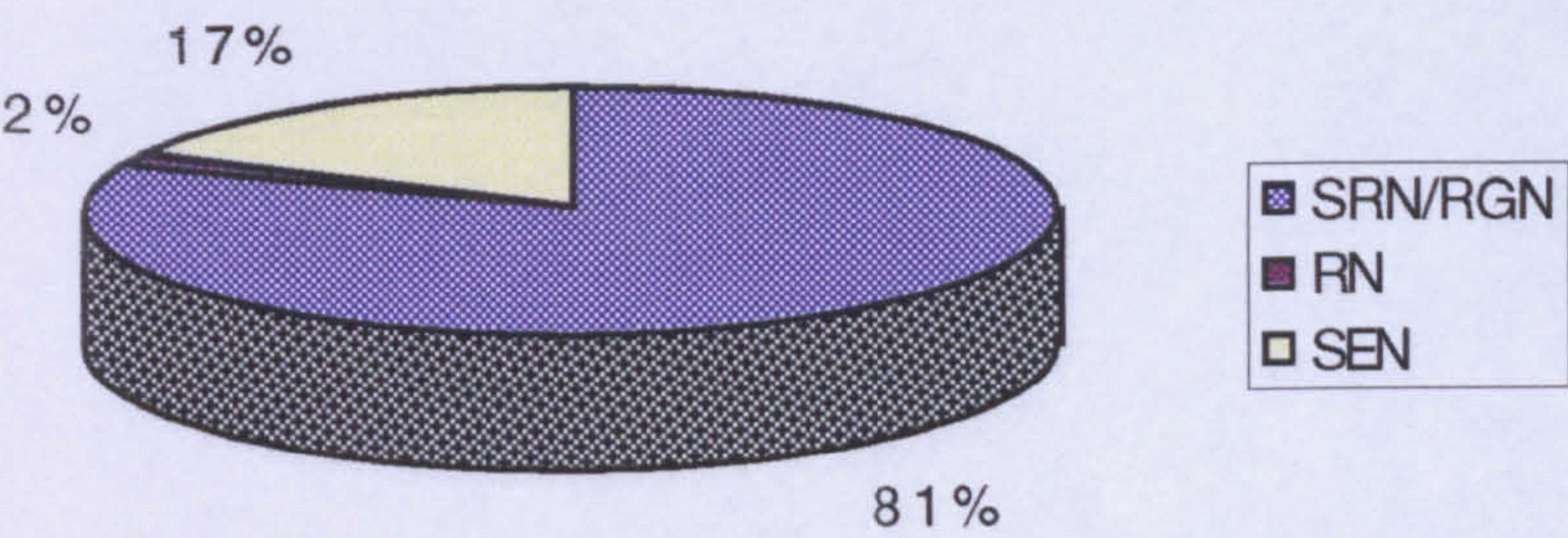


Table 45 Mean pain and psychological distress scores by staff qualifications

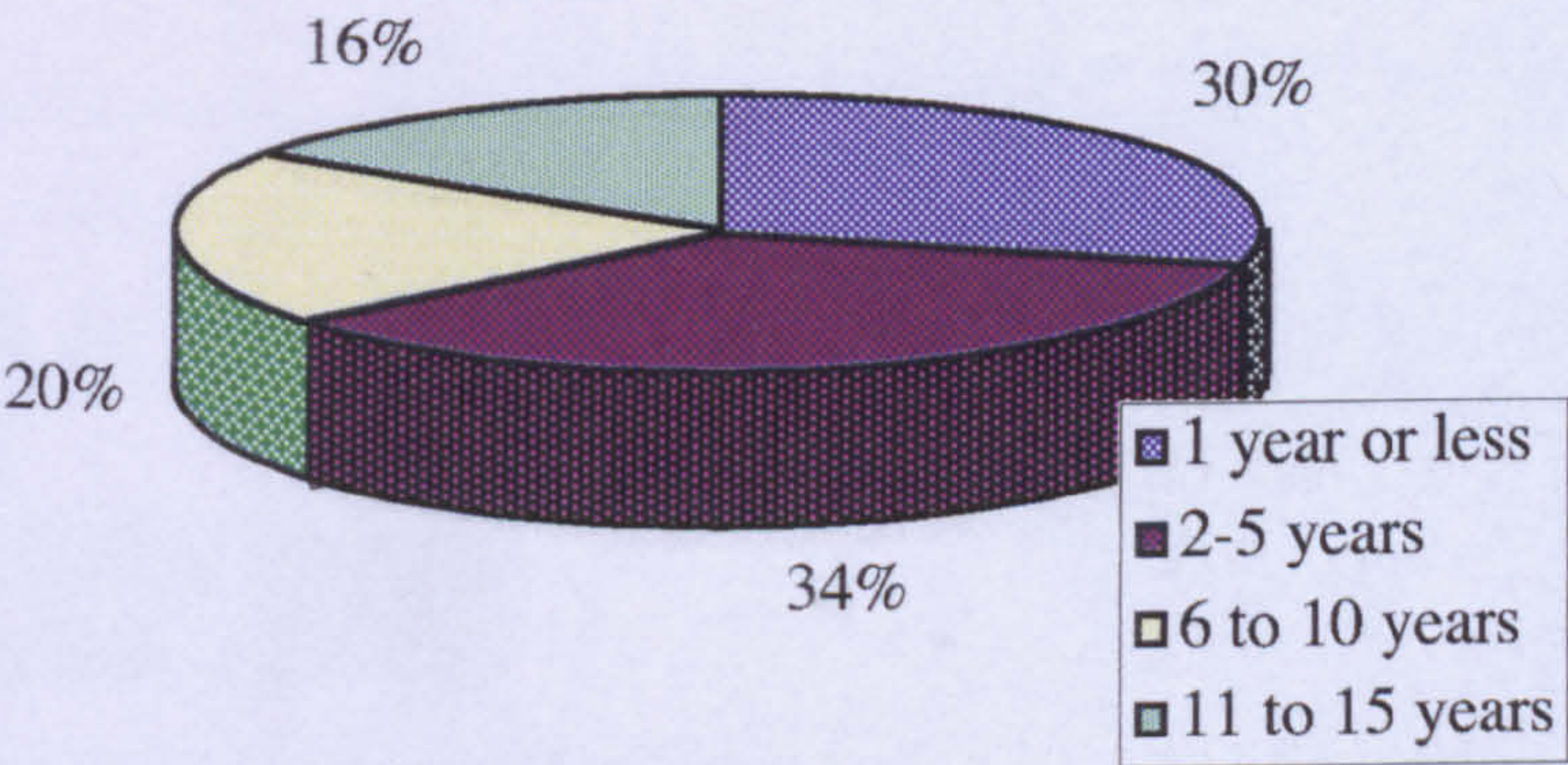
Qualification	n	Mean pain scores (standard deviation)	Mean psychological distress score (Standard deviation)
n= 48 missing =3			
SRN, RGN, RN	40 83.3 %	3.392 (0.613)	4.451 (0.746)
SEN	8 16.7 %	3.446 (0.675)	4.46 (1.01)
Total	48 100 %		

Three respondents reported second qualifications and one respondent had two other qualifications. These included Registered mental nurse, State certified midwife and Ophthalmic nursing diploma qualifications.

Comparing the mean pain and psychological distress scores of those giving their first qualification as either RGN, RN, or SRN and those giving their qualifications as SEN (Table 45) showed that there was no difference between the nurses' inferences of pain ($t=-0.21$, $df=9$, $p<0.9$) or psychological distress ($t=-0.03$, $df=8$, $p<1.0$). Although this is a limited analysis, on the basis of these results nurses' qualifications do not appear to influence their inferences of pain or psychological distress.

The length of nursing experience since registration of the subjects is shown in figure 30, 30% of the staff had less than a year of post registration experience.

Figure 30 Length of experience since registration
(n=50 missing =1)



As can be seen in Table 46 there was no relationship between the length of experience since registration and inferences of pain or psychological distress ($F= 0.85$, $df=3$, 46 , $p<0.5$; $F= 1.02$, $df=3$, 46 , $p< 0.4$). Exposure to patients' suffering over a long time did not therefore seem to influence nurses' inferences of pain or psychological distress.

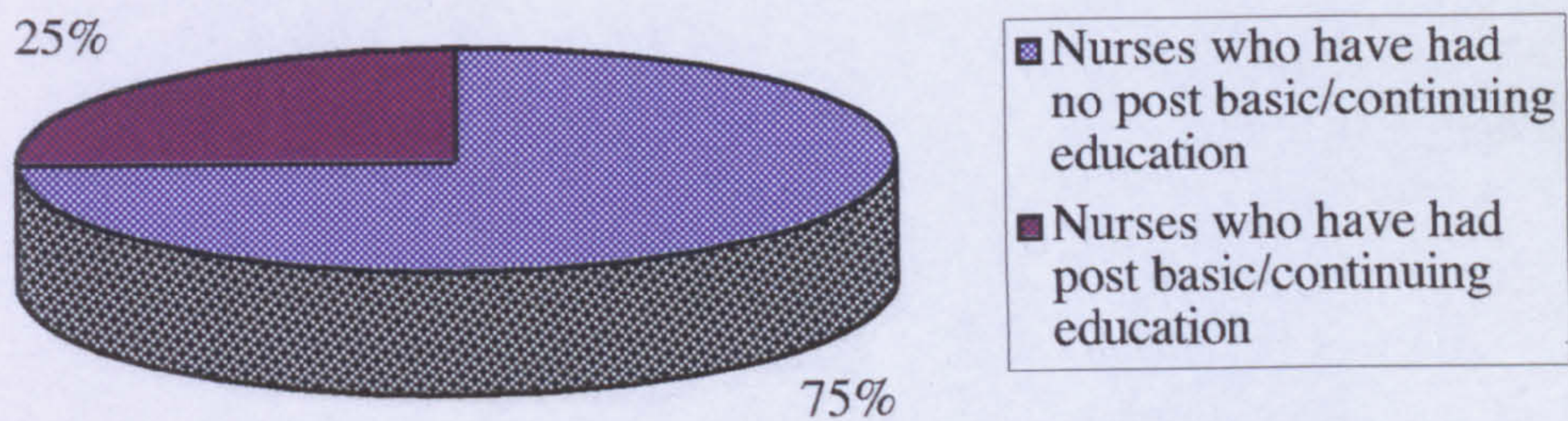
Table 46 Nurses inferences of pain and psychological distress according to length of nursing experience

Years of experience n=50 (missing=1)	n (missing)	Mean pain score (standard deviation)	Mean psychological distress score (standard deviation)
1 year or less	13	3.432 (0.729)	4.446 (0.866)
2-5 years	15	3.618 (0.450)	4.760 (0.780)
6 to 10 years	9	3.374 (0.669)	4.328 (0.865)
11 or more years	13	3.249 (0.638)	4.281 (0.670)
total	50(0)		

3.3.2(d) Post-basic education

The majority of the staff had not attended any post basic or continuing education relating to pain (Figure 31).

Figure 31 Nurses’ post basic education relating to pain
n=51



Those who had experienced further education relating to pain reported attending a range of different courses. The courses that were attended mainly covered pain control relating to palliative care or instruction in pain relief techniques (Table 47).

Table 47 Courses attended

Course	Number of students attended
n = 13	
ENB “care of the dying course”	2
Stoma care course. one day on palliative care with Macmillan nurses	2
Study day on pain and symptom control at local continuing care unit.	3
PCA machine	3
Entonox study day	2
730 City & guilds	1

Post-basic education (Table 48) did not have a significant relationship with the nurses' inferences of pain ($t = -0.32$, $df=21$, $p<0.8$) or psychological distress ($t = -0.12$, $df=21$, $p< 1.0$).

Table 48 Relationship of experience of post basic education to nurses' mean pain and psychological distress scores

Post basic education n=51 missing =0	number (missing)	Mean pain score (Standard deviation)	Mean psychological distress score (Standard deviation)
no education	38(0)	3.403 (0.624)	4.469 (0.812)
education	13(0)	3.467 (0.611)	4.497 (0.732)
	50(0)		

3.3.2(e) Country of origin

Only one nurse gave a country of origin outside the United Kingdom, it was therefore not possible to identify any influence that cultural background may have had on inferences of suffering.

3.3.3 Nurses' views relating to pain

3.3.3(a) Nurses' views of the standard of pain relief

Both at the beginning and end of the CFP the students were more likely than the nurses to consider the standard of pain relief to be good or very good. However only at the end of the course did this reach significance ($\chi^2 = 7.83$, $df=3$, $0.02<p< 0.05$) while at the beginning of the course the difference did not reach significance ($\chi^2 = 7.206$, $df=3$, $p>0.05$).

Figure 32 Nurses' views of the standard of pain relief
n=51

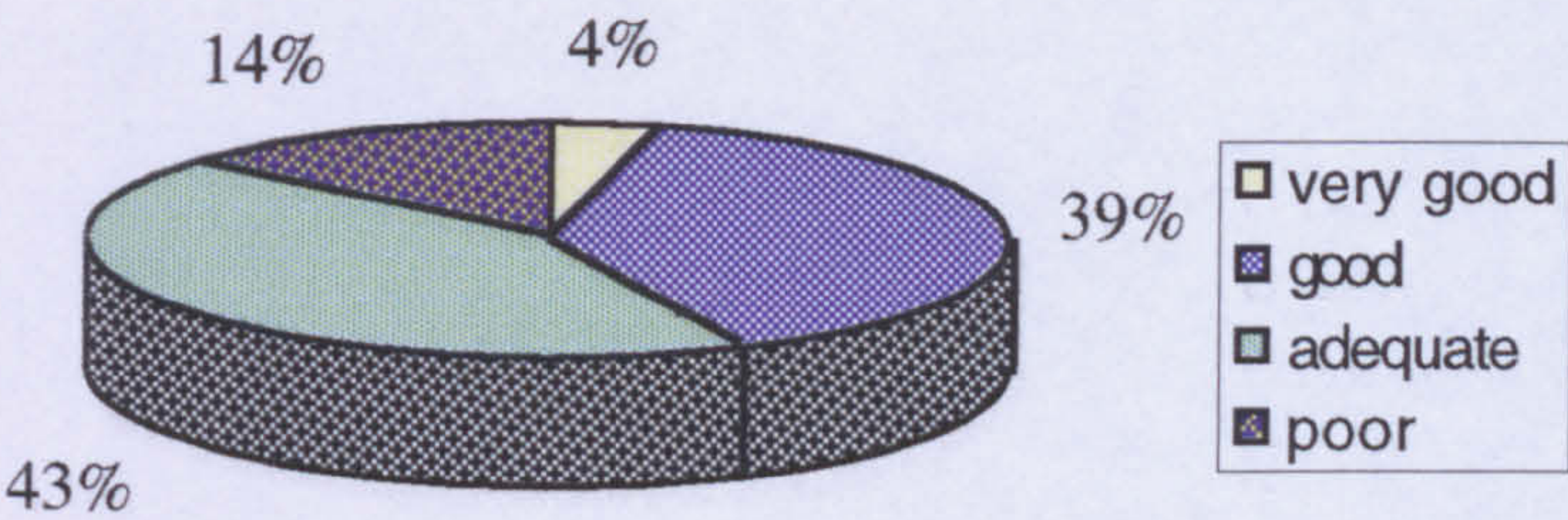


Table 49 A comparison of nurses' and students' views of the standard of pain relief

Standard of pain relief	First administration n= 169 missing=48	Second administration n= 173 missing=5	Nurses n=51 missing=0
Very good	19 (11.2%)	19 (11%)	2 (3.9%)
Good	75 (44.4%)	75 (43.4%)	20 (39.2%)
Adequate	67 (39.64%)	66 (38.2%)	22 (43.1%)
Poor	8 (4.7%)	13 (7.5%)	7 (13.7%)
Very poor	0 (0%)	0 (0%)	0 (0%)

The vast majority of nurses (85.3%) thought that pain control following surgery was either good or adequate (figure 32). Comparing the views of those who thought that the standard of pain relief was good or very good to the rest (Table 50) suggested their views were not related to their inferences of pain ($t=-0.00$, $df=45$, $p<1.0$) or psychological distress ($t=-1.17$, $df=46$, $p<0.3$). There is no evidence therefore that

nurses who infer higher levels of pain would suggest that the standard of pain relief is poor because of an increased sensitivity to suffering.

Table 50 Inferences of pain and psychological distress related to nurses’ views of the standard of pain relief

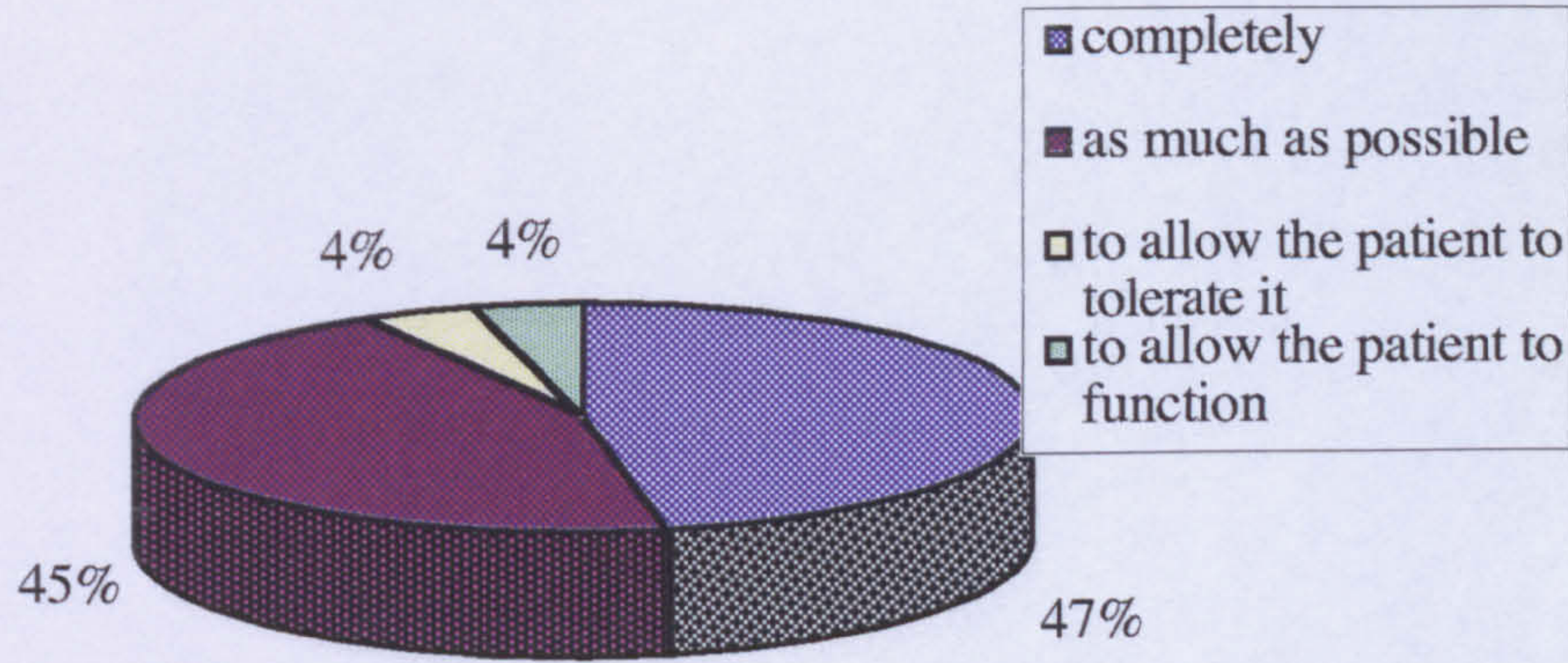
Standard of pain relief after surgery n=51	Number (missing)	Mean pain score (Standard deviation)	Mean psychological distress score (Standard deviation)
Very good or good	22(0)	3.419 (0.624)	4.330 (0.759)
Adequate, poor, or very poor	22(0)	3.420 (0.620)	4.586 (0.800)
Total	51(0)		

3.3.3(b) The aim of pain relief

Nurses were almost equally divided between whether the aim of pain relief was to relieve pain completely or as much as possible (figure 33).

Figure 33 Nurses' views of the aim of pain relief

n=51 (missing =0)



A comparison of these views with those of the students at the beginning and the end of the CFP (Table 51) showed that there was a significant difference between the nurses' and the students' views at the beginning of the CFP ($\chi^2 = 54.295$, $df=3$, $p<0.001$), and at the end ($\chi^2 = 15.449$, $df=3$, $p<0.01$), although the students' views became closer to those of the nurses over the CFP. The differences seem to be due to more nurses seeing the aim to be to relieve the pain completely.

Table 51 A comparison of students’ and nurses’ views of the aim of pain relief

Aim of pain relief	First administration n= 177 missing=40	Second administration n=176 missing=2	Nurses n= 51 missing=0
To relieve the pain completely	10 (5.7%)	37 (21%)	24(47%)
To relieve the pain as much as possible	129 (73%)	99 (56.3%)	23(45%)
To relieve the pain enough so that the patient can tolerate it	25 (14%)	23 (13%)	2(3.9%)
To relieve the pain enough to allow the patient to function	13 (7.3%)	17 (9.7%)	2(3.9%)

Comparing the inferences of pain and psychological distress of those who identified the aim to be to relieve the pain completely with the rest of the nurses (Table 52) shows that there is no significant relationship between the nurses’ views of the aim of pain relief and their inferences of pain ($t=-0.29$, $df=48$, $p<0.8$) or psychological distress ($t=-1.77$, $df=48$, $p<0.09$).

Table 52 Relationship of inferences of pain and psychological distress to nurses’ views of the aim of pain relief

Aim of pain relief n=51 missing=0	n	Mean pain score (standard deviation)	Mean psychological distress score (Standard deviation)
To relieve the pain completely	24	3.4461 (0.590)	4.6770 (0.729)
To relieve the pain as much as possible or enough so that the patient can tolerate it or enough to allow the patient function	27	3.396 (0.647)	4.297 (0.802)

3.3.3(c) Risk of addiction

The majority of nurses (78%) had an accurate perception of the risk of addiction although 11 (22 %) nurses overestimated the risk (figure 34).

Figure 34 Nurses’ views of the risk of addiction

n=51

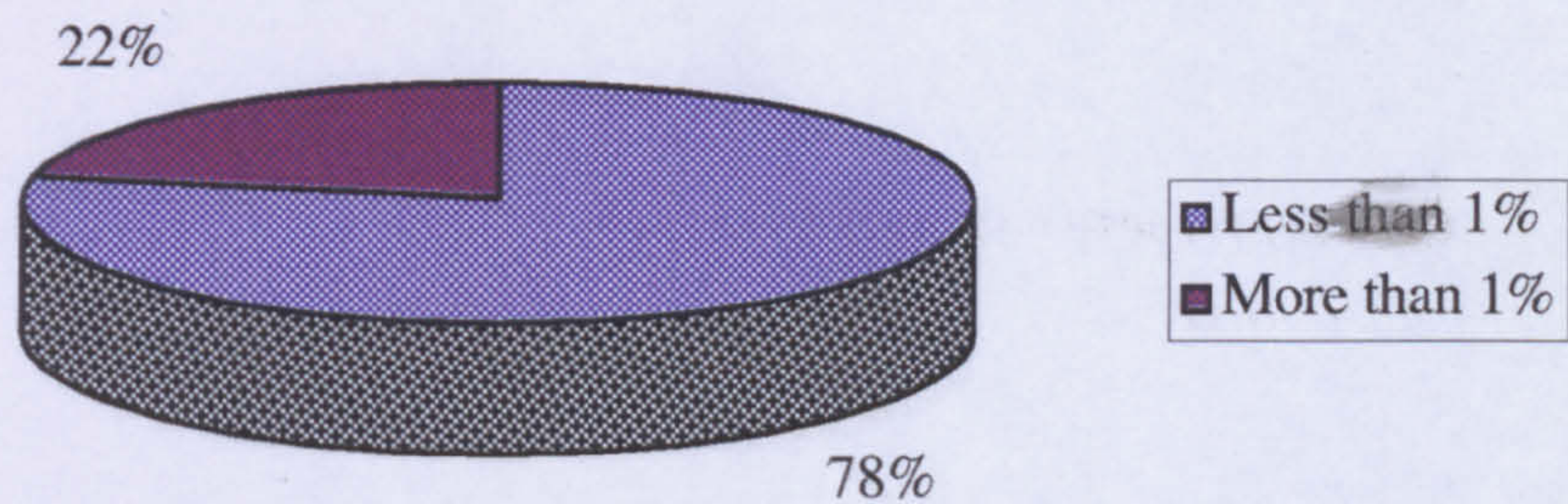


Table 53 The views of nurses and students of the likelihood of addiction

Addiction	First administration n= 167 missing=50	Second administration n=176 missing=2	Nurses n= 51 missing=0
less than 1%	40 (24%)	79 (44.9%)	40(78%)
1-15%	89 (53.3%)	80 (45.5%)	10(20%)
16-25%	22 (13.2%)	11 (6.3%)	1(2%)
26-50% & 50-75%	16 (7.8%)	6 (3.4%)	0(%)

The nurses had a more accurate view of the risk of addiction than the students (Table 53) at both the commencement ($\chi^2= 50.902$, $df=3$, $p< 0.001$) and end ($\chi^2=18.265$ $df=3$, $p<0.001$) of the CFP.

