

PAIN DESCRIPTION OF HOSPITALIZED CHINESE CANADIAN
AND NON-CHINESE CANADIAN SCHOOL-AGED CHILDREN

by

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ABSTRACT

Culture shapes our explanatory systems which influence how we perceive experience, express, and cope with illness and distress. Recognizing and being sensitive to cultural variation in pain perception and responses enhances assessment and management of pain in children. Such assessment not only assists accurate pain management but, also enable nurses to set aside personal values and judgements. Consequently, nurses begin to evaluate the significance of pain from the children's culture perspective, thus enabling therapeutic and effective pain management. A few studies have begun to examine the cultural variation in children's pain perception and expression. This study examining pain description of hospitalized Chinese and non-Chinese Canadian school-aged children, will contribute to the data bank on cultural variations in ethnic culture groups.

This descriptive study using a developed questionnaire tool was conducted at three sites in two hospitals. The data was obtained from children aged 7 to 12 years who recalled or recently experienced procedural pain, and prior to surgical procedures or major treatments. Twenty-two children who met the study criteria participated in the study; 10 were Chinese and 12 were non-Chinese Canadian subjects. Demographic data was collected from the families prior to the interview with the children and in a semi-structured interview using a developed questionnaire, each child was asked seven questions. Where appropriate, responses to the questions were categorized in pre-determined categories and descriptive statistics were used to analyze the findings. Content analysis were used in questions where they were not amenable to statistical analysis. Findings from each group were examined for trends in responses, and later were compared between groups to identify differences or

similarities in the patterns of responses.

Research findings from the questionnaire data revealed some similarities and a few notable differences between the Chinese and non-Chinese children. First, most children described the colour of pain using red. Second, Chinese children selected greater sensory words to describe pain compared to the non-Chinese children. Third, the Chinese children used less overt expressions in expressing feelings related to pain. Other identified patterns of behaviour unrelated to the questionnaire were; 1) the approval-seeking behaviour during the interview in the Chinese children, and 2) the parents' encouragement of their children to participate in the study in the Chinese group versus the parents' seeking permission from the children to participate in the non-Chinese children.

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CHAPTER ONE

Introduction

Culture shapes our explanatory systems which influences how we perceive, experience, express, and cope with illness and distress (Kleinman, 1974; Lock, 1993). Members of a culture learn to accept and expect cultural behavioural norms including behaviours associated with painful experiences (Meinhart & McCaffery, 1983). The patterns of evaluation of responses occur in the environment of the children's family, peers, and culture (Craig, 1980; McGrath & Craig, 1989). Children learn and become conditioned to cultural attitudes and values through modelling and socialization (Craig, 1978). Frequently, children observe physical and verbal reactions of their parents and respond similarly. At other times, children may reconstruct cultural messages from family (Valsiner, 1989). Within a family environment, children develop their personal culture and structure that remain acceptable within a culture (Valsiner, 1989). Culture plays an important role in the influence of perception and expression of behaviour (Dr. K. Craig, personal communication, June 1, 1995). Some cultures accept behavioural responses to pain, while other cultures encourage suppression of responses.

Recognizing and being sensitive to cultural variation in pain perception and responses further enhance assessment and management of pain in children (Abu-Saad, 1981, 1984a, 1984b; Baylock, 1968; Larkins, 1977). Such assessment not only assists accurate diagnosis and treatment but, also enable nurses to set aside personal values and judgements. Nurses then are able to evaluate the significance of pain from the children's cultural perspective and begin to appreciate the many ways of responding to pain.

To date, few studies have examined the cultural variations in children's pain response (Abu-Saad, 1984a, 1984b; Adams, 1990; Tesler, Savedra, Ward, Holzemer, & Wilkie, 1988). Continued research can contribute to the expanding knowledge of cultural variations in children's description of pain. Therefore, the focus of this study is to examine the ways two culturally different groups of children describe pain.

Before describing the study, the investigator will introduce and define the research problem and highlight the literature review on concepts related to the research focus.

Background to the Problem

Reliable nursing assessment is an integral aspect in treatment and management of pain. This is especially difficult in the pediatric population where multiple factors can influence assessment outcomes. Factors such as gender, age, and past pain experiences can affect pain perception and pain behaviours (McGrath & Hillier, 1989; McGrath & Unruh, 1987, Ross & Ross 1984a, 1984b; Savedra, Gibbons, Tesler, Ward, & Wegner, 1982). Though pain measurement and assessment tools have taken into consideration factors such as cognitive developmental stage, and chronicity and/or acuity of pain, or associated disease process, researchers have yet to develop culturally sensitive tools. Development of culturally sensitive tools is difficult when limited studies have explored variations and differences in children's pain perception and expression.

Pain measurement and assessment tools often reflect the western society's beliefs and attitudes (Meinhart & McCaffery, 1983). Nurses' use of tools to assess children's pain without some understanding of the children's cultural practices and attitudes may lead to inaccurate data collection about the pain, subsequently resulting

in inadequate pain management (Abu-Saad, 1984a; McGrath, 1990). A way to understand cultural attitudes about pain is to understand the manner in which cultural groups articulate their experiences.

Problem Statement

In order to recognize culture specific pain behaviours, researchers must begin to identify the cultural variations in pain perception and expression. A review of the literature reveals several classic and well-sited studies that have identified cultural variations in perception and expression of pain experiences in the adult population (Barak & Weisenberg, 1987; Chapman & Jones, 1944; Larkins, 1977; Sternback & Tursky, 1965; Woodrow, Friedman, Siegelau, & Collen, 1972; Zborowski, 1952). However, only a few studies examined culture and pain responses in the pediatric population (Abu-Saad, 1984a, 1984b, 1990; Adam, 1990; Tesler, Savedra, Ward, Holzemer, & Wilkie, 1988). The way children perceive and express pain is influenced by their culture which ultimately affects the way they describe pain. Researchers have expressed the need for further research to identify variations in perception and expression of pain among the pediatric population to provide new insights into pain assessment and management (Abu-Saad, 1984; Craig, 1980; McCaffery & Beebe, 1989).

Purpose

The purpose of this descriptive study is to examine the ways in which hospitalized Chinese Canadian and non-Chinese Canadian school-aged children describe acute pain experiences related to procedures. The children may or may not have had immediate prior pain experiences with procedures such as bloodwork, injection or intravenous insertion procedures. However, they must have recall of one

of the procedures. This enables them to orientate to at least one similar pain experience. The investigator used a developed questionnaire in a semistructured interview format to obtain information related to perception and expression of pain.

Conceptual Framework

The International Association for the Study of Pain (1979) defines pain as an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage. Pain sensation is common and universal for children and adults. Descriptions of pain vary extensively in quality (aching, burning, tearing, gnawing, stinging, throbbing, sharp, or dull), intensity (weak to strong), duration (a few seconds to years), frequency (constant or episodic), and unpleasantness (a mild annoyance to an intolerable discomfort) (McGrath, 1990). Children and adults experience pain differently even when the pain inducing stimulus is identical (McGrath, 1990). Based on this premise, the investigator attempted to limit the range of the painful stimulus by gathering data from children who had three similar pain experiences in order to reduce biased data. The three experiences included bloodwork, injection, and/or intravenous insertion procedures.