A comparison of the views of nurses and their inferences of pain and psychological distress (Table 54) shows that there is a significant difference ($t=2.72$, $df=22$, $p<0.02$) between the inferences of pain of those who correctly or incorrectly identified the

correct risk of addiction, with those correctly identifying the risk of addiction inferring higher levels of pain. There was no difference in the inferences of psychological distress ($t=0.81$, $df=13$, $p<0.5$).

Table 54 Nurses’ inferences of pain and psychological distress according to their views of the risk of addiction

Risk of Addiction n=51	n (missing)	Mean pain score (Standard deviation)	Mean psychological distress scores (Standard deviation)
Less than 1%	40(0)	3.517 (0.625)	4.528 (0.751)
Over 1%	11(0)	3.067 (0.435)	4.285 (0.910)
Total	51(0)		

3.3.4 Nurses’ understanding of pain

The nurses surveyed were asked a number of questions about their understanding of pain which were based on those used by Sofaer (1984). The responses to individual questions are shown in Table 55 and the total number of correct scores is indicated in Table 56.

Table 55 Nurses' responses self test questions

Question	Correct response	Correct	Incorrect	Abstained	n
If patients do not know what is going to happen to them, and when, they will be anxious.	True	39 (86.7%)	3 (6.7 %)	3 (6.7%)	45
Narcotic analgesics such as morphine are usually the only effective drug to combat narcotic responsive severe pain.	True	17 (34%)	25 (50%)	8 (16%)	50
Pain is what ever the patients says it is, existing whenever he says it does.	True	45 (88.2%)	5 (9.8%)	1 (2%)	51
A patient usually adapts to pain, both physically and behaviourally even when pain remains at the same level.	True	18 (36%)	19 (38%)	13 (26%)	50
Overdosage of morphine can eventually stop respiration and cause death.	True	46 (90%)	4 (7.8%)	1 (2%)	51
Anxiety is most often associated with acute pain while depression is most often associated with chronic pain.	True	38 (74.5%)	8 (15.7%)	5 (9.8%)	50
If we know the cause of pain we can usually predict its duration and severity.	False	29 (56.9%)	19 (37.3%)	3 (5.9%)	51
Although tolerance for pain varies from one patient to another a patient usually has the same degree of tolerance at all times.	False	41 (80.4%)	6 (11.8%)	4 (7.8%)	51
The process of pain assessment requires active effort on the part of the nurse	True	46 (92%)	1 (2%)	3 (6%)	50
It is probable that many postoperative patients will become addicted to analgesics.	False	49 (96.1%)	0 (0%)	2 (3.9%)	51
Preparing for a patient for surgery psychologically as well as physically is not likely to have any effect on his pain.	False	49 (96.1%)	1 (2%)	1 (2%)	51
A side effect of taking aspirin is nausea and vomiting.	True	31 (60.8%)	16 (31.4%)	4 (7.8%)	51

Table 56 Table to show the total scores

Number of correct answers n =48 missing =3	n	Percentage
5	1	2 %
6	4	8.4%
7	6	12.5%
8	7	14.6%
9	10	20.8%
10	18	37.5%
11	2	4.2%

Comparing nurses' with a total score on the test of knowledge derived by Sofaer (1984) of 10 or 11, with those with lower scores suggests that these scores were not related to inferences of pain or psychological distress ($t=-1.23$, $df=40$. $p<0.3$; $t=-1.37$, $df=42$, $p<0.2$). There were however significant differences in nurses' inferences of psychological distress according to their answers to questions 4 ($F= 4.30$, $df=2$, 47 , $p<0.02$) and 5 ($F= 4.37$, $df=2$, 48 , $p< 0.02$) with those giving an incorrect response making higher inferences (Table 57).

Table 57 Relationship of nurses' inferences of psychological distress to answers to questions 4 and 5

Question	Response	n	Mean psychological distress score	Standard deviation
Question 4 A patient usually adapts to pain, both physically and behaviourally even when pain remains at the same level.	Correct	18	4.0704	0.7638
	Incorrect	19	4.7583	0.7002
	Abstained	13	4.6256	0.7801
Question 5 Overdosage of morphine can eventually stop respiration and cause death.	Correct	46	4.3782	0.7484
	Incorrect	4	5.2542	0.5339
	Abstained	1	5.8500	0.0000

3.3.5 Nurses' estimates of patients' pain

Nurses were selected for this part of the study on the basis of their inferences of pain. The nurses with the ten highest and lowest mean inferences of pain were selected. Five nurses had to be rejected from the initial sample: two had left since the questionnaire

was collected, one was on maternity leave and one was on long term sick leave. Sister/Charge nurses were also excluded as they were unlikely to be the nurse primarily responsible for a patient's care. Additional nurses were recruited to ensure the sample was complete. Due to sickness and nurses moving three further nurses were lost from the sample leaving a total of 10 nurses in the high ratings group and 7 in the low rating group. The high rating group had significantly higher pain scores than the low rating group ($t=11.17$, $df=14$, $p<0.0001$) and, although the psychological distress scores were not taken into account when the nurses were selected, the high rating group also had significantly higher psychological distress scores ($t=3.79$, $df=12$, $p<0.003$). Each nurse included in this part of the study assessed five patients' pain for whom they were caring.

The scales proved difficult to analyse as they appear to have been perceived differently by the subjects. Some subjects appeared to mark the scales in the centre of the divisions, others marked the lines on the dividing lines. The scales appear to have been used in an ordinal fashion although the use of both the centre points and the division lines by different subjects makes the analysis of the results difficult. The scales can be analysed in two ways. The scale can be coded according to the divisions on the scale retaining its ordinal nature. This may result in marks on the scale which are relatively close being included in different categories and therefore being classified as different. Calculation of the distance in millimetres of the marks from the end of the scale overcomes this problem. A difference between the nurse and patient can then be defined as a difference of more than 10mm as used by other studies (Iafrati 1986; Zalon 1993). This again may lead to difficulties as the scale seems to have been used in an ordinal fashion and not as a visual analogue scale.

In order to overcome these difficulties the scales will be analysed by defining a difference between the two ratings as any scores that differ by more than one category (Table 58).

It can be seen from these results that in 43 out of the 85 ratings (50.6%) the nurses' and patients' ratings differed. Thus the nurses and patients only agreed in 42 (49.4%) of the ratings although this may not be representative of all nurses as these were selected groups. Of the 43 pairs of scores that were different the nurses underestimated the patients' pain on 21 (48.8%) occasions and overestimated on 22 (51.2%) occasions.

When comparing the number of occasions the nurses over or underestimated the patients' pain (Table 59) there was a tendency for the nurses in the high rating group to overestimate the patients' pain when compared to the low rating group, however this is not statistically significant ($\chi^2 = 1.204$, $df=2$, $p > 0.05$). There is therefore no evidence from this study that high scores on the SMIS questionnaire are related to a tendency overestimate patients' pain levels.

Table 58 Over and under estimation of patients' pain scores (difference defined as more than one category)

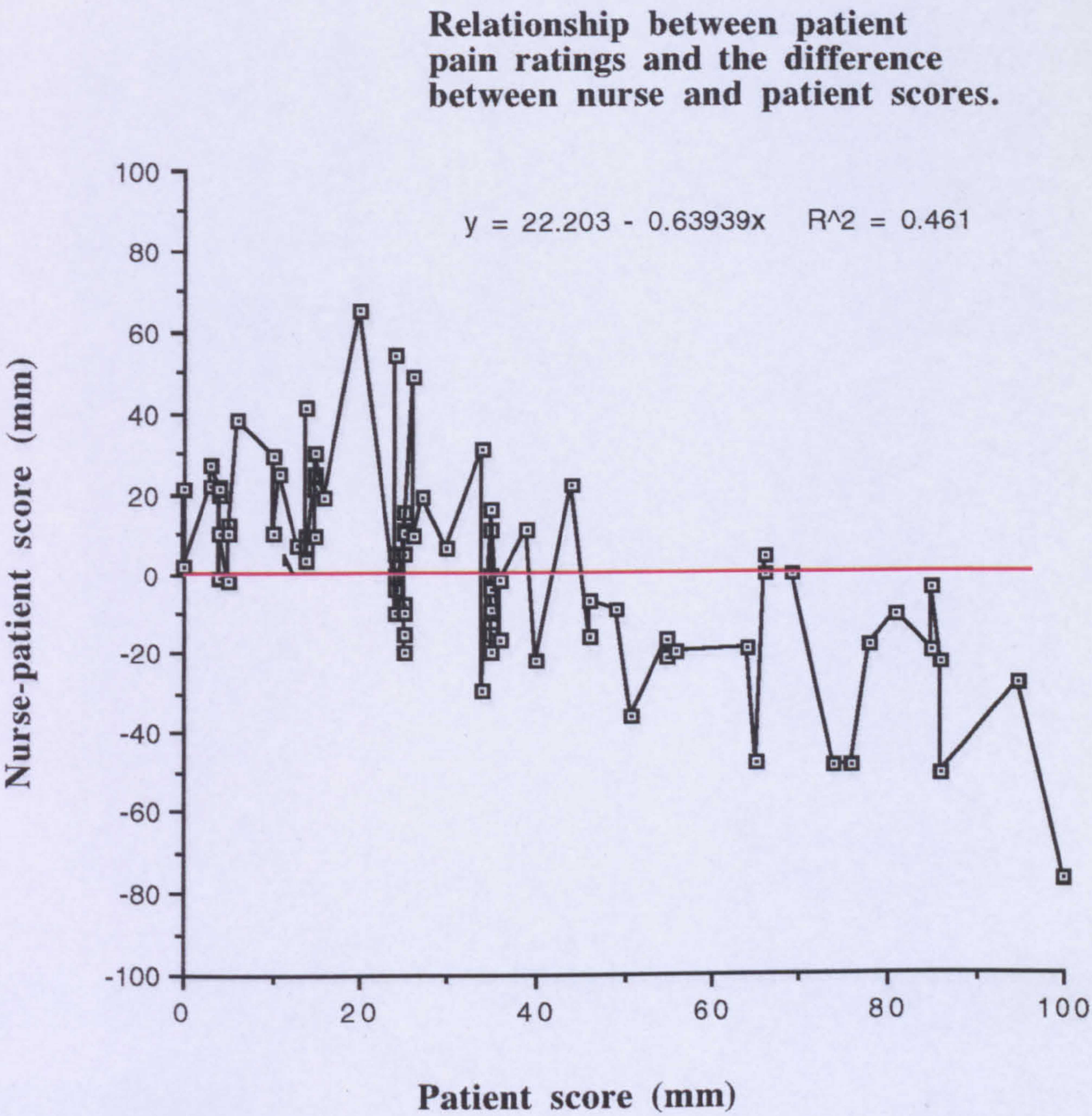
Nurse	High / low rating	Number of times nurses' score less than patients	Number of times nurses' score more than patients	Number of times nurses' score same as patients
1	High	1	1	3
2	High	1	1	3
3	High	2	2	1
4	High	2	1	2
5	High	2	2	1
6	High	1	2	2
7	High	1	1	3
8	High	0	2	3
9	High	1	1	3
10	High	0	2	3
11	Low	1	1	3
12	Low	1	1	3
13	Low	3	1	1
14	Low	0	1	4
15	Low	2	1	2
16	Low	0	1	4
17	Low	3	1	1
Total		21 (24.7%)	22 (25.9%)	42 (49.4%)

Table 59 Over and under estimation by nurses with low and high inference scores calculated by differences in category of more than one

Group	Number of under estimations	Number of over estimations	Number of correct	Totals
High inferences	11 (22%)	15 (30%)	24 (48%)	50
Low inferences	10 (28.6%)	7 (20%)	18 (51.4%)	35
Total	21	22	42	85

Figure 35 shows the patients' and nurses' scores as measured from the left hand side of the scale. This shows that there was an increased tendency to underestimate the pain as the patient's pain ratings increased while lower pain scores tended to lead to nurses overestimating the patients' scores.

Figure 35



Comparing the number of overestimated pain scores and the number of correct or underestimation's for patient scores equal to or greater than 50 and scores below 50 shows that there was a significant difference (Table 60).

Table 60 Over or under estimation of scores greater than or less than and equal to 50

	Number of scores correct or underestimated	Number of scores over estimated	Total
Patient scores less than or equal to 50	45	22	67
Patient scores greater than 50	17	1	18
Total	63	22	85

Chi - square = 5.350, df=2, p< 0.03

Fisher’s exact test p< 0.04

As one of the cells has an expected frequency of less than 5 (4.9) the chi-square test is potentially unreliable. Fisher’s exact test shows however that there is a significant difference in the degree of over or underestimation and correct estimation when the patient scores are above or below 50.

This phenomenon could have influenced the relationship of nurses’ inferences of pain and their assessment of patient scores. If for example there were a lot of low patient pain assessments in the low rating group, then the over assessment due to the low patient scores may tend to mask under assessment by low rating students. A t-test of the patient pain scores suggests however that there was no significant difference between the pain scores of the patient for the two groups (t= 0.12, df=66, p<1.0) and it is therefore unlikely to have affected the result.

There was also no relationship between the degree of over or under estimation of pain and the nurses' age ($F=0.07$, $df=2, 14$, $p<1.0$), experience ($F=1.17$, $df=4, 12$, $p<0.4$) or receiving post basic training ($t= -1.73$, $df=14$, $p<0.2$). There was also no difference between nurses who had or had not experienced a painful illness ($t=0.15$, $df=11$, $p<0.9$) and there was also no relationship between the nurses' views of the standard of pain control ($F=0.10$, $df=3, 13$, $p<1.0$), the aim of pain control ($F=0.67$, $df=2,14$, $p<0.6$), or risk of addiction ($F=0.13$, $df=1, 15$, $p<0.8$) and their degree of over or under estimation.

Chapter 4 Students' Views of Caring for Patients in Pain

4.1 Introduction

The aim of this study was to identify influences on the development of nurses' attitudes to pain and psychological distress. Although possible reasons have been suggested for the finding that students nurses' inferences of suffering change over their training (Lenburg, Glass and Davitz 1970a; Davitz and Davitz 1981) little research has been reported to support these hypotheses. Davitz and Davitz (1981) have used interviews with students to identify the effects of training on students' views and Smith (1992) in her study of the relationship between the quality of nursing and the ward as a learning environment for student nurses mentions some discussion of the students' reactions to patients in pain.

4.2 Methods

To explore students' experiences of caring for patients in pain and to identify possible influences on the development of nurses' attitudes to pain and psychological distress semi-structured interviews were carried out with students who had participated in study one. A copy of the interview schedule is included in Appendix 14.

4.2.1 Subjects

Fifteen students were selected on the basis of their pain scores at the beginning and end of the common foundation course. Students were ranked according to the degree of change in their pain scores. The students with the largest increase or decrease in their pain scores were then selected to be interviewed to explore their experiences during their common foundation course. Only students who had agreed to participate in the interviews were approached.

4.2.2 The interview schedule

The basis of the interview was the Critical Incident Technique (CIT) (Flanagan 1954). Flanagan (1954) has described the technique as a flexible set of procedures for collecting direct observations of human behaviour in such a way as to facilitate their potential usefulness in solving practical problems. Since its development many researchers have used the technique. Norman, Redfern, Tomalin and Oliver (1992) highlight the use of the technique to investigate a number of aspects of nursing. These include studies which have attempted to construct a framework for evaluating the performance of student nurses (Flanagan, Gosnell and Fivars 1963), to identify behavioural criteria of the successful staff nurse (Bailey 1956) and to develop an evaluation procedure for staff nurses (Rosen and Abraham 1963). Benner (1984) has used a modified version of the critical incident technique to identify the major competencies of nurses at different levels of skill acquisition and Cox, Bergen and Norman (1993) used the technique to explore clients' views of care provided by the Macmillan nurse. The CIT has also been used to describe the work of nurses, for example the private duty staff nurse in the hospital environment (Pumroy and Suttell 1956) and the psychiatric nurse (Cormack 1983). The CIT has also been used to investigate specific aspects of nursing practice for example nurses' attitudes to towards their patients (Clamp 1980) and coping methods of registered nurses returning to school (Lee 1988).

Norman et al. (1992, pg.592) suggests that "the range of issues addressed illustrates the flexibility of the CIT and this is no doubt one reason for its increasing popularity." This method was chosen as the best technique for eliciting the experiences of student nurses that may have affected their inferences of suffering. Flanagan (1954) describes the characteristics of a critical incident and the stages through which this procedure should proceed. Flanagan (1954, pg.327) defines an incident as "any observable human activity that is sufficiently complete in itself to permit inferences and predictions to be made about the person performing the act. To be critical the

incident must occur in a situation where the purpose or the intent of the act seems fairly clear to the observer and where its consequences are sufficiently definite to leave little doubt concerning its effects.” The focus is therefore on extremes.

The five stages that Flanagan (1954) describes are firstly the formulation of the general aim of the activity, in this case the aim of the activity is the relief of the patient’s pain. The second stage is setting plans and specifications. The observers in this study are the students themselves. As the study was concerned with the students’ views and reactions to caring for patients in pain it was inappropriate to include any other respondents. Identifying the sample size depends more on the number of critical incidents obtained rather than the number of respondents. The method of identifying the number needed as described by Flanagan (1954) depends on analysing the incidents as they are collected. The number of incidents is thought to be sufficient when an additional 100 incidents only add two or three critical behaviours. It was not possible within the restraints of this study to attain this number of incidents. The analysis of the incidents elicited in this study will therefore highlight the possible need for further study and may not be completely comprehensive.

Stage three of the study involves the collection of the data. Although Flanagan (1954) describes studies that mainly collected data via direct observation, he states that “...it seems reasonable to assume that, if suitable precautions are taken, recalled incidents can be relied on to provide adequate data for a fairly satisfactory first approximation to a statement of the requirements of the activity” (pg. 340).

Stage four involves the analysis of the information. Norman et al. (1992) suggests that the analysis of CIT studies usually takes the form of inductive classification of the information and the construction of a hierarchy of categories which enables the information to be described at increasing levels of specificity. The difficulty in applying the technique as described by Flanagan (1954) due to the limited resources

meant that although it was possible to structure the interviews using the technique it was inappropriate to analyse the incidents in this way.

Analysis of the interviews was therefore carried out using a technique described by Burnard (1991). The method is described as a method of thematic content analysis which has been adapted from various works on content analysis and grounded theory (Glaser and Strauss 1967; Babbie 1979; Fox 1982; Berg 1989) and consists of fourteen stages (see Appendix 15).

The original intention had been for the interviews to be carried out by the author. However, at the beginning of the adult branch as part of his teaching role, the author was involved in teaching sessions relating to acute pain in one of the colleges. This may have influenced the way in which students related to the author and therefore the interviews were carried out by a researcher from the author's department. The researcher had experience of using the CIT in a previous study (Cox et al. 1993) and had received training in the technique as part of this study.

As the interviews were not carried out by the author the stages in the analysis of the interviews suggested by Burnard (1991) had to be modified. In stage one the notes on topics and ideas about categorising the data were made as the author listen to the tapes and transcribed the interviews. In stage six the independent category generation was performed by the researcher who carried out the interviews. This was to ensure that any contextual issues or misconceptions arrived at by listening to the transcripts would be corrected by comparison with those categories arrived at by the interviewer. Stages nine and ten were carried out using a personal computer rather than cutting and pasting. It was not possible to carry out section eleven which was to return to the respondents to check the categories. Due to the limited time available to the researcher to complete the transcription and analysis of the transcripts this could not be achieved until the students had completed their course.

The Interview schedule was piloted by interviewing three undergraduate students not included in the sample. All the students were able to discuss their experiences of caring for patients in pain and the tape recording of the interviews was successful allowing the pilot interviews to be transcribed. Although these interviews were not fully analysed the themes that emerged on reading them were similar to those that emerged from the study sample. For example the students discussed feelings of helplessness, acting as go-betweens and the difficulties that this produced for them in relation to the staff and patients and how they coped with these feelings. The interviews lasted between 26 and 42 minutes.

4.2.3 Procedure

Ethical approval for this study was obtained at the same time as the approval for study one. The students were contacted via letters as the college of nursing, despite having approved the research protocol, were unwilling to allow the researcher to contact the students directly. Letters were therefore distributed to the allocations officer at the relevant college and were then passed onto the students. Although the students from two centres replied to the letters quickly, 6 students from the third college site had not replied after 4 weeks and a follow up letter was sent. 5 students did not reply to this letter and so further students were approached by selecting students from the ranking of the changes in pain scores. Follow up letters were sent to those students who did not reply.

The students were informed that the point of the interview was to discuss their experiences during their course of dealing with patients in pain. They were told that the interviews would last approximately half an hour and that they would be tape recorded. Students were also told that they would not be identified in the research report. Interviews were conducted in an office in the Department of Nursing Studies

at one site and in interview rooms at the other two college sites. The interviews were tape recorded and transcribed to aid analysis.

Burnard's (1991) framework proved to be a useful guide to the process of analysing the interviews. Through the process of analysing the 15 transcripts categories were generated and collapsed as further analysis was carried out, the framework acted as a guide to this process. Themes generated by the author and the researcher were very similar in content although the labels given to categories varied.

4.3 Outcomes of interviews

The themes concerning the students' views of patients', nurses' reactions to patients in pain and the students' views of the doctors' responses will be reviewed before the students' reactions to their experiences are described. The views of students towards analgesia, the standard of pain relief and nurse education in relation to pain will then be reviewed. Finally the students' perceptions of the effects of their course on their views towards pain will be outlined. The main themes to emerge from the interviews are summarised in Table 61.

4.4 Students' views of the patient's reaction to pain

Two main themes emerged in relation to the students' views about the reaction of patients to their experiences of pain. These were 'Patients react differently' and 'Patients don't say'.

4.4.1 Patients react differently

The unique personal nature of the pain experience was recognised to some extent by the students' suggestion that patients reacted very differently to their experiences of pain. A number of students suggested that patients' reactions to pain were very

Table 61 Themes emerging from the students' experiences of caring for patients in pain

Topic	Themes
4.4 Students' views of the Patient's reaction to pain	4.4.1 Patients react differently 4.4.1(a) Gender differences 4.4.1(b) Upbringing 4.4.1(c) Previous experience 4.4.1(d) The cause of pain 4.4.1(e) The meaning of pain 4.4.1(f) Others' reactions
	4.4.2 Patients don't say
4.5 Nurse's responses to patients in pain	4.5.1 Inappropriate behaviour 4.5.2 Expectations of pain. 4.5.3 Acceptable behaviour
4.6 Students' views of the reaction of doctors	4.6.1 It's left to the nurses 4.6.2 Poor communication 4.6.3 Medical focus
4.7 Students' reactions to caring for patients in pain	4.7.1 Emotional responses to patients in pain 4.7.2 Being a student 4.7.3 Being a go between 4.7.4 Coping with patients in pain 4.7.5 Causing pain and discomfort
4.8 Definition of pain.	
4.9 Views relating to analgesia	4.9.1 Students' views of addiction 4.9.2 Patients' views of analgesia
4.10 Standards of pain relief	
4.11 Complementary therapies	
4.12 College input	
4.13 Changes in attitude	

individual in nature and that you could not generalise about any other factors. For example one student suggested that

“again it’s so personal I don’t think you can afford to put too many preconceptions of your own onto it because I think you’ve got to judge each situation as an individual situation and deal with it hopefully appropriately at the time.”

Other students highlighted the range of reactions that patients display.

“Apart from all the people that I’ve already mentioned from recent experiences just doing something as simple as taking out somebody’s clips, it is an uncomfortable procedure and I’m sure it’s not the nicest thing in the world to have done but some patients will say I didn’t feel a thing that was brilliant and another patient will be howling and moaning and groaning before you’ve even got the clip round the staple so yeah it is different.”