In children, acute pain caused by tissue damage is the most common type of pediatric pain (McGrath, 1990). Children experience three types of acute pain: (1) a momentary, mild to moderate pain from common diseases, routine injuries, and regular health treatments; (2) a longer, moderate to strong pain caused by major diseases, trauma, invasive treatments and surgery; and (3) varying mild to strong pain caused by repeated invasive procedures (McGrath & Hillier, 1989). To understand how culture influences the perception and expression of pain in children, we must first examine the underlying clinical aspect of pain; pain-releasing condition, also

known as noxious or nociceptive stimulus.

There are three commonly accepted theories of pain: Gate-Control Theory (Melzack & Wall, 1965); Specificity Theory (Kerr & Wilson, 1978); and Pattern Theory (Ross & Ross, 1988). It is the Gate-Control Theory that provides a partial conceptual framework for understanding the internal and external influences in pain perception.

The Gate-Control Theory (Melzack & Wall, 1965), proposes that psychological factors be viewed comparably to physiological factors in the influence of pain perception. In the Revised Gate-Control Theory of Pain, Melzack and Wall (1983) further suggest the existence of a neurophysiological mechanism located in the dorsal horns of the spinal cord. This neuro-physiological mechanism acts as a gate to regulate the flow of nociceptive impulses from peripheral nerve fibres to the spinal cord transmission T cells that project into the brain. Pain is the result of excess nociceptive impulses transmitted to the brain.

Melzack and Wall (1983) state the importance of the influences on the nociceptive impulses (somatic input) via the gating mechanism which alters pain perception and response. Two factors affecting the gate mechanisms are; (1) neurophysiological processes in the spinal cord, and (2) the sensory-discriminative, affective-motivational, and cognitive-evaluative systems in the central nervous system. The integration of the neurophysiological process and the sensory-discriminative, affective-motivational, and cognitive-evaluative systems influence the perception of pain.

The neurophysiological processes in the spinal cord consist of activities in the large (A-beta) and small (A-delta and C) fibres. Large (A-beta) fibre activity inhibits

nociceptive transmission by closing the gate. Smaller (A-delta and C) fibres facilitate nociceptive transmission, thus activating the gating mechanism. In addition, the smaller fibre activities will activate the T cells that transmit nociceptive information to neural areas in the brain responsible for pain experiences and responses.

The neurophysiological processes in response to noxious stimuli incorporates the sensory, affective and cognitive systems thus influencing the overt behavioural responses to pain. The sensory-discriminative system discriminates between a pain-related response, such as withdrawing, and the strength or intensity of nociception. In turn, the affective-motivational system modulates information from sensory inputs. Finally, the cognitive-evaluative system evaluates both sensory-discriminative and affective-motivational pain input. Variables such as culture, family factors and past pain experiences influence the cognitive-evaluative system's evaluation of the input.

Although the Revised Gate Control Theory of Pain (Melzack & Wall, 1983) proposes that the central nervous system mediation is a significant factor in pain perception, the factors within the central nervous system are not well delineated. Further discussions of how culture influences the cognitive-evaluative activities that affect sensory-discriminative and affective-motivational processes is limited and unclear. The Revised Gate-Control Theory does not explain how variables such as belonging to a cultural group influences the cognitive-evaluative system. Therefore, this theory is inadequate in providing the framework to explain how sociocultural factors influence pain perception and expression. To provide further support in understanding how culture influences the cognition and evaluation of pain experiences, the investigator will include the concepts of culture, cultural transmission, and language influence in this conceptual framework.

The nature of how culture is defined can influence how researchers perceive culture. Some definitions can be confining and static, or broad and undergoing change such as in Geertz's (1973). Geertz (1973) defines culture as a "historically transmitted pattern of meanings embodied in symbols, a system of inherited conceptions expressed in symbolic forms by knowledge about and attitudes toward life" (p. 89). Terms such as "meanings", "symbols," and "conceptions" require further expansion (Geertz, 1973). A narrower and more static definition is that culture is a pattern of life belonging to a particular group of people (Leininger, 1970).

Valsiner (1988) proposes that culture can be examined either in its static form or as undergoing continuous "structural transformation". Social norms, rituals, conduct rules, and meaning systems shared by persons belonging to a certain ethnically homogenous group, form the structural organization referred to as culture (Valsiner, 1988). The term "ethnically homogenous group" is not defined by Valsiner (1988). Valsiner (1988) further proposes that viewing culture from a dynamic perspective will help better understand the children's development within culturally structured environments. Within culturally structured environments, families remain the major influence of cultural values through socialization (Stratton, 1988).

Socialization is a process by which individuals acquire behaviours, values, attitudes, and roles expected from society (Bandura, 1977). Socialization through observational learning and modelling are to some extent accountable for cross-cultural differences in pain behaviour in adults and children (Craig, 1978).

Zborowski (1969) found that subsequent generations, following the immigrant family, to increasingly begin to resemble the pain behaviours associated with the host culture. Suinn, Ahuna, & Khoo (in press) propose that the degree of adherence to

ethnic culture inversely relates to the degree of acculturation to the host's culture: The more the families' participate in the tradition of their own culture, the less they are likely to adopt the beliefs and customs of the country the families now belong.

People systematically learn and transmit beliefs, values, and customs from generation to generation through socialization practices (Craig, 1978,1980; Kroeber, 1963). Beliefs and belief systems are ideology belonging to a group of people that explain in a satisfactory manner the way the world functions (Barclay, 1986) including that of health (Leininger, 1970). Beliefs, values, and customs within a culture are reinforced through socialization (Barclay, 1986; Valsiner, 1989).

Cultural transmission through socialization can be passive and unidirectional when parents transmit culture to the children (Valsiner, 1989). Such unidirectional perspective has prevailed among the social scientists and they assumed that children passively accept these socialization processes. However, a widely accepted co-constructivist theory of child development views cultural transmission as that of an active, bidirectional process (Valsiner, 1989). This perspective acknowledges the children's active involvement in the reconstruction of the parents' cultural view: The parents provide the foundation from which the children construct their personalities acceptable in the given culture (Valsiner, 1989). Such social environment enables transmission of cultural values. Within the social environment, language also can transmit cultural values and meanings.

Language "clarifies ambiguity, attaches meaning to events, and provides a conceptual structure for reference" (Craig, 1980, p. 47). Though children's repertoire of pain language develop as they mature, younger children remain capable of expressing pain experiences by describing the external properties such as 'burning' or

'bursting pain' (Craig, 1980).

Culture and language affect perception and cognition, and subsequently affect the pain experiences (Fabrega & Tyma, 1976). Ultimately, the knowledge of the native language of a culture, whether spoken or understood, can affect the way we perceive, express, and cope with pain experiences. Diller (1980) reports that

language-specific differences in pain reporting may be partly an effect, but partly also a cause, of culturally modulated differences in pain perception.