“ I think perhaps like the patient I described in the rehabilitation ward she got really upset about it and she was crying and other people’d sort of get angry and you know start being really quite, not violent, but be really sort of quite aggressive and that kind of thing, going really quiet and withdrawn, being really sort of demanding whatever because of that.”

Although several students seemed to be suggesting that the reactions of patients were very different and individual in nature there were also a number of factors that students felt influenced patients’ reactions to pain.

4.4.1(a) Gender differences

These factors included the gender of the patient and although there were differences in the way the students viewed the reactions of men and women they saw gender as something that influenced the reactions of patients to the experience of pain.

Two main views seemed to emerge; the majority of the students subscribing to the view that 'Men are whingers'. The following responses are typical of this view .

“ Regarding men and women, well I've known men that have come in to have their teeth out and they're all over the place, women that have the same operation are ready to go out the next morning, but the same can be applied the other way around, you get some women that are really 'oh, oh', and men that are ready to do the reverse, but I think if I was going to be sexist about it I would say that men are the biggest babies of all because women have got to get better, because they've got more responsibility i.e. their family so it's up to them, not so much that they're the breadwinners but they're the organisers, they're the queen bees, they've got to make sure that they're there so everything else gets done so they can't afford to be unwell for too long.”

“ ...I suppose men and women sort of feel differently about them you know. Men seem to have a pain threshold of about zilch (laughs) and women you know sort of think 'oh well', lay and grin and bear it, they seem to be I don't know not so worse the wear of you know I mean men they grumble at everything and it seems general and yet women you know seem to put up with a lot more before they ask for stuff.

Right, why do you think that might be?

Probably roles, culture, you know men are meant to be strapping lads and big heroes and nothing hurts them and yet in hospital it's like a sick role as though you know it's okay they'll probably really play on it.”

Two of the students suggested the opposite view suggesting that the 'macho image' of men prevent them from reporting their experiences. For example one student suggested that

“ I don't know whether it's the difference between a man and a woman, but because women always seem real whingers about the pain and you can't get rid of them off the ward whereas men are on and that's it they're off.”

A second student suggested

“ Yeah, I think men have a terrible macho image to live up to very often and admitting pain, I don’t think it matters how bad it is, is a sign of weakness in a lot of men. I don’t think so much now with the generations we’ve got now but I think older generations of men you know people who’ve come through the thirties, forties and fifties I think their perception of the way that they should react is different to maybe groups of men today. Because I think it’s more acceptable to show your emotions than it used to be and I think the same is true of women as well. I think they very often older women sort of take on a stiff upper lip attitude of the ‘oh well, it’s my lot I have to put up with it and get on with it’ - it’s like having a baby and picking it up but carrying on with the dusting, you know that sort of thing. But I think sort of today’s generation I don’t think there’s much of a divide between the way that they should perceive.”

4.4.1(b) Upbringing

Some students related the patients’ behaviour to their upbringing.

“ I think, well I believe that it’s got to do with how you manage pain yourself. It’s got an awful lot to do with how you have learned how to cope with that pain i.e. whoever looked after you when you were younger. How they coped with the pain and I think a lot of that is learned.”

The effect of upbringing was reflected in the students’ suggestion that different cultures or religious beliefs also influence the way patients experience pain. For some students their beliefs about different cultures seemed to arise from preconceptions about cultural reactions rather than the students’ experiences of caring for patients from different cultures. For example one student suggested that:

“ Yeah, I suppose some cultures hide it or keep it in and then other cultures scream and shout about it more than we would.

Okay, what makes you sort of think that? Have you observed that or?

No, it’s just a lot of other cultures are more emotional than us.”

4.4.1(c) Previous experience

As well as upbringing the patient's previous experiences of pain were also seen as an influencing factor.

“ But I mean I think if somebody's been chronically ill perhaps for a long time they perhaps learn to live with pain so therefore they probably don't register it like you or I would if we experience the pain that they're having. I had one gentleman who had a hip operation and he had very little analgesia after the operation and he found it more difficult to get used to the pain not being there because he'd had the pain so long it was really weird not having it there.”

4.4.1(d) The cause of pain

A number of comments made by the students suggested that they associated certain levels of pain with different types of illness or treatment. For example:

“ I mean different parts of the body if you had something wrong with your stomach or your legs then you're not going to get out of bed or walk and then it makes it worse whereas I suppose if it's a head of top of the body you know I suppose we feel more unsympathetic because you think I know they're in pain and it's their head but the rest of their body still works and although psychologically you feel like you're being hard, once you get them out and walk them about they feel much better for it whereas people lying in bed are 'ooh' and that makes them worse, so yeah.”

“ *Can you remember any particular patient who had a lot of pain?*

Yeah, a surgical patient who'd had a nephrostomy and it was pretty awful actually because it was an operation that wasn't meant to have very much pain so, I think a lot of it was psychological but yeah it was quite difficult because no matter what we did we couldn't combat any of it, so.”

The categorisation of particular operations or treatments as being associated with a certain level of pain may lead to preconceptions about the level of pain that should be experienced. The categorisation of the pain experienced in the above quote as “psychological” illustrates this danger.

One student acknowledged that there were individual responses to particular operations but suggested that different types of operation result in different levels of pain by saying:

“ Yes, yeah because somebody with a hysterectomy wouldn't feel the same pain as somebody with a toothache who's just had their lower eights extracted yes, yeah but then again two people never ever experience the same pain even if they're having the same operation so...”

4.4.1(e) The meaning of pain

Two of the students also mentioned the influence of what could be referred to as the meaning of the pain to the patient. This was best illustrated by the following comment,

“ How it's affecting them I suppose. How they sort of I don't know. I think a lot of it has got to do with what the pain is about really. I mean if you're in a lot of pain because of some malignant disease for example then that would probably be quite depressing and depending on what your outlook was regarding the illness then you might sort of I don't know feel really in despair or whatever about it whereas somebody else might be really angry that why should it be them and whatever and depending on what sort of stage they're at in coping with it and so they may react to be like you know really angry with everybody that they've got this pain. “

4.4.1(f) Others' reactions

One student suggested that a patients' reactions to their pain may be consciously altered in order to manipulate the responses of others. This is illustrated by the following quotation.

“ I think some try and pass it off and some patients they try and prolong it if you like. You know, 'I'm not very well I've got this pain and I need looking after' and that you know or whatever 'I want to get better but I want to get better slow' you know 'I want all this attention'”

Students also suggested that patients' responses might be influenced by the reaction of staff and relatives to the patients' pain. The influence of relatives was illustrated by the following quote.

“ I think from the patient's point of view as well, I think relatives can, you can get a totally different reaction from a patient from when they're in the bed on their own to when their relatives are there and I've never really worked out whether that's because they're making a fuss when their relatives are there so their family fuss or whether they feel stronger because they've got their gang with them then instead of you being in the position of power they've got their 'gang' with them and they can actually sort of tell you something because they feel braver.”

4.4.2 Patients don't say

Several of the students reported experiences in which they had contacts with patients who for various reasons the students felt didn't say how much pain they were in. The implication here seemed to be that patients were responsible for reporting their pain rather than it being the nurse's responsibility to find out. Typical examples of these experiences are reflected in the following quotes:

“ in that situation he didn't say anything so we didn't know he was in pain and you don't often have the time to read the non verbals you know so I mean if he'd pressed his buzzer perhaps at the time they'd have given him something”

“ She was given her painkillers at the hours that she was supposed to have had them, she never complained. She did once mention if she could have her dressings done in the morning rather than the afternoon because by the afternoon the dressings were actually falling out of the wound and they'd smell and it wasn't very nice for her husband to experience as well. But no she never used to complain and she had every reason in the world to complain. She was just I think she was just conditioned to not saying anything. I don't think it was because she didn't believe anybody would listen because the students, myself and one of the other students we spent a lot of time with her

because she was a really nice lady and she never used to say much but you knew she had a lot of anxieties but didn't want to say so she could have said if she was in pain but she didn't. It was just the way she was."

It was interesting to note that one student complained that a patient not only did not report their pain but also did not report this at the right time.

"Okay. Are there any particular patients that you can think of who were in a lot of pain? It doesn't have to be the one, you know your post-op patients. It can be anybody who really struck you.

Yeah we had one lady funnily enough last week, who, she'd got facial neuralgia and she.... appeared to be in a lot of pain but she had a very vocal way of expressing it and I think that caused a lot of trouble within the ward because I mean I think the other patients in the room next door thought we were murdering her and she never told us early enough so we could do anything about it. She was prescribed for diamorphine. She never told us early enough so we could do anything about it and then constantly from the time she was actually really expressing this pain it had got to a groaning, moaning, being very vocal about it....."

When asked about the possible reasons for patients not saying the students highlighted a number of issues that they felt prevented patients from saying how much pain they were in . A number of students suggested the work load of the ward may affect patients' willingness to report pain.

"Are there any times you feel that patients don't say how much pain they're in?

Yeah, lots of times especially when working on the wards you'll find that as you're busy and that you'll come across a patient and you ask them if they're all right and it's obvious that they're in pain or whatever or if they're on an infusion or something like that you can tell the sort of expressions when they lay in bed and then you'll ask them and they'll just say 'yeah' simply because you're busy but yeah it does happen a lot on wards."

Several students suggested that patients compare their condition to that of others and this may, if the ward is busy, limit their reporting of pain.

“ I think it’s probably lots of reasons. They see that you’re busy and they think oh, particularly if there’s somebody very poorly in a four-bedded bay I think they tend to see the time you put in there and they decide they’re not nowhere near as poorly as that.”

Five of the students suggested a reason for patients not reporting their pain was that patients do not wish to be a nuisance.

“ Okay. Are there any times when you feel that patients don’t actually say how much pain they’re in?”

Yes. When they don’t want to be any trouble, they think they’re being a nuisance. When I was on an elderly ward there was a woman with a, she’d had an ulcer in a clot, she’d been awake all night, but didn’t want to trouble the nurses.

Why do you think that sometimes happens?

Well, I think they feel they’re being a nuisance and, I don’t know if they when they’re getting old that, this will probably seem as if they’re always moaning I don’t know, but I think some people just don’t like fuss anyway, will put up with the pain or don’t think that they can, they’d probably had so much pain relief that they probably think, well they can’t do anymore for me because this woman’s attitude was, ‘I just want it, the foot, amputated now, I can’t put up with any more pain’.”

“Okay, do you think though that there might be times when patients don’t say how much pain they’re in?”

Definitely, I think that you have to look for the non-verbal signs some patients don’t want to be a nuisance...”

Two of the students suggested that another reason for patients not saying how much pain they are experiencing is the fear that reporting pain may prevent them from being allowed to go home.

“Right, so you do feel that there is a time when patients will not tell you what’s happening. Why do you think that might be?”

Also if they’re old they want to go home they’ll say ‘oh no, everything’s fine, I’m not in pain’ and yet there they are going grimacing but you know that they just want to get home so they will like tell you lies.”

Patients’ reports of pain may also be affected by the routine of the drugs round. Two students suggested that the routine of the drugs round affected the way that patients report their pain.

“ there’s a lot with the ward routine of the drugs round and whatever and how ‘You will have your pain relief at you know sort of 8 o’clock in the morning’ whatever, midday that kind of thing and they don’t wish to trouble anybody to have anything else in between that kind of thing.

Why do you think that might happen? Why do you think they don’t want to trouble people?

Because everyone’s all busying around and it is very much the sort of set routine that you go round and you give them their drugs and, ‘Oh are you in any pain?’ and people will sort of say, ‘Well I might be in pain actually and I’ll say yes and I’ll get that you know my tablets in case’ or they might not be in say now and then half an hour later they’ll have some pain in which case they come and it’s too late and all the nurses will be all busying around and it’s not drugs round anymore, they’re doing the washes or whatever so yeah it’s very much like that.”

4.5 Nurse’s responses to patients in pain

Students view the learning that occurs in clinical settings as an important part of their training. It is important therefore to understand their perceptions of the way pain is dealt with by the nurses who are acting as potential role models for the students’ future practice. When discussing their experiences of caring for patients in pain the students often referred to the reactions of the nurses in the practice settings towards the patient. Four main themes emerged in relation to the nurses’ reactions which were inappropriate patient behaviour, expectations of pain, and acceptable patient behaviour.

4.5.1 Inappropriate behaviour

The students were asked to recount how in their experience the nurses had responded to patients experiencing pain. A number of the students described situations in which the nurse's reactions seemed to the student to indicate that the patient's behaviour was to an extent inappropriate. This inappropriate behaviour took different forms. One student described her experience in a maternity setting which suggested that the patient was seen as over-reacting

“ Well, it was a young woman, well she was early 20's and having her first child. In the throes of labour the last part of labour which is very, very painful, I know. But she was very, very hostile towards her partner hurling verbal and physical abuse at him while she was having these contractions and swearing that she'd do him in if he ever came near her again. And in contrast to that other women in the same sort of throes of labour were quite controlled but she was really flipped.

Can you think what did the nurses actually do for that person?

Not a lot really. They just calmly went about their business as if it well, I suppose it does happen every day, and sort of pointed out to her that maybe it wasn't a nice thing to do to swear and physically hurt her partner, and that you know she wasn't doing the baby any good by overreacting and I thought 'well how do they know she's overreacting?' It's her pain.”

It is interesting to note that the student was able in this case to question the reaction of the nurses. Several students highlighted experiences in which the patient's behaviour seemed to be interpreted as the patient attention seeking.

“ I remember particularly working on one ward and she, this person, constantly bleeped and buzzed because she was in pain and it became the general consensus that she wasn't actually in a great deal of pain at all, she perhaps might have been in some, but it was more like she just wanted to see somebody, to talk to somebody, which was understandable.”

One student described a situation in which they felt their view of the patient was influenced by the reaction of other staff.

“ I’ve just been on a ward placement recently and there was a particular lady that she was labelled as a moaner, a complainer and unfortunately I was swept along with the same impression. Until about two weeks after caring for her I began to think you know now hang on a minute this lady’s going through procedures, medical interventions which are causing her a lot of pain and a lot of discomfort on their own so obviously there was a problem there so I made it my business to take myself out of whatever I was doing to spend time with her, talk to her and the pain did ease a lot through talking to her.”

This student went on to explain how this felt

“ I was mad with myself when I realised what I’d been doing. I’m pleased I did spend time with her and it did relieve her but unfortunately she died very quickly and very unexpectedly and after that it’s really, really shaken me up and I thought you know I don’t really listen to what patients say. But I’ve always believed myself that I do give individualised care and I will spend time with a patient and I do listen to what they say but after this experience it’s really, really shaken me up and I’ve thought it is easy to get dragged along with the average consensus of what everybody else is thinking.”

A number of students also suggested that the reaction of the nurses was influenced by how frequently the patients reported pain. This mainly related to the administration of drugs.

“ Especially I’m thinking like when they were doing the drug round the patient may say then that they’re in pain especially if they’ve already been to that person and the last one in the bay they’ll say ‘Well I’ll just finish this round and I’ll come back to you’. Also, as I say going back to this person who called persistently, they were perhaps more hesitant to give pain relief.”

One student who suggested that nurses responded differently to patients who frequently reported pain went on to suggest that the pressure of work on the nurses made this understandable.

“..... if the patient had been constantly going on and on and on, I think they were more likely to get less reaction from the nursing staff whereas if someone hadn't really said anything and it came to drug time, I mean that's it, drug time that was the only time that nurses really asked patients it was up to the patients then during the shift or during the day to say if they were in pain or not which I think is a bit wrong because I think you should be asking them all the time especially if they're just post surgery what a day or even hours, so. *Why do you think they might have responded differently to someone who'd just sit and ask once to somebody who was asking a lot of the time?*

Because I think that I'm not saying that they were lazy or anything but because they were so, doing having to do so many things, having to fit so many things into eight hours and if they had one patient who was constantly on and on and on you just obviously get to the end of your tether, and that happened a few times on the eight weeks I was there.”

This student also suggested that a busy ward prevented the nurses from getting to know the patients and described her experiences of caring for a patient whose reports of pain led to her being labelled as a nuisance. The student referred to the concept of the unpopular patient when discussing the way the patient was referred to. When asked why the patient may have been treated in this way the student suggested:

“ I think it's such a high turnover ward, they don't get to know the patients really anyway so they're just people, they're not someone that you actually get to know and care for. I think that could be it because there's so many different patients they just get on with their job and do it and that's the attitude that's been built in I think.”

Another student suggested that the fact that she was only there for a short time and the staff were dealing with the patient for a longer space of time meant she could understand the reaction of the nurses.

“ Sometimes the nurses got a bit you know, ‘Oh no, not again, you know I don't really want to go and get Mrs whatever out of bed you know, I'd rather somebody else do it’ because basically she'd been in there a long time and she was sort of getting on their nerves a bit you know. I mean whereas for me I

was only there for three weeks I think, so you know it did come through a little bit while I was there.”

4.5.2 Expectations of pain

One student suggested that the reaction to patients who were seen as over-reacting was related to the preconceptions of the nurses about the level of pain to expect with various operations. A patient who experienced pain in excess of this may be viewed as over-reacting.

“ Well I think particularly on surgical wards, I think nurses have a concept of because they see so many appendix operations every week or something they have this concept of ‘yes if somebody stops complaining of the pain and moves about on the sort of second or third day they’re doing really well. Anything up to the sort of fifth or sixth day is okay but anything after that and they’re like dragging it out a bit or laying it on a bit thick or whatever you’d like to term it. And I think I mean we all do it, we all work within what we know to be a reasonably normal range and I think anybody who comes outside that range then I think nurses tend to have a bit of a cut off point.”

This reaction was also highlighted by one student who suggested that nurses’ reactions were also influenced by their expectations of the level of pain associated with minor or major operations.

4.5.3 Acceptable behaviour

In contrast to the reaction to patients who complained a lot about pain students suggested that patients who did not complain a lot received a better reaction.

“ if the patient had been constantly going on and on and on, I think they were more likely to get less reaction from the nursing staff whereas if someone hadn’t really said anything and it came to drug time.....”

One student implied there was a definite view of the good patient as one who did not complain too much, but that did report their pain at the right time so that appropriate action could be taken.

“ I suppose she wasn’t filling the ‘good patient’ role and letting us know at the right time.”

4.6 Students’ views of the reaction of doctors

The successful treatment of pain requires a multi-disciplinary approach and the relationships between the different health professionals will be an important determinant of the standard of pain relief. Students were asked about their impressions of the reactions of doctors to patients experiencing pain.

4.6.1 It’s left to the nurses

Although all of the students acknowledged that pain control required input from both doctors and nurses the emphasis that they put on the relative roles of doctors varied. Two of the students emphasised the role of the nurse suggesting that prescribing the analgesic was the doctor’s main role.

“ I think it tends to be left to nurses. Doctors write them up whatever they think is required, I think the nurse is sometimes, oh you’ve seen it happen, nurses say this isn’t working can you prescribe something different or something in addition and the doctors seem by and large quite happy to do that.”

“Okay, in again on ward experience, how did the doctor’s react to patients in pain? Can you think of any examples?”

Usually tell the nurse. They’ve written up what they’re going to write up and that’s that not unless it’s come through the nurse to the doctor saying you know Mrs so and so does need further pain relief and then they’ll write it up. *So, correct me if I’m wrong, but from what you’re saying they very much see it as a nurses role?*

Yeah.”

Other students seemed to view the process as a slightly more collaborative one with negotiation between the doctors and nurses although still emphasising the nurse's role.

“ Okay, when you've been working on the wards, how have the doctors reacted to patients in pain?

I suppose they've actually taken the nurse's word for it, what they needed, or they've discussed it with the nurse as to what to give them. In most of the placements I've been on in fact, it's been the nurses that have more or less decided what's needed and the doctors have either gone along with it or suggested something else and then they've discussed it between them. Which again comes back to the nurse's knowledge of the drugs that are available.”

The need for collaboration and multi-disciplinary work was emphasised by one student who interestingly used the example of a Macmillan nurse who the student saw as more knowledgeable than the doctor.

“ She knew what she was doing. She knew the drugs, she knew the timing, she knew the regime, she knew the strength and she was telling the doctor which is something you don't see very often and the doctor, I suppose more importantly, he was a junior doctor and he was listening and I'm thinking yeah you know that's yeah he's a doctor and she's if you'd like to say 'only a nurse' but she's obviously got years of experience and she knew what she was talking about and she could help that patient but she needed the doctor to do the actual written work to get it put through the system and I think that to me was multi-disciplinary nursing, it was multi-care which is what we're supposed to be aiming at, but it doesn't happen”

It is interesting to note that a situation in which the nurse was seen as more knowledgeable is seen as an example of multi-disciplinary team work rather than a situation in which there is negotiation and discussion amongst equals.

4.6.2 Poor communication

As the above quotation highlights, the ideal of multi-disciplinary care was not always observed by the students. Two of the students highlighted experiences in which they felt that the doctors had not listened to the information related to them by the nurses.

One of the students explained this.

“ I mean a lot of doctors are very good that’s unfair but I don’t sometimes think doctors listen to the nurses, when the nurse says I think Mr Smith’s been in quite a lot of pain but if you ask him you know he’s not verbalising it, they don’t tend to, they then go in and ask Mr Smith and if Mr Smith isn’t telling the nurse, he’s certainly not going to tell the doctor. And they, so it’s okay then, it’s dismissed then as the nurse is making a fuss or something whereas I think most nurses would not say something like that to a doctor if they really didn’t feel it and at the end of the day it’s the nurses and even sometimes things like that come up from their health care support work because they’re the ones I think who’ve spent more time hands on and I think if that’s filtered up through the system then something should, if it got from the patient, even if it’s taken up to a day or something to get there, then something should be done but I don’t think doctors always give verbal messages like that the credit that perhaps they should.”

As well as poor communication between doctors and nurses, one student felt that not all doctors listen to the patients themselves.

“ Some of them very, very good, some of them absolutely appalling I suppose. I don’t think doctors give most patients the credit for, I know this isn’t fair and I can’t generalise like that, I think some doctors don’t give patients the credit for knowing their own body, they tend to I’m the doctor I know best.”

One student recounted an experience when a patient’s diamorphine was discontinued by a consultant against the wishes of the nurses.

“ Well, yeah I mean it was her primary nurse that during the week called out whatever doctor it was that was available to come in to get the pain relief you know make it stronger to have the diamorphine. Because of like how much pain she’d been in but then when it actually came to the consultant coming down and saying, ‘She doesn’t need that’, the primary nurse wasn’t there, it was an associate nurse that was in the case conference and she just said, ‘Are you sure?’ and that was it she just sort of said, ‘Oh what can I do?’ Everyone else on the ward was like saying, ‘I can’t believe you didn’t sort of stand up for her and didn’t sort of disagree with what he was saying’ but she was like, ‘I can’t disagree with this’.”

In this case the student and indeed the other nurses seemed to feel it was the nurses role to stand up for the patient. In this case the multi-disciplinary approach to pain relief seemed to be lacking.

4.6.3 Medical focus

The students’ experiences led some of them to view the doctors as being focused on the medical model and were less interested in the patients’ pain. One student suggested

“ I don’t know I think nine times out of ten, they weren’t particularly concerned about the specific pain, they were concerned more about the problem, the medical or social problem that was there the pain was secondary if you like.....but on the whole I would say that they were good.”

A second student suggested that

“..thinking of the situations that I’ve seen, doctors weren’t given to much tolerance.

Can you think why that might be?

Because they follow a complete medical model, they don’t sort of look at a person as a whole - just bits.”

4.7 Students' reactions to caring for patients in pain

Students were asked during the interview to describe caring for patients who were in a lot of pain and those whose pain was well controlled. The themes that emerged from the students' descriptions of their experiences were the emotional response to caring for patients in pain, being a student, being a go between and coping.

4.7.1 Emotional responses to patients in pain

In recounting their experiences of dealing with patients in pain students revealed some strong emotions associated with caring for patients in pain. The difficulty students experienced when caring for patients in pain was explained by one student who suggested that :

“ I think that side of nursing is inevitable and it's something that you have to come to terms with. It's difficult at times because some people are in terrible distress and when you've done all you can there's nothing else that you can do - that's when it becomes quite upsetting.”

The suggestion by this student that caring for patients who are in pain is something that the student has to come to terms with suggests that the student found this a difficult process. The upsetting nature of dealing with patients in pain and in particular the feeling of helplessness was a very common emotion expressed by the students.

“ *Okay, how did being with that particular person make you feel?*

Well, I used to feel as though I couldn't really, I was a bit helpless because she was complaining about the pain and I could tell the nurses about the fact that she was still in pain and make her comfortable but because we couldn't, nobody could seem to control it, I felt quite helpless.”