Language can exert a powerful influence on conscious attention but probably also on semiconscious and unconscious aspects of our species' cognitive abilities to deal with meaning (p. 24-25).

In summary, the children's active role in cultural transmission ensure that the culture is integrated into their cognitive and emotional development (Valsiner, 1989). With painful experiences, children learn behavioural responses through language, observation of other family members' behaviours, and exposure to families' cultural beliefs and attitudes (Craig, 1978, 1980; McGrath, 1990; Meinhart & McCaffery, 1983). Parents organize their children's "life environments" to promote the cultural knowledge for the children to acquire (Valsiner, 1989). For example, families reward and sanction children's display of appropriate responses, thus reinforcing culturally appropriate behaviour. Therefore, children of different cultures are likely to exhibit behaviours appropriate to a particular culture (Craig, 1978, 1980) when they participate in the culture's traditions (Suinn, Ahuna, & Khoo, in press). Variability in pain responses among groups often are explored and discussed, while variability within groups are seldom explored and discussions limited. Studies within a cultural group are more challenging as variability within groups are likely due to individual

differences in personality and indirect influences (Craig, 1978, 1980; Wolff, 1985).

Ultimately, Eastern and Western philosophies of managing and coping with pain will influence how we perceive and express pain.

Research Question

What are the ways hospitalized Chinese Canadian and non-Chinese Canadian children aged 8 to 12 years describe pain experiences who have had immediate or recalled experiences related to bloodwork, injection, or intravenous insertion procedures. A semistructured interview using a questionnaire tool with open-ended question format (Savedra, Gibbons, Tesler, Ward, & Wegner, 1982) (Appendix A) will be used in this study.

Definition of Terms

The following are the definitions used in this study:

Pain: 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, 1979).

Acute Pain: an unpleasant sensory and emotional experience "produced by a well defined noxious or tissue-damaging stimulus such as an injection or a bee sting" (McGrath, 1990) and has a predictable end (McCaffery & Beebe, 1989).

Procedural Pain: Acute pain experienced following hospital procedures such as those related to bloodwork, injection, and intravenous insertion.

Pain perception:

Conceptual definition: Basic sensory and motivational behaviours independent of physiological responses to pain

(Weisenberg, 1982).

Operational definition: Perception of experience and expressed in responses related to questions numbered; (1) causes of pain, (3) word descriptors of pain, and (4) colour of pain (Savendra, Gibbons, Tesler, Ward, & Wegner, 1982) (Appendix A).

Pain expression:

Conceptual definition: Pain behaviours and feelings subject to learning and conditioning (Weisenberg, 1982).

Operational definition: Verbal descriptions given by the child in response to the questions numbered; (2) worst pain experienced and related feelings, (5) feelings when in pain, (6) coping with pain, and (7) what is good about pain? (Savendra, Gibbons, Tesler, Ward, & Wegner, 1982) (Appendix A).

Hospitalized children aged 8 to 12 years: Any hospitalized child aged 8 to 12 years who meets the criteria for enrolment and who has recall of or have experienced procedural pain.

Chinese children: Any child who is of Chinese descent, speaks Chinese (Cantonese dialect), has been attending English school, and has lived in Canada more than one but no more than five years.

Canadian children: Any child with parents of Anglo-Saxon or European descent, first generation Canadian or more, has lived in Canada since

birth, and both parents and child speaks only English.

Assumptions

Assumptions inherent in this study are as follows:

- (1) All children experience pain, and;
- (2) All children in this age group can verbally respond and describe pain experiences when interviewed.

Significance of Study

This study will contribute to the existing body of knowledge pertaining to cultural differences in pain responses, and continue to build on existing knowledge about cultural variations in children's pain perception and expression. Nurses' awareness and knowledge of cultural pain behaviour and response variations can help the nurses to set aside their own pain beliefs, thus enabling them to assess pain from the patient's perspective. Consequently, nurses' increased sensitivity to cultural differences and practices in response to pain can enhance assessment, and subsequently plan a more therapeutic management regime (McGrath, 1990; Meinhart & McCaffery, 1983).

Accurate pain assessment is essential in decision-making about treatment and evaluation of the treatment's effectiveness (Ross & Ross, 1988). To maximize accurate pain assessment in cultural groups, researchers need to develop culturally sensitive pain assessment tools based on data collected from the respective cultural groups. Continued evidence that children's pain responses vary from culture to culture will provide support for development of culturally sensitive pain assessment tools. Such culturally sensitive assessment can lead to a greater therapeutic course of action sensitive to cultural needs (Leininger, 1989).

Summary

Multiple factors can affect children's responses to pain. For humans, responses to pain differ in relation to gender, age, and the development of personality within a culture. Depending on the degree of acculturation, individual's cultural background also may influence pain responses. How culture influences the pain responses is explored through the use of a conceptual framework. The framework consists of the neurophysiological aspects and the perspectives on socialization of culture. Consideration of cultural variations to pain responses is important since reliable assessment is essential to adequate management of pain. Therefore, the purpose of this study is to examine the ways hospitalized Chinese and Canadian school-aged children describe pain. The following section will discuss the literature related to pain, culture, and assessment.

CHAPTER TWO

Literature Review

A review of the published literature yielded very few studies that have identified the cultural variations in pediatric pain experiences. Therefore, this review focuses on literature and studies across disciplines that relates to pain, culture, and the supporting studies in the development of the Pediatric Pain Questionnaire (PPQ). The following review is organized into four areas; (1) pain concept, (2) cultural influences on pain, (3) pain assessment, and 4) Pediatric Pain Questionnaire.

Concept of Pain

The concept of pain and the underlying mechanism forms the partial conceptual framework for this study. The pain neurophysiological system's essential characteristic has important influences on pain expressions: Learning experiences dictate the systems potential for adaptation to environmental demands (Craig, 1980). This characteristic forms the basis for examining how the environment, and conditions under which the nociception and tissue damage occur, affects the pain reaction, and coping behaviours (Weisenberg, 1980). Factors influencing pain vary, but some relatively stable and sometimes unalterable personal attributes can affect the pain experiences (Meinhart & McCaffery, 1983).

Culture and Pain

In children, cultural influences through socialization processes have the greatest impact during the concrete operational stage of cognitive development. Theorists have proposed and demonstrated that children between the ages of 8 to 12 years are functioning in the concrete operational stage of cognitive development (Bandura, 1977; Piaget, 1969). During this stage, children are able to use their

thought processes to experience events and actions. Children's moral development and judgement also are developed during the operational stage of development (Piaget & Inhelder, 1969). Moral development and judgement involve adopting and internalizing the values of their parents and their standards (Bandura, 1977; Piaget & Inhelder, 1969). Weisenberg's (1980) theoretical framework for ethnocultural variations in pain expression suggests that familial cultural behaviours provide the context in which children interpret and internalize behaviours associated with pain. Differences in pain reaction between various cultural groups are probably due more to learning than innate mechanisms (Wolff, 1985). Craig (1980) states that interaction between individuals, and their physical and social environment leads to the development of patterns of expression that systematically reflect unique characteristics of those environments.