“ I suppose I haven't really come across it before and certainly not really since. You don't expect people to cry out all the time, it's sort of you know you don't expect them but it's thought that people you know 'I'm all right, it's not that bad, I'll keep it to myself', but she was very open about the pain and I

think, it did appear genuine whatever, but I think it was more the fact that any pain relief didn't really have any effect or didn't appear to have much effect.

So you were, quite helpless really...

Yes, I thought it would have some effect but it didn't really seem to have."

"Well, I used to feel as though I couldn't really, I was a bit helpless because she was complaining about the pain and I could tell the nurses about the fact that she was still in pain and make her comfortable but because we couldn't, nobody could seem to control it, I felt quite helpless."

Although these feelings of helplessness were felt very much by the students the students sometimes reported that these were shared by the staff when they were caring for patients whose pain was not easily controlled.

The students also described some situations in which this feeling of helplessness and vulnerability developed further into feelings of frustration and even anger. This seemed to develop in situations in which the students felt that the staff were not doing as much as they could. In the following quote the student was referring to a patient who was being quite vocal about their pain and had been "getting on their (the nurses) nerves."

"Okay. How did you feel about the way the nurses were reacting to that lady?"

At the time, I thought they were a bit horrible, I mean bearing in mind that the first week I thought well you know I can leave you know, not go to somebody who's shouting that they want help to sit up or whatever, I felt a bit angry and then I thought well you know they're dealing with her 24 you know, they're there 24 hours a day if you like. But then I mean it didn't really excuse their behaviour and I never felt brave enough to say you know...."

Similar feelings were expressed by a student who felt that a patient who was unable to communicate their pain wasn't receiving adequate relief.

“ Right. So what was it that made you think she was in a lot of pain then?

Facial expressions and even just how she held herself in bed like posture and sort of sometimes if she was really in pain you could see her sweating and really agitated and you think ‘well hang on a minute you know even with senile dementia, there are body reflexes that override’ but they didn’t seem to really bother.

Okay. Why do you think, I mean the reaction that you saw from the nurses, how did that make you feel?

Angry, frustrated.....”

Another student described how they felt when the patient who was in pain was not due any analgesia

“ Awful, there’s nothing you can do and really there should be.”

The feelings of anger and frustration were also sometimes directed at the doctors.

One student described how they felt towards the doctors when a patient in pain was not due any analgesia.

“ Okay, have you ever been in a situation where you’ve had to tell patients that they can’t have any because maybe it’s not the right time or...

Yeah, hundreds of times.

How does that make you feel?

Awful because I suppose sometimes you feel really angry at the doctors because they have either prescribed the wrong thing that’s inadequate or they’ve put two lots down but because they sort of counteract each other you can’t give them both. And then you’re chasing doctors and all the time this patient’s waiting and it makes you really angry that people don’t really take, bother to actually look, or find out how much pain they’re in they just presume a lot and have this PRN and almost like standardise it.”

In some cases the students felt that the care that the patient had received left them feeling as though they had let the patient down.

“...But you just felt like you’d really let her down, let the patient down because a lot of us had got really close to her and talked to her about how she was feeling and she was actually a retired matron and so she’d be discussing how things were and I’d talked to her a lot about the course and all that kind of thing, so I’d got really close to her and then you felt really like in a way you didn’t really want to go and see her because you sort of felt really bad, it’s like you’d let her down.”

When the students talked about patients whose pain was well controlled the emotions they described were the opposite to those discussed so far. A number of the students described feeling good or fulfilled by being involved in the care of patients whose pain was in the students’ view well controlled.

“ Well, I think when this patient actually died a couple of days later and I think I felt good about it if you know what I mean because he was the fact that he wasn’t in any pain and he was at home with his family and everything and that aspect of it was quite fulfilling if you know what I mean.”

“ How did being with her make you feel as compared to being with the other lady?

Sort of, I don’t know if satisfied is the right word, but you feel like you’re doing something for them especially when she was so worried about how the operation was going to go and how she felt afterwards and then you’re sort of saying, ‘Oh you know this is what you’ll have and if it doesn’t work we’ll do’ this and whatever and it all turned out like that and you felt really kind of pleased that it was all sort of you know she was comfortable. It felt like you’d done your job.”

One student who described feeling good about the care received by one patient suggested that it made them feel inadequate when caring for the other patients.

“ It was good to be part of caring because you knew you were doing something but then it made you inadequate to the rest because you could see that this patient was almost getting preferential treatment to the rest. And so, swings and roundabouts really, you felt good when you went in there and you come out and then see everybody else and think ‘oh!’ (laughs).”

Perhaps these feelings were summed up by the student who said that

“ Yes, I mean it sort of fulfils your expectations of what pain relief should do.”

4.7.2 Being a student

The second main theme to emerge from the students' discussion was that of being a student. Students explained the emotions and experiences that they encountered in terms of their role as students in the practice settings.

Students suggested that their role as students limited what they could say when they felt that the care was not as good as it could be, and their limited knowledge and experience meant that although they were with patients in pain their knowledge of appropriate actions was limited. An example of this was the following point made by one of the students.

“ Right, okay, did the nurses always respond to somebody who said they were in pain?

No.

Were there any particular situations you can remember?

None that I can think of it's just that I know I suppose being on the ward you get I suppose you almost get pushed into the role really people say they're in pain and they say 'oh well I'm doing something I'll be back' and it's like you think well come on, it's down they're mindful that half an hour, an hour has lapsed and they're still looking hopefully up at you and you're like 'are we going back to that patient?' and it's very difficult, you know as a student.”

Another student highlighted this perceived lack of influence:

“Okay. Why do you think, I mean the reaction that you saw from the nurses, how did that make you feel?

Angry, frustrated because you're a student what can you say? You don't know you're just a student and you know I just felt like soon I will be in their shoes and I just hope that I don't turn out like that.”

The identification of an attitude on the part of the staff that the student hoped not to adopt is an interesting reflection on the part of the student. It suggests that the student feels that there are attitudes that staff may have adopted that the students, through their practice may be at risk of adopting. Although this student was wary of adopting the attitudes of some staff, other students expressed the wish to have the authority of the staff nurses to enable them to alter the care given.

“ I felt awful for him really. I mean he was really okay about it but I still felt you know pretty bad because there was nothing I could do you know. I felt very awkward and thinking that I was running around the bed in vain you know but yeah I felt really awkward. It's times like that I think, 'If I was a staff nurse I could give him something'.”

4.7.3 Being a go between

The feelings of helplessness and vulnerability associated with caring for patients in pain were associated often with the role that the students were occupying in the care of the patients. This was characterised by the students as being a go-between.

Students often reported being the person to whom patients reported pain, but, because of their role they were only able to report this to the trained staff. This often seemed to put the students in a difficult position especially when analgesia was not due or the staff were unable to attend to the request quickly. These scenarios were typical of those described by the students.

“ but there was one incident where somebody had pain relief and she said, 'I'm having a lot of pain' and I did go to one nurse and say you know Mrs so and so is complaining that, I think it was her leg, hurting her and she said, 'well you know she had tablets like two hours ago' and I sort of went back to her and said, 'you know do you desperately need something to relieve this pain that you're having?' and she said, 'well it's getting worse and worse and worse'. So I went to another nurse and said, 'you know she can't really hang on any longer' and she said, 'Oh well I'll get her something', and she did, she got her some pain relief. But you know to see somebody in pain and not being able to do anything about it you know because I'm a student and I'm limited

in what I can do you know but she did eventually get the pain relief that she wanted.”

“ I felt very awkward because there was nothing I could do really except relay the information and I couldn’t really, ‘Can I have the keys’ and you know draw it up and whatever, but and give it to him, because obviously I can’t as a student. So I felt a bit awkward and embarrassed.

Did you have to go back to that patient and speak to him?

Yeah I went back to the patient and explained you know they’d be along as soon as possible and explained the situation. He was quite, he was all right about it you know but he was still in pain in the meantime.”

The position of go-between seemed to put students in the difficult position of having to negotiate between patients and staff which as the following quote highlights could be an uncomfortable position.

“ I felt a bit, I didn’t feel confident in myself to you know sort of, I didn’t want to cause any trouble having to keep asking but you know looking at the patient it upset me to see her like that so I felt that I’d got to keep doing it you know and the nurse that said that she’d got to wait sort of went a bit you know sort of as if to say, ‘you know I told you she wasn’t ready for it then but you’ve gone and asked somebody else’ and I thought well that’s put me in her bad books but then at least the patient’s got what she wanted. And I thought well I’m not here to make friends with you I’m here to sort of see that everybody’s okay. If I can you know.”

Several students also reflected on the difficulties acting as a go-between can cause them in relations with the patients.

“ Again it’s bad because if you see that they are in pain and you go and tell them you know the person who’s got the keys, or who’s in charge that he has got pain and wants it now and you go back an hour later and he’s still in pain, you feel awful and you know it makes you feel stupid as though you’ve not passed the message on and you know that you have but you can’t tell the patient ‘well I did tell her’. You can say that to them but they’ll think ‘I bet she didn’t’ and their estimation of you can go down just through one situation like that”

Some students seem to have developed strategies to ensure that the patients receive the drugs as quickly as possible. For example one student suggested that she would get as much as possible ready to ensure any analgesia was given

“ If it’s if they’re on known analgesia which isn’t a controlled drug then I’ll often go and get the drug card out, write up whatever it is I’m going to give or whatever. Get it all ready so that I can just grab staff as they walk past or then just drag them in and get them to unlock the drugs cupboard and put them out. If it’s a controlled drug then I will try and set things up as much as I can but obviously you can’t give them the drugs, I’ll get the syringe out and the needles out but that’s as far as it goes, but if you leave it and just say oh so and so needs some drugs you know they’re not going to give them because it’s busy, it’s a busy ward.”

Another student seemed to have learnt how to use strategies to prevent being used as a go-between

“if they (the patients) ask me and I go to staff nurse and she says ‘yes they can have it’, I will get the drug chart out, I will wait until she’s got it out and she’s signed it and I’ll make sure that I go back in there, I won’t be used as go between any more.”

One student described how the difficulty of acting as a go-between actually influenced the way that she behaved towards the patient.

“ Okay, what did the nurses actually do for that particular patient? Is there anything that they did or didn’t do?

Well they didn’t spend time talking to her at all. If she’d rung the bell, you’d go to her and say oh what now we really are very busy that sort of attitude and it was only after I’d experienced that a few times I thought Christ you know I wasn’t doing that because I obviously I couldn’t give the painkillers but I was avoiding going near her bed area because I knew that I’d be put into a situation which I didn’t know quite how to handle and I knew I’d have to pass that onto staff which I did do on many occasions passed the information onto staff and then that wasn’t enough because nothing was being done about it. Just telling her and telling the staff it wasn’t going any further so she was

putting her trust in me expecting me to be able to get something for her to be able to relieve her pain and I'd go off and I'd come back and still nobody had been to her."

The feelings of helplessness discussed earlier often seemed associated with the students' views of their role as a student. One student described caring for a patient when the patient's diamorphine was discontinued by the consultant.

" I spent a lot of time with her to know that she really was in a lot of pain and that's the only thing that had been helping her was the diamorphine that they'd just sort of stopped. It was pretty bad because I just felt totally like helpless because I couldn't really go up to someone and say 'excuse me'."

This student's feelings of helplessness seemed to be associated with her perceived inability as a student to express her feelings about this particular patient's care.

4.7.4 Coping with patients in pain

When describing their experiences of caring for patients in pain students referred to behaviour or attitudes that seemed to help them to cope with their experiences. A couple of the students described how either a limited time in the placement or possibly limiting the time they spent with the patient seemed to help them cope. The following quote relates to a student's experience of caring for a patient in the labour ward.

" How did you, because obviously you were an observer in that situation, how did you cope with being in that role and having those feelings of surprise? Surprisingly okay I think because I knew that ... she was in the final stages of labour so I knew her actual pain wouldn't be lasting very much longer, within the next half an hour she would be delivered a child. Another one was that I knew I wasn't going to be there very much longer so that had a big..."

A number of the students referred back to aspects of their own personal experience to help them to make sense of the patient's experiences. One student described how her

own experiences of child birth helped her to cope with the pain of a patient in the labour ward.

“ And I think the fact that I’d already given birth so I know how painful it is. But I also know how quickly you forget how painful it is. You know what I mean? The actual pain, you know It’s painful but you can’t remember what sort of pain it was so I think that’s what kept me going.”

4.7.5 Causing pain and discomfort

As well as coping with patients experiencing pain nurses, as well as other health care workers, have to cope with performing treatments and procedures that may cause the patient discomfort or pain. The students interviewed were asked about their experiences of treatments or procedures that caused discomfort to patients to explore their feelings about this aspect of dealing with patients in pain.

Nearly all the students described having to perform treatments on patients that caused discomfort as upsetting. Typical of the responses were the following:

“ I mean some of the invasive things that you do are quite erm they’re psychologically uncomfortable because the patient is expecting something to happen and immediately they’re on the you know and no matter how good you are at calming them down and sort of reassuring them it’s still uncomfortable and you’re still invading their body and yeah it’s erm yeah it can be quite upsetting.”

“ Well you feel awful because you wouldn’t want to hurt anybody, and you know if someone was doing it to you that would hurt”

The students described coping with these feelings in a number of ways. Some students justified the pain caused by rationalising that it was in the best interest of the patient in the long term.

“ I felt awful but it had to be done and all I could think of was I’m doing it for her own good, it’s got to be done, I’m sorry if I’m hurting you but it’s got to be done, you know it’s going to help you in the long run so mind over matter if you like, I knew that it had to be done so therefore it didn’t so much hurt me as if I’d done it accidentally.

So, it’s your way of rationalising what you’re doing?

Yes.”

Other students described talking to the patients in an attempt to distract the patient from the treatment but also to gain reassurance from the patient that the student was not blamed for the discomfort.

“ A lot of situations I’ve sort of done the dressing and then carried on chatting to them for ages and they’re still talking to you and they’re still happy with you and they don’t really hate you that much!”

Other students also reported that talking to other staff or the student’s mentor also helped although students also reported that in some ways they became adjusted to it as they became more experienced. One student described this in relation to removing nasal packs.

“ Initially, horrible because I’d say things like if you want me to stop I will quickly get on with it. I remember there was one woman, I hardly even touched her pack and she was screaming to stop but I mean I’m afraid to say you become adjusted to it after eight weeks, you get the idea that this is going to hurt you can say you’re going to be uncomfortable is the phrase I think!

Not, this is going to hurt - badly! (laughs)

I think I became adjusted to it.”

“Right, and is that how you actually coped with those feelings do you think?

Yes, I suppose it was.”

Another student described the same experience in relation to giving injections

“ Okay, how did that make you feel knowing that what you were doing was actually hurting somebody?

Pretty awful actually, when you first do it it is pretty awful but then you do get into that kind of ‘well you’re having it, you have to have it so I’m sorry’ and even as a student I feel ‘oh I’m sorry I’m going to have to give you this injection’ and that’s it you don’t feel any remorse or, I was mortified, this poor woman didn’t even like injections and I’ve got to give her a heparin every morning or something but you do get quite used to giving things and not really thinking about the consequences.

Why do you think that happens?

Because you’re so frequently doing invasive procedures that you do get really, not blasé so it’s a job, it’s your job and you have to do it and you just get so used to it that every patient when you’ve done it so many times before, it’s just you get, it just gets built in I think.”

This description of becoming adjusted because its “your job” is perhaps similar to the increasing professional and objective behaviour described by (Davitz and Davitz 1981).

One student suggested that it was important to display this confidence for the benefit of the patient :

“ Oh yes. You have to you can’t go in to a situation even if you feel these emotions you can’t go in there thinking ‘oh my god I’m going to hurt this person because of what I’ve got to do to them’. You’ve just got to go in and be confident about what you’re going to do because that’s what they’re looking for. Patients and clients trust you the minute that you know, even though you’re a student nurse, they still trust you and they let you do all sorts of things to them that you know it makes you wonder sometimes.”

4.8 Definition of pain

To explore the students’ views of the nature of pain they were asked their views of the definition of pain given by McCaffery (1972). This is the definition that is commonly used in theoretical sessions on pain during their course however, if the students were unsure of the definition they were reminded of it before being asked the question.

The majority of students felt that this was a good definition of pain. Typical of this response was:

“ I think that’s fair enough I think that’s good. Lots of people have different experiences of pain. One pain to somebody could be really bad and somebody else could cope with it fine, differently.”

One student suggested that the concept of the patient being the expert on their pain enabled them to resolve doubts about the patient’s pain.

“ different peoples’ perceptions of pain so their perception of pain is very different and when you do like pain scales when you’re admitting ..you’ll be looking at them thinking well you don’t look very ill and you’ re already giving your own perception of things and then you ask them where they are on the pain scores from nought to ten and they say a nine you think well okay fair enough to him this person is a nine to them they are at the point where it’s verging on excruciating agony but you thought you have your own feelings but you’ve got to accept what other people say”

Some of the students although generally agreeing with the definition highlighted some difficulties. One student highlighted that although they agreed with the definition they felt that patients’ reports of pain still need interpretation.

One student also highlighted the fact that patients might not always say how much pain they are in

“ I definitely believe that pain is what the patient perceives it to be.
And, I think you’ve already mentioned that there are, do you think there are times when you feel patients don’t say how much pain they’re in?
It’s what the patient says it is that it’s you know based on your perceptions as well. If they say it’s a dull ache you know you think oh a dull ache like a toothache so you know it’s sort of interpreting what they say.”

A couple of the students had more doubts about the definition and highlighted difficulties suggesting that patients might use reports of pain to get attention.

“ I mean I know if someone says they’re in pain they probably are but again it’s down to perception and I know if I prick my finger, then I’m in absolute agony, and yet other people think ‘oh for goodness sake’ and so I mean I know we’re told if they say they’re in pain, believe it and act on it and within a little okay that’s fair enough but I think people can play on it or make it work to their advantage if they feel that they need to, you know like they’re not getting any attention - ‘oh I’m in agony nurse’ and tend to overreact and then it probably gives you a more, I don’t know worse opinion of them, and so next time you see someone in that much agony you think oh...”

It is interesting to note that some of the students, who accepted the definition when asked and therefore accepted the definition in theory, found it more difficult to apply the definition in practice. An example of this is one student, who suggested that she was in agreement with the definition, described caring for one patient after a dental extraction.

“ I know this sounds awful but she was in a ward with three other women and when we weren’t there she was chatting quite normally, there was no signs of her being in pain, she was just having a conversation, she wasn’t going ‘oh, oh gosh this hurts’, in between the conversation, it was just normal and then as soon as she saw one of us go by she’d be ringing the bell, ‘can I have some painkillers now?’, so you think ‘oh well you know’, because me I was saying ‘can’t we give her something’, you know ‘something mild because she’s in pain, she says she’s in pain’, and they’re going ‘no no she’s only putting it on, she’s only trying it on’, now I found that at the beginning of my training very difficult to appreciate because as I said that I think if people are, say they’re in pain, then they’re in pain, whether it be a slight toothache or whatever, then they are in pain but being in a situation where she’d be fine and you’d walk by and she’d ring the bell wanting some analgesia you’d think ah well is she putting it on or is it displacement she doesn’t think about it until she sees a member of staff and then she thinks ‘oh gosh I’m in pain’ you know so, I don’t know.”

4.9 Views relating to analgesia

A number of studies have suggested that nurses exaggerate the risks of addiction to opiate analgesics (Cohen 1980; Weiss, Sriwatatanakul, Alloza, Weintraub and Lasagna 1983; McCaffery 1990; McCaffery, Ferrell, O'Neil-Page and Lester 1990; Kubecka, Simon and Hardy Boettcher 1996) which may affecting their willingness to give an analgesic. The students were asked about patients' and their own views about the administration of analgesia and in particular their views on addiction.

4.9.1 Students' views of addiction

The administration of analgesia to patients did seem to cause anxiety amongst many of the students interviewed. Several of the students mentioned fear of the perceived addictive properties of the drugs. When asked about the fears of patients one student highlighted their own fears.

“ I think perhaps with morphine it probably is, ‘oh will I be addicted to this?’ because I know it crosses my mind, ‘will you be addicted to it?’ and that sort of thing, I think with the other basic ones like paracetamol, your anadins and stuff like that, I don’t think people realise exactly what they are and, ‘oh I’ll just take a paracetamol’, but it isn’t, it’s quite a dangerous drug and I don’t think their perceptions of, shall we say over the counter stuff, is as high as prescription drugs.”

The fears about drugs in general, as well as opiate drugs in particular, illustrated in the above quotation were expressed by several students. One student when asked what it was that made them anxious about giving analgesia, even though the student was supervised during the procedure suggested:

“ You’re pushing a lethal substance into somebody else’s body and they don’t know what it is you’re giving them or how much or why or you know the side effects but they should be aware of all drugs I think you give - from the heart. Just a brief overview of what sort of thing you’re giving but you know what sort of contraindications that drug’s got and you’re happy pumping it away in their body because somebody else has said that this person needs it.”

The fears of the effects of analgesia seemed to influence the way that some of the students felt about the analgesia that patients received. One student expressed her general aversion for drugs and suggested that she would not encourage patients to take drugs just because they were prescribed at a particular time.

“ I mean I hate taking tablets I’m certainly not about to sort of drink to anybody who’s got to have it now because it’s prescribed for you now...”

In this instance the student’s views of drugs is directly inked to their reaction to the behaviour of patients. The following quotation suggests that the student’s fears associated with analgesics may have influenced their views of the appropriate level of pain relief.

“ Sometimes it makes you wonder those people that didn’t complain of any pain at all they were given MST’s whatever, it makes you wonder if maybe the analgesia they’ve been given, the pain relief that they’ve been given is maybe a little bit too much because they’re not aware of the pain at all.”

The fears of students associated with analgesia also seemed to be associated with their limited knowledge of pharmacology. Although it could be argued that students, at the stage of their training when they were interviewed, should not necessarily have a detailed knowledge, the students themselves seemed to be anxious that they were involved in the administration of drugs that they had little knowledge of.

“ My knowledge of drugs is very limited at the minute, so I think initially I would certainly be quite cautious I suppose but I think as your knowledge grows and you’re perhaps sort of based in one ward and you get to know the type of analgesia prescribed and you know more about the drugs in general then I would think no I don’t think so...”

Four of the students were very clear that they did not worry about addiction. These students highlighted the fact that patients were not receiving analgesia long enough to

get addicted, that there was no research evidence that patients would become addicted and that patients in pain do not become addicted.

There was a perception amongst a couple of the students that staff were reluctant to give analgesia. One student described this as a reluctance to give strong drugs

“ There seems to be a reluctance sometimes to give stronger drugs. it seems to me that there has to be a lot of pain before a nurse will give anything, well any opiate, or you know volterol or something like that....

Why do you think that might be?

I think perhaps they're apprehensive about the danger associated with such things. And perhaps there's a fear of respiratory depression with some opiates.”

Students were divided on the question of the adequacy of the drugs given. Some of the students felt that patients on the whole received an adequate amount of analgesia however some students felt it was more variable and in some cases inadequate. One student suggested that there was a discrepancy between what the students had experienced in practice and the aims suggested in theoretical sessions

“ In the CFP we're taught you don't have to have patients in pain and there are a lot of people that do experience a lot of pain.”

4.9.2 Patients' views of analgesia

Although some students felt that patients did not worry about having too much analgesia several of the students felt that patients did worry. These anxieties seemed to be associated with the perceived addictive nature of opiate analgesia. When asked if patients worry about having too much analgesia, one student replied

“ It’s just the image of it I think because you hear about morphine and especially diamorphine, they call it diamorphine and not heroin, and all that kind of thing but yeah, I think it’s the image of it, that it is addictive.

Do you think that might lead to them not maybe asking for it as often?

Yeah, people are worried about, even with not as sort of strong analgesics, people sort of worry about the effect it’s going to have. ‘I’ll not take that and try and cope with it really’.”

Other students suggested that patients have a general dislike of taking any tablets.

“ Yeah, and I think a lot of them refuse it because they don’t like taking pills or you know they think they’ve had enough and refuse when really half of what they’re given is that insignificant, it wouldn’t do any harm anyway.”

4.10 Standards of pain relief

The results from the questionnaire suggested that the students’ views on the standard of pain control were varied with 54.4% suggesting the standard of pain relief was good or very good, while 45.7% thought the standard was poor or adequate. These differences in views were reflected in the comments on the standard of pain relief given by the students in the interviews.

Four of the students suggested the overall standard was good while three thought it was poor, one student suggesting the standard was very poor,

“ It’s rubbish, I have to be honest if that was me, well you do what you can but I’d hopefully try and do a bit more than what is going on.”

Students suggested a number of different ways for improving pain control. A change in attitudes was suggested by a couple of the students.

“ I mean it, being in pain is just everywhere you know I mean in the hospitals, nursing homes everywhere you know you’re not going to get away from it I think it’s changing people’s attitudes towards it. Doctors and nurses really.”

Several other students suggested that there was a need for more education.

“ I think doctors and nurses ought to kind of be, go on courses or something like we did in the palliative care thing to know what is safe and what isn't and have a greater understanding of pain and how different people can experience it and how important it is to keep it under control.”

Other students suggested that there was a need for more research and that pain should be given a higher priority and that there was a need to think ahead so that pain was prevented rather than waiting until the patient complained. Increased staff levels and more patient education were also suggested.

4.11 Complementary therapies

Although only two students had observed any complementary therapies being used, the students all felt that the use of complementary therapies could be helpful in relieving pain. Perhaps this view arises from previous experience or from the popularity of complementary therapies in current literature. Typical of the responses was the following:

“ Because pain is I think obviously analgesia is the most important thing but I think if someone can be distracted or someone can just have someone to talk to have some kind of interaction apart from sitting there in a hospital ward. I think complementary medicine is brilliant, I think it would definitely help, definitely.”

4.12 College input

When asked about the teaching students had received about pain in their course the students gave a mixed reaction. Several suggested that the teaching they received had been of limited value.

“ I wouldn’t say anything really that I remember that would be of any use. I mean we’d done the sort of biological side of pains and pain pathways, gateways etc. which was useful for you to understand how pain travels through the body and through the nerves and whatever erm but nothing really on the psychology side of things, the behavioural sciences side of things on how people cope with pain. Not that’s worth mentioning.”

The view expressed by this student that the focus had been on biological aspects of pain was shared by several of the students although some of the students seemed to remember little about the sessions they had received.

“ Biological side of it, pain pathways and things like that. We probably had some sessions on alleviating pain as well somewhere along the line.”

The two students who did remember more about the input they received remember sessions relating to palliative care. One student expressed an interest in becoming a Macmillan nurse.

“ We did the pain, pain control, the gate theory they gave us a talk on that which was really excellent and I would like to think that in a few years time I could become a Macmillan nurse.”

Another student remembered a particular session that inspired them again associated with palliative care

“ We did a session on modules 28/29 on palliative care and we did a pain relief session and TLC and we had a tutor from (a palliative care unit) and we really, that was a brilliant session, it really was very interesting. He was talking about pain and how it’s controlled and various drugs you used and how much the doses and the side effects and not just talking about physically patients, holistically he was really impressive. A very enjoyable session. I definitely remember that.”

In the light of the limited impact that sessions in the colleges seemed to have had on most of the students interviewed it is interesting to note the emphasis that some of the students put on their clinical experience.

“ More constantly things on pain, I find that things like pain, I find they're not, they're dealt with better in practical situations rather than, the only real thing I can say that I remember is the McCaffery...”

Some students also highlighted a practice theory gap in relation to topics such as assessment.

“ I haven't seen pain assessment used all that much I mean as I said in the community they had nothing at all and I've only seen one nurse use that verbal pain scale and there was no I haven't seen them on any pain scales used on any previous wards either so whether they're used or not maybe perhaps more on surgical places they are but I haven't seen them in place no.”

Another student highlighted the difference between the way pain was addressed in the classroom and what they saw as the realities of the practice areas. When talking about the input from the college the student suggested that the approach in the college

“was always to believe the patient totally which I suppose as I said earlier on isn't a bad principle to start with on face value but I don't think they also get you ready for, nobody also covered that you would go on the wards, particularly earlier on when you're all fresh faced and you're never ready for when the nurses take the 'oh that's just Mrs (..) she's off again'”

Although this gap between theory and practice seemed to be problematic for some, one student suggested that there was a need for college input to prevent the students adopting the same practices as they experienced in the placements.

“...a refresher towards the end of the branch programme would be beneficial because we're getting to that stage now I think where we as students are taking on the habits of qualified staff and college sort of breaks that in certain places, which I think is a good idea...”

Students were asked if any of the input they had received in the college had changed the way they felt about pain relief. Students interviewed highlighted a number of different issues. Some students suggested that it had influenced their views on analgesia making them less cautious about the risks associated with analgesia.

“ It’s mainly less cautious about how much pain relief you can give to people and how they really ought to have as much pain relief as they can. I got quite angry like that situation with the elderly person. Just really annoyed that people aren’t giving them pain relief when I sort of know from lectures and what have you that they could be given a lot more safely.”

Other students highlighted that the education they received changed their perceptions of the aim of pain relief.

“...no patient has to be in pain you always thought it was just a part of sort of life.”

The majority of students felt that they needed more input in relation to the relief of pain. There were a variety of aspects that the students felt should be covered in more detail including more information on pharmacology, although one student acknowledged:

“ I think it’s one of those never-ending subjects, you can’t learn enough, yeah I think we need to have a couple more lectures but I don’t think it stops there I think even when we get qualified I think you’ll always have to be reading round or being educated or...”

The students did however seem to feel that pain was a topic that should be addressed early in the course

“ You don’t get pain relief until later on I think because you’re coming into contact with it almost immediately that you should know something about it.”

4.13 Changes in attitude

The effect of the experiences of the students during their course on their inferences of pain was assessed using the standard inferences of pain questionnaire. All the students interviewed had been selected on the basis of their pain scores on the questionnaires. The students interviewed were both students whose pain scores had increased over their common foundation course and students whose pain scores had decreased. The students were asked during their interviews if they felt that their views about pain had changed during their course.

One of the common themes that emerged from this question was a theme of becoming more sympathetic towards patients experiencing pain. It is interesting to note that all of the students whose comments reflect this theme were students whose pain scores on the questionnaires had increased, in effect their pain scores reflected the increased sympathy.

“ I don't know why really I suppose it's just seeing so many patients in pain you kind of try and envisage what they're going through and especially you know the family's around and if the patient's quite poorly and upset about it it's not easy really. You kind of become, try and envisage what they're going through and stuff, you don't so yeah I think I've become more...

So, you feel you've become more aware of what it's like?

Oh, definitely yeah.”

“ *Okay, do you think your attitude to patients in pain has changed since you actually started the training on the course?*

A lot more sympathetic I think. Yeah.

Why do you think that might be? Why do you think you're more sympathetic?

Because of my experience of how it's been badly managed when it's not as sort of clear cut, 'Oh well they've got to be in pain because they can't have any more pain relief' and in a lot of cases it could be better managed but isn't.”

“ Yeah I think you see before you saw people as moaning or whatever, but you do see people, that they are really in pain, not just wanting attention.”

Previous research has found decreases in students' pain scores as measured by the SMIS questionnaire during the initial stages of their training (Lenburg, Burnside and Davitz 1970b; Davitz and Davitz 1981). Although this study also found a decrease in the students' pain scores this was not significant. The students whose scores increased showed a change in the opposite direction to that predicted. However there are similarities in the feelings some students expressed and those expressed by students in previous research studies. Davitz and Davitz (1981) in the interviews with students described a process of being acculturated, the adoption of the belief systems of the nurses the students encountered. One student described a similar process which was described as a process of normalisation.

“ Well I suppose when I started you'd be more caring, more sympathetic, you'd think 'if I was like that I'd be awful' but then you, there's this I don't know sort of normalisation and you almost get into your role and although you try not to sort of follow in other people's footsteps it's very hard because you get pushed into it and you're trying to swim against the tide and you know you try and do your best but then when you're not there it doesn't get done anyway and you get very, I don't know, philosophical about it all really.”

Another student suggested a similar process although using different terminology

“you lose that fresh faced oh that patients in pain we'll do something...I don't think I ever want to lose that initial idea of perhaps that nobody should be in pain but I think it has to be tempered with a bit of realism.”

Despite the process described in these two quotes the two students who described these feelings both increased their pain rating scores on the questionnaires. There were several other responses to the question relating to changes in attitudes from students whose scores on the questionnaire decreased over the common foundation course. One student felt they had not changed while other students described what seemed to relate to an increased confidence in caring for patients in pain resulting from the students increased knowledge.

“ I think I’m a bit more equipped now to know maybe what to do however where before ‘what am I going to do?’ - reach for the paracetamol whereas now maybe I’d be a bit more equipped to sort of actually sit down and talk about it and then maybe get the drugs.”

There were some changes that may affect the standard of care offered to patients in the future. One student highlighted that their experience had altered their view of the possible outcomes of pain control.

“ Really as I said before I went into training you expect that most pain can be relieved or removed completely, now you can give what you can but it might not work.”

Two students whose pain scores on the questionnaire had altered in opposite directions both highlighted that experiences with particular patients had altered their beliefs about the reporting of pain by patients. Both reported being more sceptical about patients’ reports of pain.

“ Yeah, it’s like I was saying before about the manipulation you know, ‘I’ve got this pain in my leg’ or ‘I’ve got a pain in my neck’ and you know have they really got that pain? Are they saying it through habit because every time I saw this particular person he’d got a pain in his knee and a pain in his neck and I don’t want to disbelieve that he’s in pain but it does cross my mind sometimes.”

Another student who suggesting that their attitude had not changed seemed to have developed a more sceptical approach.

“ no in some respects I don’t think it (attitude to pain) has but that incident when I said about the young girl displacing it and then the staff walking bymakes me a) when I go onto a ward and they tell you about all the patients I always ask ‘well have they got any different behaviour, like do they complain about pain or do they just complain for the sake of complaining?’, it will always make me ask more questions but I don’t honestly think that my attitude has really changed.”

These doubts about the reliability of patients' reports of pain may have consequences for their future practice and is in contrast to the student's acceptance of (McCaffery 1972) definition.

Chapter 5 Discussion

5.1 Inferences of Pain and Psychological distress

This study found that students surveyed at the end of the common foundation course of a P2000 style training and an undergraduate course showed an increase in psychological distress scores as measured by an adapted version of the SMIS questionnaire (Davitz and Davitz 1981). The students' increased sensitivity to psychological distress supports the contention that nurse education is increasing students' sensitivity to the psychological impact of different conditions. This result is similar to previous studies which have identified an increase in psychological distress scores (Lenburg, Burnside and Davitz 1970b; Davitz and Davitz 1981) and shows that the changes identified by other studies carried out in the United States of America can also be identified in a sample of student nurses in the United Kingdom. This suggests that the changes in student inferences of psychological distress over the first year of nurse education are not confined to the United States of America and can be identified in a different country with different culture and nurse education system.

This study did not however identify a decrease in inferences of pain over the common foundation course. This is in contrast to the studies carried out by Lenburg et al. (1970b) and Davitz and Davitz (1981) which found a decrease in pain scores during the first year of nursing education. The finding that students' pain scores did not decrease does not support the contention that students become desensitised to pain during the early experiences of their course.

The finding that students did not decrease their pain scores, as may have been predicted by other studies, is open to various interpretations. It could be welcomed as it suggests that students were not as a group becoming desensitised to pain by the educational and practical experiences that they encountered during their common foundation course. It may be less reassuring that although there is an increase in

sensitivity to psychological distress no comparable change occurred in relation to pain scores. A lack of appropriate comparisons or studies that follow the students through the whole of the educational process means that it is difficult to explain the different changes in inferences of psychological distress and pain.

There may be several explanations for not finding the same decrease in pain scores as some previous studies. As the previous studies that have identified this decrease have been carried out in the United States of America, there may be a cultural difference which means that the same processes that result in a decrease in pain scores in the United State do not exist in different cultures and education systems. Although this study involved students from several sites it involved students from only one college and one university department and further studies are needed to establish whether this effect would be found throughout the United Kingdom.

Although previous studies have identified that the key period for changes in pain scores is the first year of the course (Davitz and Davitz 1981) the changes in nurse education in the United Kingdom with the introduction of the P2000 style courses may give students more limited exposure to patients in pain during the first year than a traditional course. The vast majority of students surveyed in this study report having some experience of caring for patients in pain and therefore the changes in the experiences students have during the early stages of their course may not be such an important factor. There may however be an influence of repeated experiences of caring for patients in pain leading to a desensitisation. The limited exposure of students to patients in pain during the common foundation programme may be inadequate to produce this effect and therefore studies following students through the whole of their training are needed to explore this. The nature of the placements the students experience may also be important although in this respect it is interesting to note that there was no difference in inferences between students who had an adult experience on a surgical ward compared to the students who had an adult experience

in a different setting. This finding does not support the suggestion that exposure to caring for patients in pain leads to desensitisation and a lower pain score. It is interesting to note that the inferences of pain and psychological distress of the nurses in this study did not support the findings of some previous research that has identified differences in inferences of pain or the accuracy of pain assessments according to the length of nursing experience (Perry and Heidrich 1982).

Differing experiences during the CFP may be a factor in explaining the large standard deviation shown by both the pain and psychological distress scores which indicate that there were changes in different directions for both measures. It is difficult on the basis of this study to explain why different changes in inferences should occur as there were no clear relationships found between changes in inferences and factors such as previous nursing experience, having experienced a painful illness, student age or gender, nursing school or intended branch.

Some of the limitations of using the type of questions in the SMIS questionnaire were highlighted in the discussion of the validity of the questionnaire. The vignettes provide limited information and rating these on a seven point scale is a fairly crude measurement representing only one dimension of pain. There is a possibility that the SMIS itself is insufficiently sensitive to measure changes in the students' inferences of pain over the CFP.

Students who commence nurse education come from a variety of backgrounds and will have had a variety of life experiences. There will be differences in their experiences of dealing with others who are suffering from painful or psychologically distressing illness. While some students entering nurse education programmes may have had little or no contact with pain and suffering, others may have had experience through previous care work or personal experience. The nature of pain means that the students will have developed an understanding of pain which they will have learnt

through their life experiences and processes of socialisation. During their education students will begin to come into contact with patients who are in pain and discomfort. They will have to learn to deal with these patients which Davitz and Davitz (1981) suggest will influence their beliefs about suffering. As well as the influence of their first hand observations of patients the students may be influenced by the attitudes and beliefs of colleagues, tutors and other nurses. It is important to understand the attitudes towards pain and suffering that the students possess on entering the course and any changes in these views during the course as these may have an important influence on the care of patients.

The results of this study suggest it is possible to identify some of the elements of the students' understanding of pain at the beginning of the course. The students' responses to the questionnaire suggest that they see pain and discomfort as different to psychological distress as there were significant differences between their scores on these scales. This is a similar finding to that of Davitz and Davitz (1981) who also found that in general nurses tend to infer a greater degree of psychological distress than physical pain in evaluating the suffering typically associated with most illnesses and injuries. Study two also found that psychological distress scores were consistently higher than the pain scores suggesting that this is a consistent finding amongst nurses with varying lengths of nursing experience.

The results of the questionnaire suggest that it is also possible to identify the influence of socialisation on the students' understanding of the meanings of pain in relation to for example gender and age. Although there were no statistical differences in the students' pain scores the psychological distress scores for female cases were higher than those for male cases and the fact that there was no change with time suggests these are views that are present on admission to the course rather than occur during it. This suggests that the students perceive the emotional response to illness as being different for men and women. Gender related differences have been reported in other

studies for example Davitz and Davitz (1981) found that nurses tend to see female patients as suffering more pain and psychological distress than male patients. There is also evidence from work by Bendelow (1993) that gender is an important factor in relation to the experience of pain and suffering. Bendelow explored the relationships between the perceptions of pain and the social characteristics of individuals and found that 'lay' understandings of the meanings of pain led to the attribution to women of a superior capacity to cope with pain. This ability was associated with women's biological and reproductive function which it is argued is underpinned by cultural expectations of roles and socialisation. The cultural expectations which resulted in the expectation that women would cope better with pain were:-

1. The greater readiness to report pain /talk about feelings
2. The greater likelihood that they will act on symptom/seek support or help
3. Their childhood socialisation to develop and encourage caring for others/imagination about how it feels to be in pain/distress
4. Women's ontological security and sense of identity may be less threatened by the admission of being in pain than is the case for men, for whom the psychological structure of masculinity is predisposed to inhibit the admission of vulnerability.

The attribution by students in this study of higher psychological distress scores to women may be a reflection of these differences and the perception of women as more likely than men to report their experiences. These perceptions were not altered by the students' experiences during the common foundation course suggesting that the students' perceptions of gender relations to pain resulted from socialisation processes or pre-course experiences.

The influences of pre-course socialisation and experience on the students' views about factors influencing pain and psychological distress are also demonstrated in the results of this study in relation to age of the patients as well as gender. The age of the cases proved to be a factor that influenced inferences of pain and psychological distress.

The higher pain scores that were given to children compared to the adult and elderly groups were not reflected in the psychological distress scores. The students seemed to think that although they may experience more pain the children would find this less psychologically distressing.

It is not clear why students should perceive this difference. There may be a perception that children understand less about their illness than adults and therefore they may not be as distressed by the condition. Children may have particular difficulties in communicating their pain due to immature language and cognitive processes (Gaffney and Dunne 1986; Bieri, Reeve, Champion, Addicoat and Ziegler 1990) which may lead to a perception amongst nurses that children may experience less distress.

Differences in the pain and psychological distress scores for different age groups have also been reported in previous studies (Davitz and Davitz 1981; Mason 1981). Carter (1994) identifies a number of commonly held misconceptions about children's pain all of which have been shown to be false. These include that children experience less pain than adults. The results from this study suggest that this misconception is not held by these students but the fact that psychological distress scores are lower suggest this is an issue that needs further exploration as any assumption that children are less distressed may lead to nurses providing a lack of psychological support for the child in pain.

The finding that differences in inferences of pain and psychological distress in relation to gender and age were maintained through the common foundation course highlight the importance of understanding the socialisation processes that occur, and the perceptions relating to pain and suffering that students hold before, they commence the course.

It is possible that changes in the students' inferences during the common foundation course may have been masked by the students pre-course experiences. Students' inferences may have changed due to their experiences before the course and therefore be unlikely to change any further. The results suggest however that there were no differences at the time the students entered the course between those who have or have not had pre-course experience. The age of the students did not show consistent effect on pain scores while gender or intended branch of the students showed no relationship. None of these characteristics were shown to influence psychological distress scores.

Although no differences in inferences of pain or psychological distress were found between students who had or had not experienced a painful illness there was a difference in the nurses' inferences. The influence of previous personal experience of a painful illness was demonstrated by the higher rating of psychological distress scores by those with personal experience a similar finding to Holm, Cohen, Dudas, Medema and Allen (1989). This suggests that personal experience of illness may increase the nurses' sensitivity to the psychological distress caused by such an illness but it has no effect on the inferences of pain. This is in contrast to previous studies that have identified influences on pain scores of personal experiences (Davitz and Davitz 1981; Ketovuori 1987).

5.2 Views of pain relief

The results of these studies identify that there were some significant changes in the students' views about pain relief during the CFP. The students had varying views about the aim of pain control when commencing the course although the majority thought the aim of pain control was to relieve the pain as much as possible with only a small percentage suggesting the aim was to relieve the pain completely. These results are comparable to those found by Sofaer (1984) and Cohen (1980) although the patients' views of the aim of pain relief found by Cohen were quite different with

28.6% suggesting it was to relieve the pain completely. Although Cohen's study was carried out 16 years ago and therefore it cannot be assumed that the patients' views would necessarily be similar today, the discrepancy between the views of patients and the students is an interesting one as compared to the patients in Cohen's study the students showed a more pessimistic view of the aim of pain relief. There was a significant change in the views of students during the CFP with an increase in the number of students expecting to relieve the pain completely bringing them more into line with the views of the patients in Cohen's (1980) study.

Although the views of the students altered significantly during the CFP and their views became more like those of the nurses, there was still a significant difference between the students' and the nurses' views. A higher percentage of the nurses than the students identified the aim as being to relieve the pain completely while a smaller percentage of the nurses identified the aim to be to relieve the pain to the extent the patient could function or tolerate. However, in common with other studies, there seems to be a disagreement amongst nurses as to the aim of pain relief with the nurses fairly evenly split between those believing the aim of care is to relieve pain completely and those believing that the aim should be to relieve the pain as much as possible. The results of the current study show a difference in nurses' perceptions of the aim of pain relief compared to previous studies with 47% of the nurses in this study suggesting the aim should be to relieve the pain completely compared to 3.3% (Cohen 1980), 21.4% (Weiss, Sriwatatanakul, Alloza, Weintraub and Lasagna 1983) and 9% (Sofaer 1984). Although this finding needs to be further investigated, the increased focus on pain relief since the Royal college of Surgeons and College of Anaesthetists' (1990) report which suggested that no surgical patient should be in pain, may have had the effect of changing nurses' perceptions of the aim of pain relief. Fordham and Dunn (1994, pg.8) refers to the increased literature as the "messianic call to relieve or prevent pain" but goes on to highlight that human responses to pain are complex and on occasions may paradoxically lead to pain being enhanced. The desirability of an aim of complete pain relief can be questioned. Acute pain can act as

a warning to prevent tissue damage and complete pain relief may leave a patient open to unintentionally over stressing a wound for example. (Walker 1995) believes that the suggestion that freedom from pain should be regarded as a human right is probably unachievable, may be undesirable and is really little more than rhetoric. The increase in the number of students considering the aim of pain relief to be to relieve the pain completely may also cause difficulties for the students if this is not what they observe in practice. There is a need to explore further the aims of pain control and to agree common aims perhaps by accepting the standard that is set by the patient.

The students' views of the standard of pain relief in contrast to their views on the aim of pain control did not show any significant change over the common foundation course. The lack of change in the students' views of the standards of pain relief suggests that their experiences in the CFP have not significantly changed their views of the standard of pain relief, either because they confirmed the views they held on entering the course or they have not had enough experience to change their initial opinions. The small increase in the number of students answering this question following the CFP is a reflection of the fact that a number of students omitted this question in the initial survey possibly because they felt they did not have enough knowledge or experience to answer the question. The changes in the students' views of the aim of pain relief may have derived more from the input from the college, which seemed to be the implication of some of the students' statements in the interviews.

The nurses had a slightly poorer view of the standard of pain relief than the students as there was a very weak significant difference between the nurses' and students' views of the standard of pain relief at the end of the CFP. It is possible that the students have less experience of good pain relief against which they can judge the care that is observed or that nurses have higher expectations of the pain relief that

they feel could be provided. The views of the nurses in relation to the aim of pain relief tends to support this second conclusion.

A fear of the risk of addiction to opiates has been suggested as a possible contributing factor to under treatment of patients. The overestimation of the risk of addiction may lead to nurses' fears reinforcing the fears of patients (Seers 1987a). This study found that at the beginning of the course the students' perception of the risk of addiction represented a significant over estimation of the risks of addiction. Taking the estimation of the risk of addiction as less than 1% which is the level accepted by most writers (Cohen 1980; Porter and Jick 1980; Weiss et al. 1983; McCaffery, Ferrell, O'Neil-Page and Lester 1990; Kubecka, Simon and Hardy Boettcher 1996) only 24% of the students identified the correct level. This degree of over estimation of the risk is similar to that found amongst nurses (Cohen 1980).

There was a significant difference in the views of students by the end of the common foundation course suggesting that nurse education was having an effect in giving the students a more accurate perception of the risk of addiction. Despite this success 55% of the students still overestimated the risk. The results also showed that there was a more accurate estimation of the risk of addiction by the nurses than has been found in some previous studies. In this study 78.4% identified correctly that there was a less than 1% risk of addiction compared to 31.6% (Cohen 1980), 11.4% (Weiss et al. 1983), 24.8% (McCaffery et al. 1990), 41% (McCaffery 1990) and 29.3% (Kubecka et al. 1996). The more accurate perception of the risk by the nurses still left 21.5% of nurses overestimating the risk of addiction. There is still a need therefore to address the issue of the fears of addiction in both pre and post registration education.

The need for continuing education in relation to pain was also illustrated by the answers to the questions from the self administered questionnaire (Sofaer 1984).

Overall the nurses showed a good knowledge although the answers to the statements relating to the assessment of pain were the most inaccurate.

Nurses seemed unclear about the concept of adaptation to pain, a similar finding to Hamilton and Edgar (1992). 38% suggested that the statement suggesting patients adapt to pain was incorrect. This has important implications as if nurses do not accept both physical and behavioural adaptation to pain they will continue to observe patients for behavioural and physical signs of pain, and in the absence of these signs may conclude that there is no pain. This can also lead to nurses having doubts about the legitimacy of pain in patients who are not showing behavioural or physical signs of pain.