An important form of interaction between individuals and the environment is through language. Diller (1980) investigated and clarified pain terminologies cross-culturally by examining Thai semantics and its pain classification. The purpose of the study was to explore contrasts and distinctions among pain terms based on previous pain experiences. The researcher analyzed 150 spontaneous conversations on pain reports. Using the preliminary inventory of pain terms and associated terms, the researcher developed a questionnaire and tested on 50 subjects to obtain more control of the study. Diller (1980) compared his findings from the Thai language with other Asian languages, and found that language-specific differences in pain reporting may be partly an effect, but also a cause, of how pain is perceived due to cultural differences. Diller's (1980) conclusion corresponded to another study by Fabrega and Tyma (1976).

Fabrega and Tyma (1976) state that cultural groups categorize the pain phenomenon linguistically in order to express the pain experiences. In their study, Fabrega and Tyma (1976) compared descriptive pain terms among English, Japanese, and Thai languages. They found that English had four basic terms (pain, hurt, sore and ache), while Japanese had three, and Thai had two. By examining the use of language symbols and semantics, researchers were able to explore how different cultures perceive and express pain (Fabrega & Tyma, 1976).

Across cultures, the use of language may no longer play as important a role as does cultural values and attitudes. To better understand pain and its meaning across culture, Wolff (1985) suggests that researchers use "ethnic groups within the same country, or nation, where all individuals presumably speak the same language" (p. 28) and where these groups maintain some cultural traditions and customs. Using such a population, researchers can overcome difficulties associated with language in cross-cultural studies. Besides the effects of culture and language on perception and cognition (Fabrega & Tyma, 1976), cultural values also influence the way in which people describe pain (Melzack, 1973).

Researchers have found sufficient evidence to suggest cultural differences in adult pain experiences (Chapman & Jones, 1944; Larkins, 1977; Sternback & Tursky, 1965; Woodrow, Friedman, Siegelau, & Collen, 1972). However, studies in the pediatric population are limited.

In a classic study, Zborowski (1952) compared 26 adult "Old American" (native born, second generation or more, and "White") with American Italians, American Jews, and Irish-Americans. The researcher found "Old Americans" participants more stoic, "future-oriented", that is, concerned with the threat of pain

on health in the future, and withdrawn socially. Though the Italian participants were "present-oriented" and the Jewish participants "future-oriented", both Italian and Jewish participants demanded more of immediate pain relief and attention, and preferred social company when in pain. Zborowski (1952) also found that the patient's willingness to discuss their pain varied across ethnic groups. Zborowski (1952) concluded from this study that an inherent patterned attitude toward pain behaviour is present in each culture and that culture influences pain expression. In addition, culture dictates to the members whether to expect or tolerate pain in certain situations. Such findings suggest that different cultural groups define, perceive, and cope with pain differently. Zborowski's (1952) study too identified linkages between language and culture, and the communication of pain.

Tursky and Sternbach (1967) further studied Zborowski's three adult groups in physiological responses to pain. The findings identified physiological differences in pain expression, thus confirming Zborowski's conclusion that inherent patterned attitude toward pain is present in each culture.

Woodrow, Friedman, Siegelau, and Collen (1972) studied pain tolerance according to age, sex and race in 14,119 subjects who were part of a routine multiphasic health examination in the San Francisco area. "Race" in this study was determined by skin colour. The researchers developed and utilized a custom-built instrument to study the measured pain tolerance from deep pain on the Achilles tendon. The results showed that on average pain tolerance decreases with age, men tolerated more pain than women, and "Whites" tolerated more pain than "Orientals", while "Blacks" occupied an intermediate position. In this study, the researchers did not define culture but associated "race" to "culture". The researchers concluded that

the role of "culture" does influence pain tolerance.

Adams's (1990) study of pain in "Anglo" and "Hispanic" children with cancer identified "ethnic" group variation in pain responses and description. The author did not define the "Anglo" and "Hispanic" "ethnic" groups and data collectors used Spanish to interview the "Hispanic" subjects.

Seventy-eight children aged 3 to 15 years experiencing repetitive procedural pain participated in the study. The researcher assessed the children's pain using two techniques: (1) self-report using verbal and visual analog scales, and (2) observation of behaviour using a Procedure Behaviour Checklist (PBCL). Overall, the tools used by the researcher have demonstrated validity and reliability in procedural pain in previous studies with children (LeBaron & Zelter, 1984). The caregiver's assessment of the child's pain using a Likert-type scale also was examined. Finally, the parents level of anxiety was examined using a State-Trait Anxiety Inventory (STAI). This widely used scale has demonstrated reliability of 0.90 (Adams, 1990). All the tools were available in Spanish and the researcher had a Spanish speaking data collector. The researcher did not discuss the reliability and validity of the translated tools used in the study.

The researcher found that the "Hispanic" children exhibited earlier control over pain behaviour compared to that of "Anglo" children's pain behaviour. The caregiver's assessment of the "Anglo" children's pain highly correlated with the PBCL scores while correlation was low with the "Hispanic" children. The researcher suggests that there is probability of misperception when patient and caregiver are of different cultural groups. For example, the "Anglo" caregivers in assessing pain behaviours in the "Hispanic" children may not have recognized that the "Hispanic"

children demonstrated earlier control behaviours over pain. Therefore, the caregivers scored low in assessing the "Hispanic" children's pain while the children reported higher levels of pain and anxiety. Finally, "Hispanic" parents demonstrated higher levels of anxiety than the Anglo parents. Adam's (1990) findings are significant as the subjects were interviewed in their cultural language, and therefore were more likely to reflect the true expressions of pain and coping strategies.

Abu-Saad's (1984a) study of cultural group indicators of pediatric pain is one of few descriptive studies that examined culture and pain in the pediatric population. Seventy-two children from three cultural groups aged 9 to 12 years from the San Francisco Bay Area, responded to questions related to the perception, description, and responses to general painful experiences in a tool developed by Tesler, Savedra, Gibbons, Ward, and Wegner (1982).

The researcher identified that the Asian-American and Latin-American children more frequently selected red as the colour to describe pain than the Arab-American. Latin-American children frequently listed physical causes of pain while Asian-American listed psychological causes of pain more frequently than the other two groups. Arab-American and Latin-American children more frequently used sensory words to describe pain, whereas the Asian-American children used more words in the affective and evaluative domains.

From this study, the researcher further analyzed the Asian-American group who were first-generation of Asian birth parents (1984b). Abu-Saad (1984b) identified that the majority of Asian-American children referred to Chinese medicine as the medicine for alleviating pain (Abu-Saad, 1984b). Abu-Saad (1984b) also examined gender differences and found that more girls than boys listed psychological

causes of pain and described pain graphically using affective and evaluative words.