A second question which has important implications in relation to pain assessment was the statement which suggested that knowing the cause of pain allows us to predict the duration and severity of pain the patient will suffer. 37.3% of the nurses suggested that this was true. This suggests that these respondents may base their expectations of pain on the nature of the illness or the type of operation rather than an assessment of the individual's experience in a similar way to that identified by Wiener (1975). If nurses suggest that they can predict pain according to the type of operation the patient is experiencing this may lead to inaccurate assessments and perceptions of patients as over-reacting. However this question illustrates one of the limitations of the self administered questionnaire (Sofaer 1984) which allows only a "true", "false" or "don't know" response. While patients with the same operation can vary greatly in their experience of pain, nevertheless type of operation is one of the many factors that are related to experience of pain (Alexander and Hill 1987). Thus the answer to this question is not entirely straight forward as an experienced practitioner's knowledge of the cause of the pain in relation to surgery does give an indication of its likely severity.

The third statement that the nurses gave a varying response to was the statement relating to the use of narcotic analgesics. Half the nurses felt that the statement suggesting that narcotic analgesics were usually the only effective drug to combat narcotic responsive severe pain was false. This response suggests that nurses are also unsure of the efficacy of narcotic analgesics which may affect their willingness to give opiate drugs and may contribute to under treatment. A number of previous studies have identified a lack of knowledge in relation to analgesics (Marks and Sachar 1973; Sriwatanakul, Weis, Alloza, Kelvie, Weintraub and Lasagna 1983; Weiss et al. 1983; Sofaer 1984; Hosking 1985; Watt-Watson 1987) and although there seems to be a more realistic assessment of the risk of addiction amongst the nurses in this survey their knowledge about analgesics still needs improving. This question may however have been difficult to answer for an experienced practitioner who may well have knowledge of the benefits of a combination of narcotic and non-narcotic analgesia. In this case they may have chosen the false response.

Although the self administered questionnaire (Sofaer 1984) did demonstrate some deficits in knowledge the limitations of the true/false nature of the questionnaire illustrated above mean that the results should be interpreted with caution.

5.3 Nurses' assessment of patients' pain

If a difference of two categories on the scales used is taken as a difference in scores then this study found that just over half of the nurses' assessments were different to that of the patients. Although this is a lower percentage than that found previously by Seers (1987a) it is of concern that nurses' assessments of patients' pain should differ so considerably from that of the patients. These findings are of concern especially when it is born in mind that the nurses were free to select the patients that they were rating and that on several occasions nurses declined to give an estimate for patients they felt they did not know well enough. Thus the nurses were assessing patients when they felt they had a good perception of the patients' pain. On some occasions

the nurses would assess the patient before completing the visual analogue scale, this usually consisted of a general question such as "are you all right ?" or "how are you feeling ?" In most cases the nurses seemed to base their assessment on the patient's requests for pain relief or on their behaviour or non-verbal cues. There was little evidence of any systematic pain assessment.

The inaccuracies in the nurses' assessments were equally divided between over and underestimating patients' pain levels. This was in contrast to the study by Seers (1987a) which found that nurses consistently rated patients' pain lower than the patients' ratings. This may be due to differences in the patients included in the study and the finding of Zalon (1993) and Walker, Akinsanya, Davis and Mercer (1990) that nurses tend to overestimate mild pain and underestimate severe pain. Seers (1987a) studied patients undergoing elective abdominal surgery while the types of surgery experienced by patients in this study were more varied. The differences in the degree of over or underestimation in studies may therefore be related to the pain levels of the patients in the study, a higher degree of underestimation being due to a larger percentage of patients with severe pain. There were a limited number of patients with high levels of pain which therefore may have limited the opportunity of the nurses to underestimate the patients' pain. The results of this study also support the contention that nurses tend to overestimate mild pain and underestimate severe pain. This highlights the importance of ensuring that systematic assessment of pain is carried out for all patients.

It is important to note that the nurses included in this aspect of the study were selected on the basis of their scores on the questionnaire and are not necessarily representative of all the nurses. The null hypothesis that there would be no difference in the high and low rating groups in terms of the overestimation or underestimation of pain can be accepted on the basis of the results of this study. Although there was a tendency for the high rating group to overestimate the patients' pain compared to the low rating

group this was not significant. A repetition of this aspect of the study with increased numbers is required before clear conclusions can be drawn about the relationship between the scores on the questionnaire and their assessments of pain in clinical practice.

The lack of a significant link between the nurses' inferences and their assessment of patients' pain is an important finding in relation to inferences as measured by the SMIS questionnaire. As this was intended as a measure of the construct validity of the SMIS the lack of a significant relationship between the nurses' inferences and their pain assessment means that care must be taken in interpreting the findings of the SMIS. Statistically significant changes in inferences as measured by the SMIS are not in themselves of clinical significance unless the differences are shown to influence the way patients in pain are assessed and cared for. The findings of Davitz and Davitz (1981) that there is a significant link between inferences and the way nurses care for patients suggest that inferences as measured by the SMIS questionnaire are of clinical significance. The findings of study two however do not support this.

5.4 Students' experiences of caring for patients in pain

The students' experiences of dealing with patients, as described in the interviews, resulted to a certain degree in a view of pain that reflects the conceptualisation of pain as an individual experience. Their views suggested that they acknowledged the individual nature of the pain experience. Students' explanations of this individuality suggested that it was due to varying responses to experiences that were essentially similar. They maintained a concept of pain that reflected the division between the pain stimulus and the pain response. The acknowledgement of the individuality of the pain response however did not prevent them from expressing views about particular characteristics that they felt influenced the response to pain.

The results of the questionnaire highlighted the fact that students felt that gender was an important influence over patients' experiences of pain. Although the students seemed on the whole to believe that gender was an important influence the interviews revealed there were almost directly opposing views. The view expressed by some that men have a 'macho' image that limits their expression of pain does receive some support from research studies. Levine and De Simone (1991) exposed male subjects to the cold pressor test and randomly assigned them to male and female experimenters in a balanced design. The results showed that men reported significantly lower pain ratings to a female experimenter than to a male. The authors suggest that this is due to the traditional gender role and that men respond to women in a more stoical "macho" image. The vast majority of students in this study were female and therefore this may have resulted in a similar effect to that noted by Levine and De Simone (1991). The view that men are less likely to express their pain also reflects the 'lay' perceptions that were identified by Bendelow (1993) who also suggested that men's ontological sense of security and identity may be more threatened by reporting pain than women.

Although there is support from other research for the view that men are less willing to report their pain level the majority of the students interviewed held the opposite view. This seemed to result from their experiences in clinical placements although this may have reinforced preconceptions that the students held before the course. The importance of these preconceptions is that any view that suggests that men or women are more or less likely to report pain may lead to gender stereotyping and interpretation of an individual's pain experience in the light of their gender. This may lead to inaccuracies in the assessment and poor standards of pain relief. There is a need to ensure that students are given an opportunity to explore and confront their preconceptions of the effect of gender on pain and pain behaviour in order that they can develop an awareness of the possible effects this may have on their interpretation and treatment of individual patients. This is a responsibility of nurse educators who

as well as giving students an understanding of the relevant research need to ensure that students are given opportunities to explore their experiences and to reflect on their interpretations of patients' experiences.

The need to give students an opportunity to reflect on and develop an awareness of their views of factors that influence patients' perception of pain is also reflected in their views of cultural influences. There is good evidence that cultural factors do influence pain behaviour (Zborowski 1969; Lipton and Marbach 1984) and therefore it is not surprising that the students have identified this as a factor. It is important that nurses understand cultural influences in relation to pain so that they have a perception of why different ethnic groups may react differently and that those of a different ethnic background to the nurse are not disadvantaged by inappropriate stereotypes being applied. There is a danger however that this may lead to culture stereotyping, expecting people to respond in certain ways because of their cultural background. Again therefore there is a need to address this issue in the preparation of nurses in order to ensure that nurses understand that there are individual variations within cultural groupings.

As well as the views of the students relating to gender and cultural influences students' interviews indicated that they also had perceptions of pain related to the conditions that the patients were suffering from. Previous research has suggested that the nature of the illness is an important factor in the assessment of pain by nurses (Davitz and Davitz 1981; Short, Burnett, Egbert and Parks 1990) but there is a danger that preconceptions about particular conditions may lead to the conceptualisation of particular conditions or types as surgery as more or less painful (Sofaer 1984).

Patients who experience pain above what is considered to be an appropriate level may then be labelled as complainers or pain as being psychological. Students need to be helped to develop their understanding of pain to ensure that they are aware that pain experience does not directly relate to the nature of any illness or treatment.

5.5 Pain assessment

Effective pain assessment is difficult and requires considerable skill. Fundamental to the assessment of pain is the acceptance of what the patient says which is the concept encapsulated in the definition of pain proposed by McCaffery (1972) and therefore the students' views of this definition are important in relation to pain assessment. The majority of students accepted this as a good definition of pain although it is interesting that a number of students highlighted what they saw as difficulties. In situations where doubt about the patient's report of pain was suggested this was linked to the lack of physical or behavioural signs of pain. The reliance of nurses on behavioural or physical signs to confirm the patient's verbal reports of pain has been highlighted in previous studies. Saxey (1986) also found that although 86% of the 35 nurses studied agreed with the statement that pain is what the patient says it is, 69% actually chose non-verbal methods as being the criterion most indicative of pain, while only 31% chose the patients' verbal report. The students in this study reported instances in which they felt patients did not say how much pain they were in. In some instances this seemed to be because the students felt the patient was in more pain than they were reporting. There was also a suggestion by some students that patients might use reports of pain to get attention and that this may have the effect of influencing the way the students view further reports of pain. Thus there seems to be an acceptance of the theory that what patients say about pain should be accepted but that this seems to be difficult to apply in practice.

The students highlighted a number of reasons why patients may not report their pain. These included not wanting to be a nuisance and due to staff being busy. Thus the students acknowledge instances in which they felt there were influences on the patients which might result in patients not reporting their pain. It seemed in these cases the students were able to identify behavioural and physical signs that suggested to them that the patient was experiencing pain despite a contradictory verbal report.

This suggests that the students were willing to accept pain on the basis of non-verbal evidence even with a lack of verbal support, but were less willing to accept a verbal report of pain if there was a lack of non-verbal support which emphasises the reliance on non-verbal and behavioural aspects of pain assessment.

Some of the students' comments reflected a belief that it was the patients' responsibility to report the pain that they were experiencing. The students suggested that patients did not tell them that they were in pain and in one case the suggestion was made that the request did not come in time to provide pain relief. The expectation that patients will report their pain or ask for pain relief has been reported in previous studies. Seers (1987a) for example reported that 68% of nurses surveyed felt that patients would always or often ask for an analgesia although only 37.5% of the patients said that they would and 42% expected the nurses to know. The perception that patients will ask if they are in pain is one that may contribute to under treatment and is one that needs to be corrected. Techniques such as patient controlled analgesia help to overcome this problem to some extent as the patient can administer the pain relief when they need it however there will always be some patients for whom this technique is not available or appropriate and for these patients it is important that systematic pain assessment is carried out and that nurses do not rely on patients reporting pain or requesting analgesia.

5.6 Students' views of nurses

The suggestion by several of the students that they felt they learnt most about pain and pain relief in the clinical placements highlights the influence that their experience in practice settings has. The influence on students of their practical experience as compared to the input the students receive from the college has been explored by Melia (1987). The influence that nurses as role models have over students mean that students' perceptions of nurses' responses to patients in pain are very important.

Students discussed their observations of nurses' responses to pain in the interviews and highlighted a number of incidents in which the student felt that the nurses' responses were inappropriate. These incidents seemed to relate most frequently to interpretation of patients' behaviour as over-reacting or attention seeking especially in patients who asked for pain relief too often. Although it appears from the interviews that students were uncomfortable with these judgements they often tended to justify the reaction of the staff on the basis of how busy they were or the fact that the staff were with the patient for longer than the students.

It must be a matter of concern that students are experiencing inappropriate reactions by nurses to patients in pain during their clinical experience. It is difficult to assess from the interviews the effect this may have on the students but as Walsh and Ford (1989) suggest inappropriate reactions by nurses will set a poor example for students and in this study one student described how the reaction of the staff had influenced the way that she responded to the patient. This is not a new concern as Graffam (1979) described similar concerns about students' experiences. Students need to be given an opportunity to explore and reflect on the relationships between nurses and patients that they observe and to interpret what factors influence these relationships. Students need to be able to identify inappropriate reactions and to reflect on the way that individual patient reactions are interpreted.

The students' identification of staffing levels as being important in the reactions of staff highlights the influence of organisational factors over pain relief. Fagerhaugh and Strauss (1977) discuss the need to take into account the effect of the organisational settings in which pain relief occurs. According to this analysis pain work includes not only the relief of pain but other aspects which include the management of pain expression. Deviation from expected pain trajectories disrupts both the sentimental and work order of the ward and may lead to labels such as uncooperative or difficult. These seem to be similar in nature to some of the staff

reactions observed by the students. The concept of a normal pain trajectory was hinted at by one of the students who talked about nurses having a concept of a normal range of pain experience associated with particular operations, the implication being that patients who were outside these limits may be viewed less favourably.

The importance of the nurses as role models was also highlighted by the important role the students identified for nurses in relation to pain relief. Several students highlighted their view that pain control was mainly a nursing concern, the role of doctors being mainly concerned with the writing of prescriptions. There were few examples of effective multidisciplinary care that were described by the students, the only example given as a good example of multidisciplinary care was as situation in which the student observed a Macmillan nurse telling a doctor what the patient needed. It must be borne in mind that these students are relatively junior with limited practical experience and that they may have had only brief contact with doctors. If students are not observing a multidisciplinary approach to pain relief in practice settings then it is important that this is addressed in nurse preparation. For pain relief to be effective a multidisciplinary approach is essential and nurse education needs to foster this approach by looking at the contribution of different professions to the relief of pain perhaps through shared sessions amongst students from different professions.

5.7 Students' views of dealing with patients

The students' description in the interviews of their experiences of caring for patients in pain highlighted the strength of the emotional reactions the students felt when caring for these patients. The emotions described included helplessness and vulnerability and sometimes developed into feelings of anger and frustration. These feelings sometimes resulted from difficulties in controlling patients' pain and the students suggested these were shared by the staff. On occasions however these feelings were associated with the students' perception of their own role and the lack of influence they felt they had as a student. The feelings that the students experienced

are similar to those identified in a study by Smith (1992) who describes a student's feelings of powerlessness in a situation where she felt the patient was given inadequate pain relief.

The description of one of the students in this study of dealing with patients in pain as something that the students have to get used to highlights the need for the students to develop an ability to cope with these experiences. There was little evidence that the students were given any help in this and they were given little opportunity to discuss these feelings or to try to make sense of their experiences. The position that the students found themselves in seemed to offer them little support from the staff and often the students found themselves in the position of acting as a go between, trying to negotiate care between the trained staff and the patient. The lack of influence that the student has in this situation was illustrated in several of the students' discussions and often mitigated against them expressing their feelings. In some instances students felt that they had to put themselves in a position of making themselves unpopular in order to provide the care for the patient that the student felt was needed. This presents difficulties for the students who are concerned with fitting in by meeting the expectations of the staff (Melia 1987) and are aware that the trained staff are responsible for the students' assessments. Challenging what the student sees as inadequate pain relief can therefore present a conflict for the student.

Previous studies have suggested that the contact that students have with patients in pain may have an influence on the students' inferences of pain. One factor which Lenburg et al. (1970b) suggests may influence nurses' inferences is the clinical experience with patients which may lead to students becoming desensitised to its impact and therefore inferring less intensity of pain. Lenburg et al. (1970b) suggests that over a period of time, repeated occupational involvement in pain-weighted situations may serve to alter the nature of inferences. That is students may learn to "inattend" to what has become familiar and routine. Davitz and Davitz (1981) suggest

that the repeated exposure of students to patients who were suffering and the expectations that the student would respond as a professional may also influence the students' inferences of pain. Graffam (1981) uses the concept of cognitive dissonance (Festinger 1957) to explain the ways that nurses cope with patients in pain. A difference in the expectations of nurses and patients in relation to the control of pain may cause stress due to the difference between internal beliefs and external events. To reduce this stress rationalisation, rejection and withdrawal may be used. The results of this study suggest that these changes may occur in some students as they described very similar processes. The reference of one student to a process of 'normalisation', and another to tempering reactions with a bit of realism does seem to support the findings that Davitz and Davitz (1981) reported in the interviews they conducted. These processes were however not described by all the students in this study, some of whom reported that they had become more sympathetic due to their exposure to patients in pain while others suggest that they had not changed. This reflects the findings from the questionnaire which demonstrated that students' inferences of pain increased as well as decreased. It is not possible to identify reasons for these different reactions from the results of this study and is an area that requires further investigation.

The students did adapt to undertaking some aspects of care that necessitated causing pain to patients. Students described becoming adjusted to such procedures as giving injections over a period of time because of repeated experiences. There is evidence therefore that students may undergo a desensitisation to patients' pain experiences in these circumstances indeed, it may be essential for the students to adapt for them to perform the necessary care. The adaptation to situations in which students were causing discomfort was seen by them as a necessary part of becoming a nurse. These changes are similar to those Davitz and Davitz (1981) identified in interviews with students who through their experiences developed a more professional and objective

attitude compared to the more universal sympathy that the students possessed when they entered training.

The students' descriptions of their experiences of caring for patients in pain suggest that many of these experiences were emotionally charged and the students received little help in coping with these feelings. The result of these experiences does not seem to have resulted in a uniform desensitisation as has been suggested by previous authors (Lenburg, Glass and Davitz 1970a; Davitz and Davitz 1981). The outcomes of these experiences seem to be more varied, a fact which is supported by the variation in the changes in the students' inferences of pain.

5.8 Views on drugs and addiction

The results of the questionnaire identified that the majority of the students at the end of the CFP still overestimated the risk of addiction to opiate analgesia used to treat pain. The views of the students in relation to analgesia and its risk were reflected in the responses of the students during the interviews. The anxieties the students described about pain relief seemed to be wider than the issue of addiction and seemed to reflect a view that drugs in general were to be avoided if possible. This view seemed to influence the students' views about the analgesia that patients should receive. Although the students in this study were only half way through their training and it is not possible to say whether these views would be held throughout their course, the fears and anxieties associated with analgesia may have a detrimental effect on the pain relief of patients if these views were to persist and nurses' fears of addiction reinforce the fears of patients (Seers 1987a)

Although the education the students received during the CFP seemed to give the students a more accurate perception of the risk of addiction there is still anxiety and concern associated with analgesics and the more general fears about the use of analgesics in general needs to be addressed.

5.9 Nurse education

The students' responses in the interviews suggests the need to review nursing curricular in relation to pain control. The students remembered little in the way of theoretical input suggesting that the experiences they had in practice settings were more influential. The sessions that they could remember in relation to pain concentrated very much on the biological sciences although some students did remember sessions that related to the palliative care elements of the course. The students seemed to place a lot of value on what they learnt in practice. In view of their experiences and their views on the differences between theory and practice there is a need to review the way that the issue of pain is dealt with in the CFP of nursing courses. This separation of what the students learnt in theory and in practice has been identified by Melia (1987). Previous writers have highlighted the issue of the different views that individuals hold which Argyris and Schön (1974) referred to as theory in use and espoused theories. Greenwood (1993) suggests nurses acquire two differing repertoires of beliefs one from theory and one from practice. Students in this study highlighted some of the differences they saw between what they learnt in theory and what they experienced in practice, one student for example highlighted the acceptance of the patients' view of pain propounded in the college and contrasted this with their experience of nurses' responses in practice. There is a danger that academic discussions of concepts and definitions of pain and pain relief will become the espoused theory while the experiences that the students have in clinical settings will become the theories in use. Greenwood (1993, Pg.1478) suggests that "if nurse education is to help render nursing care more intelligently responsive to human need nurse teachers should deliberately structure clinical learning environments to promote the construction and utilisation of adequate, clear cut action schemata," which will entail nurse educators being more involved in practice settings.

5.10 Comments on methodology

This study was carried out in one college of nursing and department of nursing studies located in several sites in the Midlands. The findings of the study are therefore not claimed to be representative of all nursing colleges or students.

While reviewing the results the nature of the population studied must be borne in mind. There was little ethnic variation in the subjects studied, 98% of the subjects coming from the United Kingdom and, as pain is influenced by cultural factors (Zborowski 1969; Davitz and Davitz 1981), care must be taken in applying these results to other groups. The students were fairly evenly divided in terms of previous experience of nursing and their personal experience of illness both factors which may have influenced their attitudes towards suffering.

In the early stages of designing the study the sample from the college and undergraduate students was estimated to be 240 which would have given a chance of a type II error of approximately 20%. Due to the withdrawal of one of the sites of the college and the withdrawal of individuals from the study the sample employed was 217. Following exclusions from the study because of incomplete answers the sample on which the analysis was based fell some way short of the original estimate. This has the effect of reducing the power of the study and increasing the risk of a type II error. A sample of 156 for example increases the risk of a type II error to 40%. Thus there was a greater chance of the results not reaching a significant level than had initially been planned.

The staff surveyed all worked on one of 6 surgical wards at a large teaching hospital in the Midlands. The majority were registered nurses with only one nurse giving a country of origin outside the United Kingdom. The response rate to the questionnaire was 54% despite reminding letters. It is not clear why there should be such a low level of return and as it was not possible to follow up those who did not return the

questionnaire it is not clear how this return rate may have affected the results obtained.

The collection of the patient and nurse assessment of patients' pain proved to one of the most difficult aspects of the study. The collection of these data was considerably more difficult than had been expected. The nurses were approached when on duty to ascertain if they were caring for any patients who were suitable to be included. The staff were often unable to complete the ratings due to the workload at that time or due to a lack of suitable patients. This was particularly the case on certain wards where the nature of the ward changed during the study which resulted in a reduced number of surgical patients. The other commitments of the researcher also restricted the times the data could be collected and of the original 20 staff identified to take part in the study three left before five scores could be collected, one went on maternity leave and one was on long term sick leave. Additional staff were recruited to the study to fill some of the places but this necessitated data collection continuing over a much longer period than had been anticipated. Data collection commenced in February 1994 and was not completed until March 1995. This delay in collecting the data may have weakened the association between the scores on the standard inferences of suffering questionnaire and the patient ratings as it allows a long period for the effect of other variables. This difficulty could have been reduced if the data collection could have been carried out more intensively and the data collector was available to collect data over a longer period of time.

Because of differences in the way the visual analogue scales were completed the comparison of the patients' and nurses' scores were difficult. These difficulties had not been apparent in the pilot studies and highlights the difficulty of designing these tools. Comparison of rating scales is always difficult because of the different ways that rating scales are interpreted (Harrison 1991; Walker 1995). Walker (1995) suggests that pain 'bearability' scales should be used instead of intensity scales

because of these difficulties. Further studies to assess the use of this type of scale would therefore be useful.

5.11 Summary

This study did not confirm the findings of previous studies that students' inferences of pain decreased over the early stages of nursing education. It also therefore did not support the theories that have been proposed to explain these changes such as desensitisation (Lenburg et al. 1970b), acculturation (Davitz and Davitz 1981) or cognitive dissonance (Graffam 1981). While there were aspects of the students experiences that lent support to these theories, the experiences of the students were more varied than these theories would suggest. It is unclear whether the lack of change in inferences of pain is due to differences in the structure of P2000 courses and the limited clinical experiences of students during the CFP or due to cultural differences. Further studies looking at the experiences of students over the whole of their nurse education including the branch programmes would help to answer this question. The results of this study showed no link between inferences of pain as measured by the SMIS questionnaire and nurses' assessment of patients' pain This brings into question the link between pain assessment and inferences as measured by the SMIS and therefore the validity of the SMIS questionnaire.

5.12 Conclusions

1) Students undertaking a project 2000 style diploma course and an undergraduate course at one school of nursing and one university department significantly increased their inferences of psychological distress over the period of the common foundation course as measured on a modified version of the SMIS questionnaire. There was no significant change in the inferences of pain as measured by the questionnaire and therefore does not support the contention that students become desensitised or acculturated to pain. The findings in this study need to be replicated before they can be generalised to other students.

2) Students' inferences of psychological distress were higher for female cases than male cases. These differences did not change during the CFP which suggest they were the result of pre course socialisation and experience. Students' views of gender related differences were identified during interviews which highlight the need for nurse educators to provide an opportunity for students to confront and reflect on these views to ensure that they do not adversely influence the care of patients through the development of gender related stereotypes.

3) Students inferred higher levels of pain and lower levels of psychological distress for child cases than for adult and elderly cases. These views existed before the course and were consistent following the CFP suggesting that they were the result of pre-course experience or socialisation. These views again need to be addressed in nurse education to challenge and enable students to reflect on their views.

4) Student characteristics of gender, previous experience of nursing, previous experience of a painful illness, experience on a surgical placement, intended branch and the site at which they were based showed no significant relationship with inferences of pain or psychological distress. Although the students' age showed a significant effect on their inferences of pain there was no consistent relationship.

4) Students' views of the aim of pain relief changed significantly during the CFP with an increase in the number of students believing the aim of pain relief to be to relieve the pain completely. Nurses were divided over the aim of pain relief.

Although the students' estimation of the risk of addiction became more accurate over the CFP they still overestimated of the risk of addiction to opiate analgesia. There was evidence of a view towards both opiates and non opiate analgesics that taking drugs was something to be avoided if possible. The views of students in relation to drugs need to be challenged during nurse education and further exploration of nurses'

and students' views in relation to analgesic drugs is required to understand the effects this may have on pain relief.

5) Nurses displayed a good knowledge in relation to pain relief although their knowledge in relation to the concept of adaptation and the degree to which pain can be predicted on the basis of the cause were both poor. Nurses' understanding of the efficacy of opiate drugs was also poor. These findings suggest that there is still a need to improve nurses' understanding of the process of assessment and their knowledge of opiate analgesics.

6) A comparison of nurses' and patients' ratings of the patients' pain showed that just over half of the nurses' scores (50.6%) were different from those of the patients. These were almost equally divided between over and underestimation. There appears to be a tendency for nurses to overestimate low scores and underestimate high scores. Further work is needed to identify systems which can improve the accuracy of nurses' assessment. There was no relationship between pain scores on the questionnaire and the tendency to over or underestimate patients' pain.

7) Students experienced a wide range of strong emotions when caring for patients in pain. Their relatively junior status in the wards often seemed to place them in difficult positions and provided them with little support. Opportunities need to be provided in nurse education programmes for students to reflect on their experiences and to challenge preconceptions about the relationship of factors such as gender and culture to pain. In particular student nurses need to be able to reflect on the relationship between theory as presented in the class and their experiences in the practice settings if they are not to develop two completely separate views.

Consideration needs to be given to the opportunities for students to reflect and understand their experiences in practice settings. The emotionally charged situations

that students are experiencing early in their course suggests that consideration needs to be given to the preparation students receive before their placement experiences.

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Appendix 1

INFERENCES OF PAIN AND SUFFERING Surgical questions

Each item in this questionnaire contains a brief description of a patient. Please read the description of each patient, and then judge the degree of physical pain or discomfort and the degree of psychological distress the patient is probably experiencing. Indicate your judgement by circling the appropriate number on the two rating scales.

Remember, there are no right or wrong answers. We are only interested in your judgements. Do the ratings as quickly as you can. Don't sit and think for a long time about any one item. Read the description of each patient and quickly asses the case. Then, on the basis of your first reaction to the case, circle your answer, indicating how much physical pain or discomfort and how much psychological distress you feel the patient is experiencing.

		None	Little	Mild	Mod -erate	Great	Severe	Very Severe
1. Bill Franks, forty one years of age, returned from theatre yesterday afternoon following a repair of an umbilical hernia which he had suffered from for sometime but had recently become more t troublesome.	Physical Pain, discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
2 George West a thirty two year old man underwent a routine appendectomy yesterday after complaining of abdominal discomfort.	Physical Pain, discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
3. William Gould, a thirty five year old has undergone surgery to remove an infected sebaceous cyst. The operation was carried out as day surgery and Mr Gould is to return for an outpatient appointment in four weeks.	Physical Pain, discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
4. Following a myringotomy (incision in the ear drum and evacuation of fluid) John Aston a forty two year old is preparing to go home. He will return to the outpatient department in two weeks.	Physical Pain, discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
5. Chris Small a thirty eight year old is recovering following yesterdays surgery to repair a depressed fracture of the skull sustained in a road traffic accident.	Physical Pain, discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
6. Thirty eight year old John Dennis is recovering from a skin grafting operation to his right foot carried out earlier in the day following a scald sustained in an accident with a pan of boiling water.	Physical Pain, discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7

7. Thirty three year old Mike Naylor is preparing to go home from the day case unit following his operation to remove an in-growing toe nail on his right foot.

Physical							
Pain, discomfort	1	2	3	4	5	6	7
Psychological	1	2	3	4	5	6	7
Distress							

8. David Bruce is recovering from surgery, carried out earlier in the day, to remove two wisdom teeth
When recovered from the anaesthetic he will be allowed home.

Physical							
Pain, discomfort	1	2	3	4	5	6	7
Psychological	1	2	3	4	5	6	7
Distress							

9. Charles Cable, thirty nine years old, is first day post-op following an amputation in an accident at work.

Physical							
Pain, discomfort	1	2	3	4	5	6	7
Psychological	1	2	3	4	5	6	7
Distress							

10. Bob is recovering from surgery performed yesterday to repair a damaged tendon in his left hand which he injured in an accident while repairing his car.

Physical							
Pain, discomfort	1	2	3	4	5	6	7
Psychological	1	2	3	4	5	6	7
Distress							

Appendix 2

The Standard Measure of Inferences of suffering Questionnaire

Instructions

Each item in this questionnaire contains a brief description of a patient. Please read the description of each patient, and then judge the degree of physical pain or discomfort and the degree of psychological distress the patient is probably experiencing. Indicate your judgement by circling the appropriate number on the two rating scales.

Remember, there are no right or wrong answers. I appreciate that it is difficult to make a judgement with the limited information you are given and I am not trying to suggest that pain is not an individual experience. I am interested in your feelings on the information presented, therefore do the ratings as quickly as you can. Don't sit and think for a long time about any one item. Read the description of each patient and quickly assess the case. Then, on the basis of your first reaction to the case, circle your answer, indicating how much physical pain or discomfort and how much psychological distress you feel the patient is experiencing.

N.Allcock.22-5-92

		None				Mod -erate			Very Severe
1. Tripping on an uneven pavement, Louise Craine, seventy years of age, fell and sustained a fractured femur. In traction at the moment, surgery is planned.	Physical Pain,discomfort	1	2	3	4	5	6	7	
	Psychological Distress	1	2	3	4	5	6	7	
2. Concerned about the appearance of a mole on her upper left arm, thirty two year old Elizabeth Bond decided to have the lesion removed. The pathology report was negative.	Physical Pain,discomfort	1	2	3	4	5	6	7	
	Psychological Distress	1	2	3	4	5	6	7	
3. Thirty-six year old Gladys Lee stumbled and fell on the pavement, sustaining an abrasion of the hand. When the injury was not treated an abscess developed which required incision and drainage. She is to care for the wound through soaking and make an appointment to have it checked in a few days.	Physical Pain,discomfort	1	2	3	4	5	6	7	
	Psychological Distress	1	2	3	4	5	6	7	
4. Because of a persistent cough and a lingering cold, John Caldwell, age forty, was advised to consult a doctor. His condition was diagnosed as broncho-pneumonia requiring admission to hospital.	Physical Pain,discomfort	1	2	3	4	5	6	7	
	Psychological Distress	1	2	3	4	5	6	7	
5. While standing on a kitchen chair to reach a high shelf, Nancy Lynch, forty years old, slipped and fractured her right arm. X-rays indicated a fractured radius. The arm was placed in plaster and now after six weeks the plaster will be removed.	Physical Pain,discomfort	1	2	3	4	5	6	7	
	Psychological Distress	1	2	3	4	5	6	7	
6. Thirty year old John Dennis is recovering from a skin graft to his right foot carried out on the morning surgery list. The graft followed a scald sustained some months earlier.	Physical Pain,discomfort	1	2	3	4	5	6	7	
	Psychological Distress	1	2	3	4	5	6	7	
7. After a series of tests and examinations. Catherine Kent, forty two years of age was admitted to hospital with thrombophlebitis. Her treatment includes anticoagulants and bed-rest.	Physical Pain,discomfort	1	2	3	4	5	6	7	
	Psychological Distress	1	2	3	4	5	6	7	

		None			Mod -erate		Very Severe	
8. Undergoing an annual physical examination, Margaret Tully, forty-two years of age was informed that she had a low grade systolic murmur. She has been admitted to hospital for tests.	Physical Pain,discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
9. Jane Lombard was rushed to hospital by her mother after this nine year old chid fell from a tree-house platform. X-rays indicated a fractured femur. She has remained at the hospital in traction pending surgery.	Physical Pain,discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
10. James Robbins aged seven is recovering from day surgery for the removal of an infected sebaceous cyst The surgery was completed in the morning and James will shortly be going home to return to clinic in two weeks.	Physical Pain,discomfort	1	2	3	4	5	6	7
	Psychological Distress.	1	2	3	4	5	6	7
11. The general fatigue and behaviour of seven year old Madeline Rankin concerned her parents. Seen by a paediatrician, she was admitted to the hospital with a possible diagnosis of leukaemia. She is now undergoing a number of tests.	Physical Pain,discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
12. Concerned about his frequent colds, William Hampton, seventy years old, went to a family doctor. Broncho-pneumonia was diagnosed. Mr Hampton was admitted to hospital and commenced on antibiotic therapy.	Physical Pain,discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
13. Concerned about the difficulty of standing on his feet for any period of time, forty one year old Martin-Downs was examined by his doctor. Thrombophlebitis was diagnosed. Currently he is in hospital being treated with anticoagulant therapy while on complete bed rest.	Physical Pain,discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
14. While pruning a hedge near his daughter's home, Edward Dennis injured his hand. At the insistence of his daughter, he finally saw his GP An incision and drainage of the abscess was performed in the surgery, and the seventy-two year old man was told to soak his hand and return in three days.	Physical Pain,discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7

		None				Mod -erate			Very Severe
15. Concerned about a general malaise and an overall feeling of "not being himself", George James, forty years of age, consulted a doctor. Preliminary examination indicated a possibility of leukaemia, and he is currently in hospital under-going diagnostic tests.	Physical Pain,discomfort	1	2	3	4	5	6	7	
	Psychological Distress	1	2	3	4	5	6	7	
16. Getting ready to go home following day surgery for removal of a sebaceous cyst Janet Simons, a seventy two year old is asked to return to outpatients in two weeks	Physical Pain,Discomfort	1	2	3	4	5	6	7	
	Psychological Distress	1	2	3	4	5	6	7	
17. After leaving work, Ray Christopher, sixty-four years old, stumbled on an uneven pavement and fractured his femur. Surgery is planned.	Physical Pain, Discomfort	1	2	3	4	5	6	7	
	Psychological Distress	1	2	3	4	5	6	7	
18. Struggling with a toy, five year Maureen Fergusson hurt her right hand. An abscess developed which the paediatrician incised and drained during an outpatient visit. Maureen's mother was instructed how to soak the child's hand, and asked to bring her back to see the doctor in three days.	Physical Pain, Discomfort	1	2	3	4	5	6	7	
	Psychological Distress	1	2	3	4	5	6	7	
19. While attempting to change a flat tyre on his car, Frank Jorden, thirty nine years of age, stumbled and struck his arm against a metal jack. The break was set in plaster for six weeks. He is due to have the cast taken off in a day or so.	Physical Pain, Discomfort	1	2	3	4	5	6	7	
	Psychological Distress	1	2	3	4	5	6	7	
20. At the suggestion of a paediatrician, a mole from five year old Joey Herter's right arm was surgically removed. The pathology report was negative.	Physical Pain,Discomfort	1	2	3	4	5	6	7	
	Psychological Distress	1	2	3	4	5	6	7	
21. Timothy Barnes a nine year school boy is waking up following skin grafting surgery carried out that morning to his right foot following a scalding accident that occurred some months ago.	Physical Pain, Discomfort	1	2	3	4	5	6	7	
	Psychological Distress	1	2	3	4	5	6	7	

		None			Mod-erate		Very Severe	
22. Six year old James Stone was admitted to the hospital. His mother explained that his GP noticed a heart murmur in a routine examination and his paediatrician wanted James to have some tests.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
23. A number of worries about how she was feeling prompted Mary Claxton, thirty-eight years of age, to check with her doctor. After a possible diagnosis of leukaemia, admission was deemed necessary to allow further tests.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
24 Eight year old Sue Sloan had a mole excised from her arm the day before yesterday. She did not require to stay in hospital, and the biopsy report was negative.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
25. Bobby Simpson's mother is bringing him to fracture clinic to have a cast taken off his arm. A month and a half ago, Bobby a six year old fell from a climbing frame in the school playground and sustained a fractured right radius.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
26. Barbara King, forty years of age, is recovering after surgery earlier in the day to apply skin grafts to her right foot. This follows a scald which she received a month ago.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
27. In accordance with his company's requirement Frederick Britt, aged thirty-nine reported for an annual physical examination. The company doctor noticed a heart murmur and has referred him for further tests.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
28. Jack Walters, thirty three, had an excision of a mole from his lower arm done two days ago. The pathology report came back negative.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
29 Preparing to go home following day surgery to remove a sebaceous cyst, George Abbott, forty four years of age, will return to outpatients in two weeks.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7

		None			Mod-erate		Very Severe	
30. Stumbling on an icy step, seventy one year old Charlotte Timmons sustained a fractured left radial bone. Her arm was placed in plaster which has been on for about seven weeks. Her physician has decided that it can now be removed.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
31. A series of colds prevented nine year old Lisa Robberts from attending school regularly. As she was unable to get rid of a cough, she was taken to the GP who admitted her to hospital for bronchopneumonia.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
32. Mary Benedict injured her hand and the resulting infection concerned her. She went to her doctor who performed an incision and drainage in the surgery. This seventy four year old women is to soak her hand and return to the physician's office in three days.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
33. Seventy-four year old Ernest Trew returned to his doctor's office for a biopsy report on a mole which had been excised from his upper right arm several days previously. The pathology report was negative.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
34. Waking following a skin grafting operation carried out in the morning Melanie Stillman, a primary school child required surgery following a scald she sustained some time ago to her right foot.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
35. At the insistence of his family doctor seventy two year old Henry Marshall has entered the hospital for a complete series of diagnostic tests after an examination by his GP suggested the possibility of leukemia.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
36. Retired, Chester Wilcox, age seventy -two, takes the precaution of having annual check-ups. He was notified at his last check-up of the presence of of a low grade systolic murmur which will need investigation.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7

		None			Mod-erate		Very Severe	
37. James Falconer, a ten year old boy caught his finger in a jammed bike gear. An abscess developed which required incision and drainage. The doctor told his mother how to soak the wound, and instructed her to bring the boy back to see him in a few days.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
38. Sixty-six year old Austin Beasley was informed that he was strongly advised to be admitted to hospital. Diagnosed as having thrombophlebitis, the treatment which included bed-rest and anticoagulant drugs was begun immediately.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
39. Gladys Gray sixty seven years of age is recovering from a skin grafting operation to her right foot carried out on the morning list. The operation followed a scald she sustained in an accident a month or so ago.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
40. Mary Williams, sixty-eight years of age was notified that a biopsy report was negative. A few days before, she had had day surgery for removal of a lower arm lesion.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
41. Jane Patterson, sixty-nine years of age, underwent a routine physical examination prior to obtaining additional insurance. A low grade systolic murmur was noted, and she was told hospitalisation was necessary in order for her to have a complete check-up.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
42. Louise Hamilton, forty five years old is preparing to go home following day surgery to remove a sebaceous cyst. She will attend outpatients in two weeks.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
43. Fatigue, repeated colds, and a persistent cough prompted thirty-four year old Beth Frawley to seek treatment. Broncho-pneumonia was diagnosed and immediate admission to hospital was required.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7

		None			Mod-erate		Very Severe	
44. Complaining of discomfort in her leg, sixty-seven year old Marie Cunningham made an appointment with her GP. the examination indicated thrombophlebitis. Admission to hospital was necessary, and she is now being treated with anticoagulants and bed-rest.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
45. Complaining of general fatigue and malaise, seventy-one year old Rose Walker decided to see her GP. examination indicated a need for a complete set of tests to rule out the possibility of leukemia.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
46. In traction pending surgery, eleven year old James Foreman sustained a fractured femur when his bike skidded on a wet road and he lost control.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
47. Currently on bed-rest and receiving anticoagulant therapy, twelve year old William Post was hospitalised with a diagnosis of thrombophlebitis. His parents took him for an examination following the boys repeated insistence that his "legs hurt."	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
48. Undergoing an annual health check at her school, ten year old Jill Cox was found to have a systolic heart murmur and was refered to the hospital for a full examination.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
49. Seventy year old Shirly Adams ascribed her continual bouts of colds to the severity of the winter. However, at her family's insistence she did see a doctor who prescribed antibiotic therapy and insisted she be admitted to hospital for bronchopneumonia.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
50. Admitted to hospital and in traction, as a result of a fall on an icy street, thirty-nine year old Joan Lawrence will be having surgery in a few days for her fractured femur.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7

		None			Mod-erate		Very Severe	
51. Jerome Fleming, thirty-eight years of age was concerned about the swelling and pain in his hand from an injury he had received at work a week previously. He went to the occupational health service where his abscess was incised and drained. After soaking the hand regularly for the next few days, he is due to have the hand checked.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
52 Seventy-three year old Harvey Carpenter is preparing to go home following day surgery to remove a sebaceous cyst. He will return to outpatients in two weeks.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
53 Concerned about their daughter's complaints of discomfort in her legs, the parents of twelve year old Janet Richards took her to see their GP. Thrombophlebitis was diagnosed and Janet was admitted to the local hospital to begin treatment which consisted of bed-rest and anticoagulants.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
54. Richard Wylie seventy two years of age, slipped on an icy pavement six weeks ago. Since that time his fractured arm has been in a plaster which his doctor has said will be ready to be removed in the next day or two.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
55. Fiona Slater is preparing to go home following day surgery to remove a sebaceous cyst. This ten year old will return to childrens' outpatients in two weeks.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
56. Paul Everett, sixty five year old is recovering following surgery carried out in the morning to apply skin grafts to his right foot, following a scald he received some months ago.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
57. Six weeks ago Sarah Jones, a seven year old, lost her hold on the school climbing frame and suffered a fractured humerus. An appointment has been made for removal of the plaster.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
58. Upon admission to A&E following a road traffic accident, Lewis Knapp thirty six years old was treated with traction. Surgery will be necessary to repair a fractured femur.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7

		None			Mod- erate		Very Severe	
59. Eleven year old Stanley Overton seemed unable to shake a cold and cough. Following examination by his GP his parents were informed that admission will be necessary because of broncho-pneumonia.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
60. Admitted to the paediatric ward Peter Goodwin, six years of age, is suspected of having leukaemia. At present he is being examined and tested to rule out this possibility	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7

61. Do you think that pain relief following surgery is generally

very good	
good	
adequate	
poor	
very poor	

62. Do you consider the aim of post-operative pain relief is

to relieve the pain completely	
to relieve the pain as much as possible	
to relieve the pain enough so that the patient can tolerate it	
to relieve the pain enough to allow the patient to function	

63. Do you consider the number of patients likely to become addicted following the treatment of post-operative pain with narcotic analgesics

Less than 1%	
1-15%	
16-25%	
26-50%	
51-75%	
Greater than 75%	

64. Please state your name

65. Please state your age in years

66. Have you had any nursing experience before this course

Yes	
No	

If Yes Please Give Details

67. Have you ever had an operation or experienced a painful illness

Yes	
No	

68. Please state your country of origin

--

69. Which branch do you intent to follow

Care of the Adult	
Care of the Child	
Learning Disabilities	
Mental Health	

THANKYOU VERY MUCH FOR YOUR HELP WITH THIS PROJECT. GOOD LUCK FOR THE REST OF YOUR COURSE.

Appendix 3

TEXT BOUND INTO THE SPINE



Mid Trent College

Nursing and Midwifery Education

College Principal:
 Audrey Lathwood
 RGN, RNT, Dip.Ed, Dip.N

Please ask for: Mrs Bradley

Ref: JB/MH

Ref:

Education Centre
 "B" Floor
 Queen's Medical Centre
 Nottingham NG7 2UH

Telephone: (0602) 421421

Extension: 41216

Fax: (0602) 423876

21 July 1992

N Allcock
 Department of Nursing Studies
 Floor
 Queen's Medical Centre
 Nottingham NG7 2UH

Mr Nick

Thank you for sending to me your proposed questionnaire relating to pain and psychological distress.

The questionnaire was considered by the Mid Trent College Educational Research Committee on 16 July 1992 and I write now to let you know the outcome.

Members were impressed with the aims and presentation of the work and approve that it proceed. However I would like you to give me the answers to the following queries that I may inform appropriate MTC staff that the study has been approved.

Which students do you wish to use? Project 2000 only?

Does proceeding only to Adult Branch or all CFP students?

Would you use all four Centres of MTC or just Nottingham?

The observation made was with regard to the 60 statements. If you use the questionnaire with Project 2000 students on commencement of the course and then again after 18 months the students are unlikely to have been exposed to the type of scenarios you use. It was worth pointing this out to you but obviously it is your decision whether or not to proceed as planned.

I look forward to receiving from you the answers to the Research Committee's queries and wish you every success with your study.

Yours sincerely

Bradley (Mrs)
 Chairperson
 Educational Research Committee

Working for Students

Appendix 4

The Standard Measure of Inferences of suffering Questionnaire

Instructions

Each item in this questionnaire contains a brief description of a patient. Please read the description of each patient, and then judge the degree of physical pain or discomfort and the degree of psychological distress the patient is probably experiencing. Indicate your judgement by circling the appropriate number on the two rating scales.

Remember, there are no right or wrong answers. I appreciate that it is difficult to make a judgement with the limited information you are given and I am not trying to suggest that pain is not an individual experience. I am interested in your feelings on the information presented, therefore do the ratings as quickly as you can. Don't sit and think for a long time about any one item. Read the description of each patient and quickly assess the case. Then, on the basis of your first reaction to the case, circle your answer, indicating how much physical pain or discomfort and how much psychological distress you feel the patient is experiencing.