Using self-reports through interviews do not lend themselves to traditional measurements of reliability or validity. The questionnaire used in both Abu-Saad's (1984a,1984b) studies allowed the children a range of expression and freedom of expression, thus enabling the researcher the most accurate understanding of the ways children describe pain.

Theorists and researchers have proposed that language affects the perception and cognition. In both studies, Abu-Saad (1984a, 1984b) conducted the interviews in English and the author did not identify whether the subjects speak or understand the native language of their culture. Since language can influence the meaning and value of pain consequently, the conclusion that the observed different pain descriptions among the three cultural groups are due to the cultural differences is not conclusive. Further studies using native speakers and non-native speakers within and between cultural groups would lend support to the effects of language on pain perception. Also, examining family factors in helping the child to feel better and comparing cross-culturally can provide further evidence that variations are attributed to culture differences.

Pain Assessment

Conceptualization of pain is that of a multidimensional, subjective, and personal experience (McCaffery & Beebe, 1989; McGuire, 1992). Therefore, a multidimensional approach to pain assessment is an integral aspect for accurate assessment and successful pain management.

The six major dimensions currently supported by theories of pain and patient's clinical experience are; physiologic, sensory, affective, cognitive, behavioural, and

sociocultural (McGuire, 1992; Melzack, 1983; Wall & Melzack, 1989). The multidimensional approach examines two or more dimensions simultaneously. This approach provides more comprehensive information and allows for concurrent utilization of several measures (Beyer & Knapp, 1986; Bush, 1987; LeBaron & Zelter, 1984; McGuire, 1992; McGrath, 1990; Melzack, 1975, 1987; Ross & Ross, 1988; Thompson & Varni, 1986). Also, a multidimensional approach permits subjective experiences to be objectively evaluated (McGrath, deVeber, & Hearn, 1985). Some measures are well-developed, frequently utilized, and have established reliability and validity in children (Abu-Saad & Holzemer, 1981; Beyer & Aradine, 1988; Beyer & Knapp, 1986; Lollar, Smits, & Patterson, 1982; Melzack, 1975), while others provide baseline and ongoing assessment of pain. However, researchers have not tested these approaches for cross-cultural validity and reliability.

Projective methods and direct measures are multidimensional approaches utilizing various tools to assess children's perceptions, or their psychological experience of pain. Inferences about children's pain attitudes or perceptions can be made through projective methods. Both projective and direct methods include tools that examine colour selection, drawings, interpretations of pictures, and descriptions of feelings through self-report, and interview methods (Abu-Saad, 1981; Beyer & Knapp, 1986; Eland, 1983; Kurylszyn, McGrath, Cappelli, & Humphreys, 1987; Ross & Ross, 1984a; Savedra, Gibbons, Tesler, Ward, & Wegner, 1982; Tesler, Savedra, Ward, Holzemer, & Wilkie, 1988). Colour selection and interpretation of pictures may reflect the dominant culture values and attitudes, thus may not be representative of other cultures. However, further measurements using these methods cross-culturally can assist in developing culturally sensitive tools.

Verbal self-report methods provide a reliable indicator of how much pain a person is experiencing (Meinhart & McCaffery, 1983). In children, verbal self-report methods are most valuable during preschool and school-age levels (Ross & Ross, 1984b, 1988; Thompson & Varni, 1986). Self-reports in the form of questionnaires also are well suited for school-aged children (McGrath, 1990, Ross & Ross, 1984b, 1988) as they have the ability to verbally describe pain (Beyer & Wells, 1989). However, in Gaffney's (1988) investigation of developmental aspects of children's descriptions of pain, the investigator found that children younger than 7 or 8 years have limited verbal ability to describe pain.

For optimum responses in self-reports of pain descriptors, careful consideration must be given to the ordering of questions (Ross & Ross, 1988). Ross and Ross (1988) state that it is important for respondents to generate pain descriptors before selecting words from a checklist. A generate-response format "allows complete freedom in choice of answer without biasing the direction that the answer might take" (Ross & Ross, 1984, p. 73).

Reliability and validity of self-report measures are a concern for investigators. Do self-reports truly measure pain and are they consistent? However, reliability and validity can be estimated through consistency of the type of responses (Beyer & Knapp, 1986).

In a study by Lollar, Smits and Patterson (1982) using self-report measures, the researchers demonstrated reliability and validity of the Pediatric Pain Inventory (PPI) tool: Quantitative measures identified not only intensity and duration but, also different types of pain. Several researchers have acknowledged that self-reports reflect the subjective experience of pain and thus, remain the best indicator of pain

experience (Beyer and Wells, 1989; Huda & Holzemer, 1981).

Since early life experiences are influenced by familial socialization and language use, self-report of pain would be sensitive to such affects. Researchers have used the self-report methods with some success in attempts to identify cultural variations in pain description (Abu-Saad, 1984a; Tesler, Savedra, Ward, Holzemer, & Wilkie, 1988). However, more research is required to lend support to current findings.

A combination of self-report measures in a semistructured interview format permit the interviewer to obtain consistent information (LeBaron & Zelter, 1984; McGrath, 1990). Also, this format allows the interviewer to examine aspects of pain in depth with each child. Though self-report methods and interview techniques are not without their bias, they are deemed suitable for this study's purpose; examining perception and expression related to recent or past pain experiences.

Pediatric Pain Questionnaire

The Pediatric Pain Questionnaire (PPQ) developed by Savedra, Gibbons, Tesler, Ward, and Wegner (1982) is a self-report developed from several studies in examining children's pain perception and expression as well as studies in adults. This self-report is used in a semistructured interview where the open-ended questions average 20-30 minutes for completion. The questionnaire examines the perception and expression of pain by asking questions related to the following categories: (1) causes of pain, (2) word descriptors of pain, (3) colour of pain, (4) feelings when in pain, (5) worst pain and related feelings, (6) coping with pain, and (7) what is good about pain? (Appendix A).

Savedra and colleagues (1982) developed the Pediatric Pain Questionnaire

(PPQ) based on the works of Schultz (1971), Melzack and Torgenson (1971), and Scott (1978). Questions 2 and 5 are based on studies by Melzack (1975), and Melzack and Torgenson (1971) where all forms of the McGill Pain Questionnaire (MPQ) have established validity and reliability in the adult population of various sociocultural backgrounds experiencing various types of pain.

A limitation of the MPQ is that it contains words many patients do not understand and requires a command of the English language. Savedra and colleagues (1982) listed the 24 verbal descriptors based on MPQ's list of 78 descriptors. The investigators found in their study that "Caucasian" school-aged children aged 9-12 years were able to select from the list of 24 verbal descriptors. Abu-Saad's (1984a, 1984b) studies also found that Asian-, Arab-, and Latin-American 9 to 12 year olds were able to select from the list of verbal descriptors. Another limitation of the MPQ is that the MPQ word list has not adequately been examined for effects of gender, age or ethnicity on word selection (Wilkie, Savedra, Holzemer, Tesler, & Paul, 1990).