N.Allcock.22-5-92

		None			Mod erate			Very Severe
1. Tripping on an uneven pavement, Louise Craine, seventy years of age, fell and sustained a fractured femur. In traction at the moment, surgery is planned.	Physical Pain,discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
2. Concerned about the appearance of a mole on her upper left arm, thirty two year old Elizabeth Bond decided to have the lesion removed. The pathology report was negative.	Physical Pain,discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
3. Thirty-six year old Gladys Lee stumbled and fell on the pavement, sustaining an abrasion of the hand. When the injury was not treated an abscess developed which required incision and drainage. She is to care for the wound through soaking and make an appointment to have it checked in a few days.	Physical Pain,discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
4. Because of a persistent cough and a lingering cold, John Caldwell, age forty, was advised to consult a doctor. His condition was diagnosed as broncho-pneumonia requiring admission to hospital.	Physical Pain,discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
5. While standing on a kitchen chair to reach a high shelf, Nancy Lynch, forty years old, slipped and fractured her right arm. X-rays indicated a fractured radius. The arm was placed in plaster and now after six weeks the plaster will be removed.	Physical Pain,discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
6. Thirty year old John Dennis is recovering from a skin graft to his right foot carried out on the morning surgery list. The graft followed a scald sustained some months earlier.	Physical Pain,discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
7. After a series of tests and examinations. Catherine Kent, forty two years of age was admitted to hospital with thrombophlebitis. Her treatment includes antagoagulants and bedrest.	Physical Pain,discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7

		None			Mod -erate			Very Severe
8. Undergoing an annual physical examination, Margaret Tully, forty-two years of age was informed that she had a low grade systolic murmur. She has been admitted to hospital for tests.	Physical Pain,discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
9. Jane Lombard was rushed to hospital by her mother after this nine year old chid fell from a tree-house platform. X-rays indicated a fractured femur. She has remained at the hospital in traction pending surgery.	Physical Pain,discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
10. James Robbins aged seven is recovering from day surgery for the removal of an infected sebaceous cyst The surgery was completed in the morning and James will shortly be going home to return to clinic in two weeks.	Physical Pain,discomfort	1	2	3	4	5	6	7
	Psychological Distress.	1	2	3	4	5	6	7
11. The general fatigue and behaviour of seven year old Madeline Rankin concerned her parents. Seen by a paediatrician, she was admitted to the hospital with a possible diagnosis of leukaemia. She is now undergoing a number of tests.	Physical Pain,discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
12. Concerned about his frequent colds, William Hampton, seventy years old, went to a family doctor. Bronchopneumonia was diagnosed. Mr Hampton was admitted to hospital and commenced on antibiotic therapy.	Physical Pain,discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
13. Concerned about the difficulty of standing on his feet for any period of time, forty one year old Martin-Downs was examined by his doctor. Thrombophlebitis was diagnosed. Currently he is in hospital being treated with antigoagulant therapy while on complete bed rest.	Physical Pain,discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
14. While pruning a hedge near his daughter's home, Edward Dennis injured his hand. At the insistance of his daughter, he finally saw his GP An incision and drainage of the abscess was performed in the surgery, and the seventy-two year old man was told to soak his hand and return in three days.	Physical Pain,discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7

		None			Mod -erate			Very Severe
15. Concerned about a general malaise and an overall feeling of "not being himself", George James, forty years of age, consulted a doctor. Preliminary examination indicated a possibility of leukaemia, and he is currently in hospital under-going diagnostic tests.	Physical Pain,discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
16. Getting ready to go home following day surgery for removal of a sebaceous cyst Janet Simons, a seventy two year old is asked to return to outpatients in two weeks	Physical Pain,Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
17. After leaving work, Ray Christopher, sixty-four years old, stumbled on an uneven pavement and fractured his femur. Surgery is planned.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
18. Struggling with a toy, five year Maureen Fergusson hurt her right hand. An abscess developed which the paediatrician incised and drained during an outpatient visit. Maureen's mother was instructed how to soak the child's hand, and asked to bring her back to see the doctor in three days.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
19. While attempting to change a flat tyre on his car, Frank Jorden, thirty nine years of age, stumbled and struck his arm against a metal jack. The break was set in plaster for six weeks. He is due to have the cast taken off in a day or so.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
20. At the suggestion of a paediatrician, a mole from five year old Joey Herter's right arm was surgically removed. The pathology report was negative.	Physical Pain,Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
21. Timothy Barnes a nine year school boy is waking up following skin grafting surgery carried out that morning to his right foot following a scalding accident that occurred some months ago.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7

		None			Mod -erate		Very Severe	
22. Six year old James Stone was admitted to the hospital. His mother explained that his GP noticed a heart murmur in a routine examination and his paediatrician wanted James to have some tests.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
23. A number of worries about how she was feeling prompted Mary Claxton, thirty-eight years of age, to check with her doctor. After a possible diagnosis of leukaemia, admission was deemed necessary to allow further tests.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
24 Eight year old Sue Sloan had a mole excised from her arm the day before yesterday. She did not require to stay in hospital, and the biopsy report was negative.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
25. Bobby Simpson's mother is bringing him to fracture clinic to have a cast taken off his arm. A month and a half ago, Bobby a six year old fell from a climbing frame in the school playground and sustained a fractured right radius.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
26. Barbara King, forty years of age, is recovering after surgery earlier in the day to apply skin grafts to her right foot. This follows a scald which she received a month ago.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
27. In accordance with his company's requirement Frederick Britt, aged thirty-nine reported for an annual physical examination. The company doctor noticed a heart murmur and has referred him for further tests.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
28. Jack Walters, thirty three, had an excision of a mole from his lower arm done two days ago. The pathology report came back negative.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
29 Preparing to go home following day surgery to remove a sebaceous cyst, George Abbott, forty four years of age, will return to outpatients in two weeks.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7

		None			Mod -erate			Very Severe
30. Stumbling on an icy step, seventy one year old Charlotte Timmons sustained a fractured left radial bone. Her arm was placed in plaster which has been on for about seven weeks. Her physician has decided that it can now be removed.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
31. A series of colds prevented nine year old Lisa Robberts from attending school regularly. As she was unable to get rid of a cough, she was taken to the GP who admitted her to hospital for bronchopneumonia.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
32. Mary Benedict injured her hand and the resulting infection concerned her. She went to her doctor who performed an incision and drainage in the surgery. This seventy four year old women is to soak her hand and return to the physician's office in three days.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
33. Seventy-four year old Ernest Trew returned to his doctor's office for a biopsy report on a mole which had been excised from his upper right arm several days previously. The pathology report was negative.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
34. Waking following a skin grafting operation carried out in the morning Melanie Stillman, a primary school child required surgery following a scald she sustained some time ago to her right foot.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
35. At the insistence of his family doctor seventy two year old Henry Marshall has entered the hospital for a complete series of diagnostic tests after an examination by his GP suggested the possibility of leukemia.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
36. Retired, Chester Wilcox, age seventy -two, takes the precaution of having annual check-ups. He was notified at his last check-up of the presence of of a low grade systolic murmur which will need investigation.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7

		None			Mod-erate			Very Severe
37. James Falconer, a ten year old boy caught his finger in a jammed bike gear. An abscess developed which required incision and drainage. The doctor told his mother how to soak the wound, and instructed her to bring the boy back to see him in a few days.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
38. Sixty-six year old Austin Beasly was informed that he was strongly advised to be admitted to hospital. Diagnosed as having thrombophlebitis, the treatment which included bedrest and antigoagulant drugs was begun immediately.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
39. Gladys Gray sixty seven years of age is recovering from a skin grafting operation to her right foot carried out on the morning list. The operation followed a scald she sustained in an accident a month or so ago.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
40. Mary Williams, sixty-eight years of age was notified that a biopsy report was negative. A few days before, she had had day surgery for removal of a lower arm lesion.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
41. Jane Patterson, sixty-nine years of age, underwent a routine physical examination prior to obtaining additional insurance. A low grade systolic murmur was noted, and she was told hospitalisation was necessary in order for her to have a complete check-up.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
42. Louise Hamilton, forty five years old is preparing to go home following day surgery to remove a sebaceous cyst. She will attend outpatients in two weeks.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
43. Fatigue, repeated colds, and a persistent cough prompted thirty-four year old Beth Frawley to seek treatment. Bronchopneumonia was diagnosed and immediate admission to hospital was required.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7

		None			Mod-erate			Very Severe
44. Complaining of discomfort in her leg, sixty-seven year old Marie Cunningham made an appointment with her GP. the examination indicated thrombophlebitis. Admission to hospital was necessary, and she is now being treated with anticoagulants and bedrest.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
45. Complaining of general fatigue and malaise, seventy-one year old Rose Walker decided to see her GP. examination indicated a need for a complete set of tests to rule out the possibility of leukemia.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
46. In traction pending surgery, eleven year old James Foreman sustained a fractured femur when his bike skidded on a wet road and he lost control.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
47. Currently on bedrest and receiving antioagulant therapy, twelve year old William Post was hospitalised with a diagnosis of thrombophlebitis. His parents took him for an examination following the boys repeated insistence that his "legs hurt."	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
48. Undergoing an annual health check at her school, ten year old Jill Cox was found to have a systolic heart murmur and was refered to the hospital for a full examination.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
49. Seventy year old Shirly Adams ascribed her continual bouts of colds to the severity of the winter. However, at her family's insistence she did see a doctor who prescribed antibiotic therapy and insisted she be admitted to hospital for bronchopneumonia.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
50. Admitted to hospital and in traction, as a result of a fall on an icy street, thirty-nine year old Joan Lawrence will be having surgery in a few days for her fractured femur.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7

		None			Mod -erate		Very Severe
51. Jerome Fleming, thirty-eight years of age was concerned about the swelling and pain in his hand from an injury he had received at work a week previously. He went to the occupational health service where his abscess was incised and drained. After soaking the hand regularly for the next few days, he is due to have the hand checked.	Physical						
	Pain, Discomfort	1	2	3	4	5	6 7
52. Seventy-three year old Harvey Carpenter is preparing to go home following day surgery to remove a sebaceous cyst. He will return to outpatients in two weeks.	Psychological	1	2	3	4	5	6 7
	Distress						
53. Concerned about their daughter's complaints of discomfort in her legs, the parents of twelve year old Janet Richards took her to see their GP. Thrombophlebitis was diagnosed and Janet was admitted to the local hospital to begin treatment which consisted of bedrest and anticoagulants.	Physical						
	Pain, Discomfort	1	2	3	4	5	6 7
54. Richard Wylie seventy two years of age, slipped on an icy pavement six weeks ago. Since that time his fractured arm has been in a plaster which his doctor has said will be ready to be removed in the next day or two.	Psychological	1	2	3	4	5	6 7
	Distress						
55. Fiona Slater is preparing to go home following day surgery to remove a sebaceous cyst. This ten year old will return to childrens outpatients in two weeks.	Physical						
	Pain, Discomfort	1	2	3	4	5	6 7
56. Paul Everett, sixty five year old is recovering following surgery carried out in the morning to apply skin grafts to his right foot, following a scald he received some months ago.	Psychological	1	2	3	4	5	6 7
	Distress						
57. Six weeks ago Sarah Jones, a seven year old, lost her hold on the school climbing frame and suffered a fractured humerus. An appointment has been made for removal of the plaster.	Physical						
	Pain, Discomfort	1	2	3	4	5	6 7
58. Upon admission to A&E following a road traffic accident, Lewis Knapp thirty six years old was treated with traction. Surgery will be necessary to repair a fractured femur.	Psychological	1	2	3	4	5	6 7
	Distress						

		None			Mod-erate			Very Severe
59. Eleven year old Stanley Overton seemed unable to shake a cold and cough. Examined by his GP, his parents were informed that admission to hospital and antibiotic therapy will be necessary because of bronchopeumonia.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7
60. Admitted to the pediatric ward, Peter Goodwin, six years of age, is suspected of having leukaemia. At present he is being examined and tested to rule out this possibility.	Physical Pain, Discomfort	1	2	3	4	5	6	7
	Psychological Distress	1	2	3	4	5	6	7

For the following questions please write the answer in the box or tick the desired response.

61. Please state your name

62. please give your age in years

years

63. How many years nursing experience have you had since registering ?

years

64. Which ward are you currently working in ?

65. Have you ever suffered from a painful illness or undergone an operation

yes	
no	

66. Please state your country of origin

67. Do you think that pain relief following surgery is generally

very good	
good	
adequate	
poor	
very poor	

68. Do you consider the aim of post-operative pain relief is

to relieve the pain completely	
to relieve the pain as much as possible	
to relieve the pain enough so that the patient can tolerate it	
to relieve the pain enough to allow the patient to function	

69. Do you consider the number of patients likely to become addicted following the treatment of post-operative pain with narcotic analgesics

Less than 1%	
1-15%	
16-25%	
26-50%	
51-75%	
Greater than 75%	

70-82. For the following statements please tick the appropriate column

	True	False	Don't Know
If patients do not know what is going to happen to them and when,they will be anxious.			
Narcotic analgesics such as morphine are usually the only effective drugs to combat narcotic responsive severe pain.			
Pain is what ever the patient says it, is existing whenever he says it does.			
A patient usually adapts to pain, both physiologically and behaviourally even when pain remains at the same level.			
Overdosage of morphine can eventually stop respiration and cause death			
Anxiety is most often associated with acute pain while depression is most often associated with chronic pain			
If we know the cause of pain we can usually predict its duration and severity.			
Although tolerance for pain varies from one patient to another a patient usually has the same degree of tolerance at all times.			
The process of pain assessment requires active effort on the part of the nurse			
It is probable that many postoperative patients will become addicted to analgesics			
Preparing for a patient for surgery psychologically as well as physically is not likely to have any effect on his pain.			
A side effect of asprn taking aspirin is nausea and vomiting			

THANKYOU VERY MUCH FOR YOUR COOPERATION IN FILLING OUT THIS QUESTIONNAIRE.

Appendix 5



University of Brighton

01273 643477/8



Faculty of Health

Professor Michael Whiting

MA DPhil DPodM FChS FRSH

Dean of Faculty and Scholl Professor

3rd April 1997

Falmer

Brighton BN1 9PH

Telephone 01273 600900

Dear Nick Allcock,

Thank you for writing to me requesting permission to use an adaptation of the self administered knowledge test for nurses which I developed as part of my PhD work.

I am happy to give you permission and in so doing request that you acknowledge the source as well as any other ideas or information that you use from my work.

You may be interested to learn that I now can consider myself something of 'an expert' on post-operative pain. I recently underwent an open cholecystectomy. Thank goodness there is only one opportunity to relinquish a gallbladder! Talk about attitudes of nurses! Do they have 'inferences' about pain? Do they understand the meaning of the word? Do they understand 'psychological distress' or only the concept of power and control? I will be interested in your findings.

I am writing a new edition of my book. Read it please when it comes out. (If only to read my personal experience).

Let me know how you get on and good luck. There is a life after PhD!

Sincerely,

Beatrice Sofaer

Beatrice Sofaer.

And what is 'to understand'?

Appendix 6

Pain rating Scale

Name _____

Number _____

Below is a line representing no pain at one end to agonising pain at the other. Please indicate by marking a cross on the line how much pain you feel the patient is experiencing at the moment.

1) Patient _____

No Pain



Agonising Pain

Date_____ Time_____

2) Patient_____

No Pain



Agonising Pain

Date_____ Time_____

3) Patient _____

No Pain



Agonising Pain

Date_____ Time_____

Appendix 7

Pain rating Scale

Nurse_____ Number_____

Patient's name_____

Number_____

Below is a line representing no pain at the left hand side and agonising pain at the right hand side.
Please indicate by marking a cross on the line how much pain you are experiencing at the moment.



Date_____ Time of nurse rating_____

Time of patient rating_____

Appendix 8

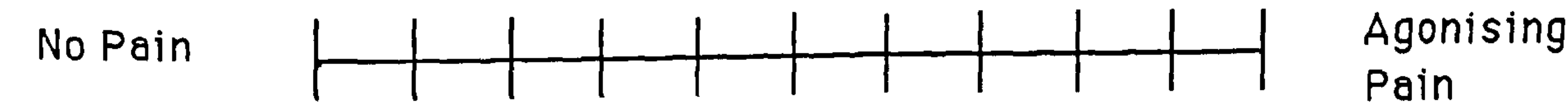
Pain rating Scale

Name_____ Number_____

Below is a line representing no pain at one end to agonising pain at the other. Please indicate by marking a cross on the line how much pain you feel the patient is experienceing at the moment.

1) Patient_____ Operation_____

Date and time of operation_____



Date_____ Time_____

2) Patient_____ Operation_____

Date and time of operation_____



Date_____ Time_____

3) Patient_____ Operation_____

Date and time of operation_____



Date_____ Time_____

Appendix 9

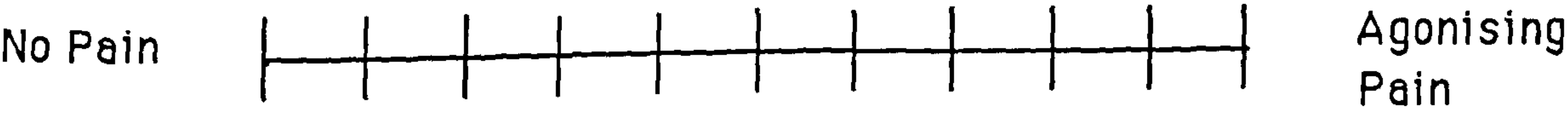
Pain rating Scale

Nurse_____ Number_____

Patient's name_____

Number_____

Below is a line representing no pain at the left hand side and agonising pain at the right hand side.
Please indicate by marking a cross on the line how much pain you are experiencing at the moment.



Date_____ Time of nurse rating_____

Time of patient rating_____

Appendix 10

Ask for: Mrs R Doyle

Your ref: Our ref: IMH/RD/CP

8 July 1992

Mr N Allcock
Lecturer
Nursing & Midwifery Studies
UHN

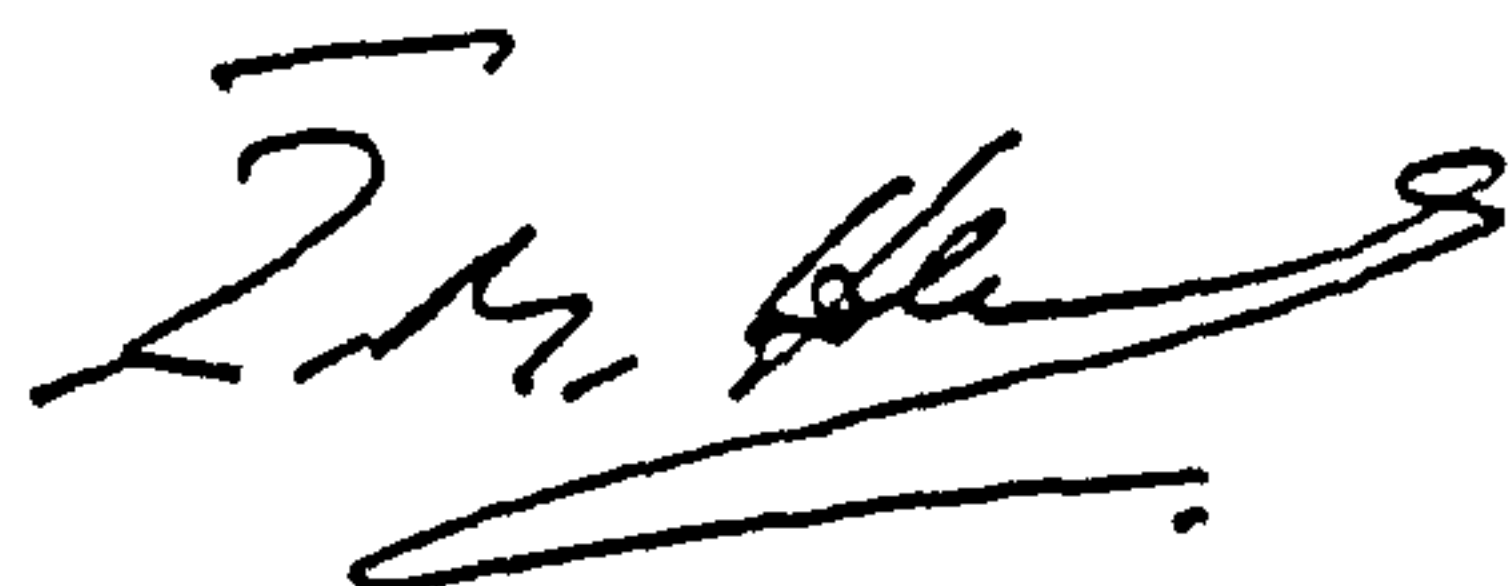
Dear Mr Allcock

Re: Nurses' and Student Nurses' Inferences of Pain and Psychological Distress.

Thank you for submitting the above project for consideration by the Ethics Committee.

This was considered at their last meeting and was approved.

Yours sincerely



Dr I M Holland
Honorary Secretary
Ethics Committee

Appendix 11

41324
NA



FACULTY of
MEDICINE

—

Department of
Nursing and
Midwifery Studies

Nurses' and Student nurses' Inferences of Pain And Psychological distress

Dear Nurse

Thankyou for taking the time to read this letter. The attached questionnaire is part of a project looking at the effect of nurse education on nurses' understanding of pain. The project has been approved by the hospital ethical comittee. As part of this project I would be grateful if you could find time to fill in the attached questionnaire which should take approximately 30 minutes.

You will note that I have asked you to record your name. This is to enable me to select a number of respondants to take part in another element of the research. This would involve me visiting the ward and asking you to record a pain score for some of your patients. Should you not wish to take part in this aspect of the research there is no need to record your name. No individuals will be identified in the research reports. If you have any questions regarding the research I would be pleased to discuss it with you.

All questionnaires returned by ----- will be entered into a draw for a £20.00 gift voucher.

Thankyou for your help

Nick Allcock
Lecturer in Nursing
Department of Nursing and Midwifery studies.

Medical School
Queen's
Medical Centre
Nottingham
NG7 2UH

—

Telephone
(0602) 709265

—

Telex
37346
(Uninot G)

—

Facsimile
(0602) 709922

Appendix 12

41324
NA



15th September 1993

Nurses' and Student nurses' Inferences of Pain And Psychological distress

FACULTY of
MEDICINE

—

Department of
Nursing and
Midwifery Studies

Dear Nurse

Recently I sent you a questionnaire which was part of a project looking at the effect of nurse education on nurse's understanding of pain. I note that I have not received a reply from you. If you felt unable to complete the questionnaire please ignore this letter. If however you still feel able to complete the questionnaire I would be grateful if you could return it to me in the internal post as soon as possible to allow you response to be included in the data.

Medical School
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Medical Centre
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NG7 2UH

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(0602) 709265

—
Telex
37346
(Uninot G)

—
Facsimile
(0602) 709922

The £20.00 voucher was won by T Moulds (E12)

Thankyou for your help in this project.

Nick Allcock
Lecturer in Nursing

Appendix 13

Patient Information Card

My name is Nck Allcock. I am a lecturer in the Department of Nursing studies. I am currently carrying out a project looking at post operative pain. I would like you to take part in the study. It involves you completing a scale which describes how much, if any pain you are experiencing at the moment. It will take a few minutes. You will not be identified and it will not affect your care in any way.

Appendix 14

Schedule for Interview

Length approx 45 Minutes:-

Tape Recorded

Intro

The aim is to explore the subjects experiences in caring for patients experiencing pain and the experiences of the subject of the topic of pain in class.

Subjects will be assured that their name will not be associated with the transcripts in any report, and that they have the right to refuse to answer any question.

Possible Questions

You mentioned in your questionnaire that you'd cared for patients in pain during your allocation in _____

can you remember

- any particular patients that had (a lot of) pain
 - what did the nurses do for the patient
 - did you think the care was good
 - how did the nurses react to the patient - how did you feel about that
 - how did being with the patient make you feel
 - how did you cope with these feelings
 - was there anything that surprised you
- any patients who's care well controlled well
 - what did the nurses do for the patient
 - did you think the care was good
 - how did the nurses react to the patient - how did you feel about that
 - how did being with the patient make you feel
 - how did you cope with these feelings
 - was there anything that surprised you

McCaffery suggests that pain is what ever the patient says it is, what do you think of that

Do you think some patients feel more pain than others

which patients feel more/ less pain

)

what makes you

do you think men/ women experience more pain

)

think this

How did nurses assess patients pain- did nurses always respond to patients pain

Do you think patients get as much analgesia as they should

How did nurses decide how much analgesia to give- how would you decide how much to give

Have you seen any complementary therapies used

- do you think they help

- which ones

How did the Doctors react to the patients in pain

Have you ever had to do something to a patient which caused them pain/discomfort

How did you try to reduce the pain

How did this make you feel

Can you remember anything that you've covered in the college on pain or discomfort

- was anything you covered new to you

- did anything you talked about in college change the way you feel about patients in pain

Do you think your attitude to patients in pain has changed since you've started training

- how do you think it has changed

- what do you think has made it change

Appendix 15

A Summary of the stages of Burnard's (1991) method of analysing interview transcripts in qualitative research.

Stage One.

Notes are made after each interview regarding the topics talked about in that interview. At times throughout the research project, the researcher also writes 'memos' about the ways of categorising data.

Stage Two

Transcripts are read through the notes made, throughout the reading, on general themes within the transcripts. The aim here is to become immersed in the data.

Stage Three

Transcripts are read through again and as many headings as necessary are written down to describe all aspects of content, excluding 'dross'. This stage is known as open coding.

Stage Four

The list of categories is surveyed by the researcher and grouped together under higher-order headings. The aim, here, is to reduce the numbers of categories by collapsing some of the ones that are similar into broader categories.

Stage Five

The new list of categories and sub-headings is worked through the repetitions or very similar headings are removed to produce a final list.

Stage Six

Two colleagues are invited to generate category systems, independently and without seeing the researcher's list. The three lists of categories are then discussed and adjustments made as necessary. The aim of this stage is to attempt to enhance the validity of the categorising method and to guard against researcher bias.

Stage Seven

Transcripts are re-read alongside the finally agreed list of categories and sub-headings to establish the degree to which the categories cover all aspects of the interviews. Adjustments are made as necessary.

Stage Eight

Each transcript is worked through with the list of categories and sub-headings and coded according to the list of categories headings.

Stage Nine

Each coded section of the interviews is cut out of the transcript and all items of each code are collected together. Multiple photocopies of the transcripts are used here to ensure that the context of the coded sections is maintained.

Stage Ten

The cut out sections are pasted onto sheets headed up with the appropriate headings and sub-headings.

Stage Eleven

Selected respondents are asked to check the appropriateness or otherwise of the category system. This allows for a check on the validity of the categorising process to be maintain.

Stage Twelve

All of the sections are filed together for direct reference when writing up the findings. Copies of the complete interviews are kept to hand during the writing up stage as are the original tape recordings.

Stage Thirteen

Once all of the sections are together, the writing up process begins. The researcher starts with the first section, selects the various examples of data that have been filed under that section and offers a commentary that links the example together.

Stage Fourteen

The researcher must decide whether or not to link the data examples and the commentary to literature.