Translations of the MPQ are available in several languages but their use have been limited. As discussed in the section of Culture and Pain, cultural groups categorize the pain phenomenon linguistically in order to express pain (Fabrega & Tyma, 1976). Therefore it is the belief of this investigator that any attempts to translate the PPQ will not capture the true meaning or expression of pain.

Savedra and colleagues (1982) based the remaining five questions on studies by Schultz (1971) and Scott (1978). These researchers developed questions that examined how children perceived pain and reported on their pain perceptions. Schultz (1971) and Scott (1978) did not report on the validity or reliability of their

findings.

Scott's (1978) primary purpose was to gather information on sensory, cognitive, and affective factors associated with children's pain perception in response to perceived continuous versus intermittent quality of pain. The researcher explored qualities of pain experience through perceived colour of pain, texture, shape, and pattern. This synaesthetic aspects of pain was Scott's attempt to gather data for the development for pain perception scale.

Scott (1978) interviewed fifty-eight children from Kindergarten and Grades 1 through 3 in hospital outpatient clinics and schools. Cultural background of the sample was not identified. First, subjects were shown a child experiencing pain resulting in a hammer blow on to a finger. Following, the subjects were shown another child experiencing pain due to an injection.

In this study, the researcher attempted to quantify children's pain perception and had acknowledged the need for further studies to confirm the results. Scott's (1978) findings showed children describing the hammer pain using dark colours more often than light, while the needle pain was described using light colours. Also, Scott (1978) found trends in the quality, pattern, and duration of pain perception between the hammer and needle pain.

Scott's (1978) study demonstrated that children were able to associate colours, patterns, and textures to pain experiences though the findings were tentative. However, the findings were sufficiently significant to support inclusion of all or some aspects of synaesthetic pain aspects in examining children's pain perception. In the PPQ (Savard, Gibbons, Tesler, Ward, and Wegner, 1982), the authors have included a question on the colour of pain which also have demonstrated to be culturally

sensitive (Abu-Saad, 1984a). As discussed, different culturally groups have described pain using different colours (Abu-Saad, 1984a).

Another study which Savedra and her colleagues (1982) based their PPQ on was Schultz's (1971) study of seventy-four 10 and 11 year olds of "Black" and "White" children in the school setting. Schultz's (1971) primary purpose was to examine how children within an age-stage development perceived pain.

Schultz (1971) developed five questions. Two questions were related to the reasons for hospitalization and previous hospitalizations. The remaining three questions were related to listing previous pain experiences, expressing their feelings related to pain, and the meaning of pain.

In the analysis of the data, Schultz (1971) identified a broad range of responses that ranged from physiologic to psychologic categories. The common responses included having no control, fear, nervous, and screaming. The researcher found gender differences while differences in the "Black" and "White" children were not reported.

Schultz's study did not include any rigorous statistical analysis that would support the reliability and validity of her findings. Nevertheless, her study findings demonstrated that 10 and 11 year old children were able to express their feelings with several common responses. Savedra and colleagues (1982) expanded question 4 in the PPQ to include those responses found in Schultz's (1971) study. In the PPQ, respondents are asked to circle 'yes' or 'no' to 14 responses about how they feel when in pain.

Finally, Savedra and her colleagues (1982) assessed their PPQ in a study of 100 hospitalized and 114 non-hospitalized children, where the researchers interviewed

the hospitalized children between the second and seventh day of their hospitalization. The researchers found hospitalized children selected more evaluative words like "sickening" and "like a pinch" more frequently than non-hospitalized children. They also identified that girls selected evaluative and affective words while boys selected sensory words. These were the same findings related to gender selection of words in Abu-Saad's (1984b) study.

In Savedra's (1982) study, the authors found the interrater reliability at 0.83, and statistical significance related to questions 1, 3, 4, and 5. Such reliability demonstrates the consistency over interrater agreement. However, there were no data to demonstrate interrater reliability cross-culturally i.e., would a non-Chinese rater obtain the same data as that of a Chinese rater? Would differences be significant in subjects who speak the language of an ethnic culture or who do not speak English well? In this study, cross-cultural interrater reliability will not be examined as there will only be one researcher administering the tool.

As identified in the section of Culture and Pain, two studies by Abu-Saad (1984a, 1984b) using the Pediatric Pain Questionnaire demonstrated that the tool showed degrees of non-statistical significance related to culture, age, and/or gender in how children responded to the questions. Traditional statistics to ascertain reliability and validity is difficult to establish in self-reports (Beyer & Knapp, 1986). However, reliability and validity can be estimated via the consistency of the type of responses and the overall representation of the questions (Beyer & Knapp, 1986).

The PPQ is based on works of other researchers, some of which have established reliability and validity. However, the overall reliability and validity of the PPQ cannot be established due to the subjective nature of the pain experiences and

perceptions, and the limited studies using the PPQ tool. In Abu-Saad's (1984a, 1984b) studies, the author was able to identify common and consistent responses within and amongst the children from the three different cultures. Such findings only provide an estimation of the reliability and validity of the tool (Beyer & Knapp, 1986). Limited studies and a lack of reliability and validity is a recognized limitation of the PPQ and of this study.

Summary

The review of literature focused on four areas; three areas that provided the basis for this study's conceptual framework and the other, the instrument used in this study. The perception of pain can be explained neurophysiologically but does not entirely account for the pain experience. The effects of the environment and personal attributes also can influence the pain experience. Several studies in the adult population and few studies with children have conclusively identified cultural differences in pain behaviour.

Pain behaviour is difficult to assess due to its subjective nature and even more so in children. However, due to extensive studies using assessment tools and various techniques, researchers have suggested that a combination of methods increases the reliability in assessing children's pain. Understanding the mechanisms of pain, identifying cultural differences in pain expression and perception, and using a reliable culturally sensitive tool to assess children's pain can provide culturally sensitive effective pain management. However, researchers first need to continue to explore and collate information on pain description in children from various cultural groups.

The Pediatric Pain Questionnaire elicits pain description from children and has shown sensitivity to cultural variations. The tool does not examine the cause and

effect behaviour but that of association or differences in responses of different cultural groups. This author hopes that this study will contribute to the data bank of cross-cultural pain studies in children.

CHAPTER THREE

Research Methods

This chapter describes the research methods employed to obtain information about the ways Chinese Canadian and non-Chinese Canadian children describe pain.

Research Design

A descriptive design was utilized in this research as it allowed the investigator to gain insights and/or increase knowledge of a phenomenon where little research has been conducted (Burns & Grove, 1987). The investigator, with permission (Appendix B), used the Pediatric Pain Questionnaire (PPQ) developed by Savedra, Gibbons, Tesler, Ward, and Wegner (1982) to explore ways in which Chinese and non-Chinese Canadian children describe pain.

This semistructured interview with its open-ended question format lends itself to examining perception and expression related to past and actual pain experiences as discussed in Chapter Two, Pain Assessment section. It is established that open-ended question format and the categories as identified in Savedra's (1982) study are suitable in seeking children's opinions, beliefs, attitudes, and expectations (Ross & Ross, 1984a, 1984b; Schultz, 1971; Scott, 1978; Tesler, Savedra, Ward, Holzemer, & Wilkie, 1988).

In addition, researchers have identified the importance of respondents generating pain descriptors before selecting words from a wordlist (Ross & Ross, 1984a, 1988). Presenting the word descriptors can bias the subject's response prior to their own responses (Ross & Ross, 1984a, 1988). Therefore in this study, the investigator modified the tool by resequencing the questions to avoid response bias (Appendix C). In the resequenced questionnaire, question (5) about worst pain and

related feelings was asked prior to question (2), circling word descriptors of pain.

In order to ensure that each participant orientated to one similar painful experience when responding to the questions, this investigator imposed some environmental control. All the children were asked to recall painful procedures related to one of three experiences with the needle poke (injection, bloodwork, and/or intravenous insertion) which they either had recently experienced or in the past.

Setting

Three sites in the lower mainland area were used; 1) a surgical day-care unit and 2) a pre-admission clinic in a pediatric tertiary care teaching hospital, and 3) a pediatric ward affiliated with the same pediatric tertiary care agency but located in a community acute care general hospital. Most subjects were admitted for minor surgical procedures and several for intravenous antibiotic treatments for infections, and all the subjects recalled procedural pain experiences. The three sites were equally accessed to obtain 22 subjects for the study within a 3 month period. All interviews were conducted on site at the hospitals in quiet areas either in the surgical day care unit, pre-admission clinic, or on the ward in a patient room.

Selection Criteria

Children who met the following criteria were included in this study:

- (1) Pre-admission or hospitalized Chinese and Canadian children aged 8 to 12 years who had experienced procedural pain related to bloodwork, injections, and intravenous insertion but prior to any surgical interventions or medical treatments;
- (2) Chinese children include any child who were of Chinese descent, spoke

Chinese (Cantonese dialect), attended English schools, and had lived in Canada more than one but not more than five years;

- (3) Canadian children included any child who were of Anglo-Saxon or European descent, first generation Canadian or more, spoke only English, had lived in Canada since birth, and whose parents spoke only English;
- (4) Admission for minor surgical procedures with operating time under one hour, and/or management of health problems including medication adjustments, monitoring, and investigative procedures;
- (5) Up to the point of interview, the children's hospitalizations were uncomplicated and;
- (6) Children who were attending regular schools and had no known learning disabilities.

Children were excluded from the study if they:

- (1) were admitted to oncology unit, for cardiac surgery, neurosurgery, or were in isolation;
- (2) had a known history of chronic pain, or;
- (3) had physical or cognitive special needs.

Later in the study, the inclusion criteria number 1) and 2) were expanded due to the limited subject accrual and time constraint. Included in criteria (1), were children who did not have procedural experiences with needle poke immediately prior to the interview, but were able to recall previous related experiences. Also, the age group were expanded to include those children 7 years and above. Criteria (2) was expanded in the Chinese-Canadian group to include children who were born in Canada and spoke Cantonese fluently. The assessment of fluency was based on

verbal report by the parent(s). Also, criteria (4) was expanded to include surgeries that were no more than two hours, as few surgeries were under one hour.

Selection procedure

Subjects were selected through purposive sampling and those who met the selection criteria were enrolled. The criteria relating to the cultural background in the Cantonese-Chinese population was carefully selected to represent as closely as possible the larger Chinese population within the city. According to the 1993 B.C. Stats (Province of British Columbia, 1993), Europeans were identified as the predominant immigrant population pre-1961. However, the European immigrant population have been declining over the last two decades. The trend is toward increased Asian and other non-European immigrants with the greatest numbers from Asia with the predominant immigrants from Hong Kong (Province of British Columbia, 1993).

Subject recruitment occurred following:

- 1) approval from the University of British Columbia Behavioural Sciences Screening Committee for Research and Other Studies Involving Human Subjects (Appendix D);
- 2) approval from the respective Research Review Committees of the participating hospital (Appendix E);
- 3) verbal notification to and permission from directors of patient services and the medical directors of the participating units in the hospitals, and;
- 4) briefing of the study and methods by the investigator to the directors and their unit staff. A set of information package was left with each unit for reference which includes a study summary, consent forms, and the questionnaire.

The investigator made arrangements with the staff at each participating unit/clinic/ward to identify eligible subjects for recruitment. First, with each unit/clinic/ward, the investigator had to telephone the day before at specified preferred time(s) to identify children who were between 8 and 12 years, and had surgery times less than two hours. During this telephone contact, the investigator identified all potential children based on purpose of admission and the duration of surgery. Then, the scheduled time of admission for the potential subjects was obtained. Eligibility was determined during the visit. Timing this investigator's visit to the hospital was a challenge at the start of the study. Many potential subjects were lost as they were either taken to surgery early or were delayed. Later, the investigator made arrangements to contact the staff approximately one hour before scheduled appointment to confirm time of admission. Staff members from two locations took the responsibility to contact this investigator when there was a change in schedule.

Next, on the day of the patient's admission to the hospital (1 1/2 hours prior to surgery), the investigator approached the potential children and their families to explain the study, its purpose and allowed them to review the consent form (Appendix F). A Chinese consent form was made available to the Chinese parents (Appendix G) as needed. During this initial meeting, the investigator also obtained some preliminary demographic data (Appendix H). Data to determine eligibility included number of years residing in Canada and if the child spoke Chinese in the Chinese group, and in the non-Chinese group, if the child spoke another language. Of those children and families who were eligible and have agreed to participate, the investigator obtained written consent from the parents and verbal consent from the

children only following admission into the unit and/or clinic.

The average time of questionnaire completion for both groups ranged from 15 to 26 minutes with an average time of 20 minutes. The investigator conducted and completed the data collection within 3 months.

Data Collection

Two types of data were gathered, demographic and questionnaire data. The questionnaire data were gathered from the children following admission to the unit/clinic/ward and once consent was obtained. Prior to beginning the interview, remaining demographic data were gathered from the parents. Parents were then asked to leave or where convenient, the children were taken to a quiet room. It is the belief of this investigator that the presence of the family member(s) may restrict and or influence the child's responses thus limiting the true responses from the child. The family and staff always were informed of the children's whereabouts.

The investigator reminded the children again, prior to the start of the interview that this interview and the questions asked were not a test. As well, all information shared with the investigator will remain confidential. Next, subjects were asked to select a mechanical pencil which they were allowed to keep following the interview. At times, this task seemed more challenging than expected as the children had to make decisions related to the choice of pencil colour.

Finally, the investigator began the interview by reviewing the questions from the PPQ with each subject question and allowing each child to read the question with the investigator. The children were given time for written responses between questions. When the children posed questions from the questionnaire, the investigator reread the question to the child. Rereading the question prevented the

investigator from inadvertently prompting the children that would guide their answers. All communication with parents and interviews with the children were conducted in English.

Ethical Considerations

To assure protection of the human rights of the children and their families, the study met the criteria set forth and approved by the University of British Columbia Behavioural Sciences Screening Committee for Research and Other Studies Involving Human Subjects. In addition, the study received approval from the participating agencies before gaining access to the study setting and subjects.

The subjects and their families were aware that the participation in this study was voluntary and subjects could withdraw at any time during the study period without affecting the subjects' care. Subjects and their families were informed of the study protocol and consented to participation in the study prior to the interview with the subjects. The investigator carefully explained the study to the children and ensured that they were aware of their rights to not participate if they chose not to. The investigator was prepared to explain the study in Chinese, however this was not required. Parents and the subjects signed two copies of the consent form; The subjects and their families were given a copy of the consent form and the investigator kept the other. All the Chinese subjects and their families signed and kept a copy of the Chinese version of the consent form.

Children and their parents were completely identified only on the consent forms. Initials and subject numbers were used in all other references to maintain confidentiality. The data were kept under lock and key, and only available to the investigator and the thesis committee members. At the end of this study, the

investigator will destroy all data. Children and their parents also were reassured of confidentiality in this study and in future study publications.

Data Analysis

Demographic Data

The demographic data gathered were reviewed and summarized according to each component. Frequencies and/or percentage distributions were calculated for all components except for age, Grade level, and gender. Measurement of central tendency were used to analyzed these three sets of data. Data related to age and Grade, ratio level variables, were analyzed using the mean measurement. Data related to gender, a nominal level variable, was analyzed using the mode measurement. The mode measures typicality by identifying the most frequently occurring score while the mean measures the central tendency of the distribution (Leonard, 1976).

Questionnaire Data

Descriptive statistics were used to analyze the data from the questionnaire. Descriptive statistics enable the investigator to organize raw data into meaningful and manageable data (Polit & Hungler, 1991). In this study, the use of descriptive statistics allowed the investigator to summarize the data, and enabled interpretation of the data to describe the patterns of children's pain description to facilitate insight into cultural variation of pain perception and expression.

Summary statistics of grouped and ungrouped frequencies, and percentage distribution on questions (1) through (5) were calculated. However, in questions (6) coping with pain, and (7) what is good about pain?, the investigator analyzed the content examining the characteristics of the descriptions, and if variations between

groups exist. The following are specifics of the analysis of the seven questions on the newly sequenced questionnaire.

Responses to question (1) (List three things that have happened to you that have made you feel pain) were listed and their frequencies determined. Then the listed categories were compressed into three predetermined broad categories as described by Savedra et al (1988). The three categories were "physical external (falls, hits, cuts, smashed fingers, etc), physical internal (pains and aches, disease, surgery/surgery related), and psychological/miscellaneous" (Savedra, Gibbons, Tesler, Ward, & Wegner, 1982, p.97). Frequencies and percentage distribution were calculated in the compressed categories of each subcategory from each of the two groups. The findings were examined within and between groups.

Responses to question (2) (Remember the worst pain you have had. What was it? Tell how it felt. What words would describe it?) were listed and frequencies were calculated for those responses related to feelings about pain and word description. Then these listed responses were compressed into three categories developed by Melzack (1975) and also used by Savedra et al (1982) in her study. The three categories included; sensory words (temporal, spatial, pressure, thermal, etc); affective words (tension, fear, autonomic properties; and evaluative words (overall pain intensity). An additional category of 'no word' was added by Savedra et al (1982) in the development of the PPQ for children who do not select any word or words to describe their pain. The investigator placed the words in the respective categories following Melzack and Torgenson's (1971) spatial display of pain descriptors. Frequency and percentage distribution for these compressed categories were calculated and examined between groups.

In question (3) (Circle the words that describe pain), the subjects were asked to circle words that describe pain from a list of 24 words. The investigator tabulated the frequencies of the responses and compressed them into the three predetermined categories; sensory, affective and evaluative words (Melzack, 1975). Once again, the placement of word categories were based on Melzack and Torgenson's (1971) spatial display of pain descriptors. In the compressed categories, grouped frequencies and percentage distribution were calculated within groups and differences examined between the two cultural groups.

Responses to question (4) (What colour is pain?) and question 5 (When I have pain I feel ...) were listed, and frequency and percentage distribution were calculated within groups and examined between groups.

Finally, responses to question 6 (What helps you feel better when you have pain?), and question 7 (What is good about pain) were subjected to content analysis. This type of analysis in its basic form enables the investigator to describe the characteristics of the messages and to compare the messages (Polit & Hungler, 1991). In this study, the comparison was done across two types of sources, Chinese and non-Chinese. The responses were listed, and were grouped by types according to the characteristics. The types and characteristics within and between groups were described.

The discussion of the findings will include description and comparison of data analyses, and where appropriate, inferences about the contributing factors to variations within or between groups.

Further data analysis and conclusions can be made by examining the relationship of age and gender on how hospitalized children describe pain. However,

for the purpose of examining the ways hospitalized children describe pain due to cultural influences, the investigator only analyzed and drew conclusions about whether there were variations between the two cultural groups based on the findings.

Limitations

This study's sample size of 22 children although adequate to answer the research question (Polit & Hungler, 1991), limited the generalizability of the findings. Larger samples produce a more accurate estimate of the larger population, therefore the larger the sample size the more representative the findings are to the larger population (Polit & Hungler, 1991). Second, the children were asked to recall pain experiences related to needle pokes rather than asking them to comment upon recent pain experiences. Recalling needle poke pain experiences reflect a specific type of pain experience, therefore the responses may not represent general pain experiences. Lastly, limited studies and a lack of reliability and validity is a recognized limitation of the PPQ and of this study. This research must be viewed as an exploratory study to gain further insight into pain perception and expression in Chinese and non-Chinese children.

Summary

Conducting research in pediatric pain is not without obstacles and even more so when researchers begin to examine cultural influences on pediatric pain perception and expression. Gathering reliable and valid data on pain perception and expression rely on tools sensitive to cultural variations. The PPQ, developed by Savedra, Gibbons, Tesler, Ward, & Wegner (1982) has demonstrated sensitivity when used to explore cultural variations (Abu-Saad, 1984a). Also, the PPQ enabled analysis of responses through descriptive statistics, and the types and range of responses. The

following chapter will present an analysis of the data gathered in this study using the PPQ and from the demographic data.

CHAPTER FOUR

Analysis and Discussion

The analysis in this chapter is presented in two sections. First, the demographic data section describes the study sample within each cultural group based on the components from the gathered demographic data. In the second section, the analysis and discussion of the questionnaire data, grouped within each cultural group, are presented in sub-sections related to each question. Within this sub-section, a discussion follows the presentation of each interview question data where the pain description responses from each group of children is compared and discussed. This chapter concludes with a summary description of the study sample and summary findings from the questionnaire.

Demographic Data

A total of 22 children participated in this study. Three sites in two hospitals in a metropolitan city in Canada were accessed for subject participation. All the children were selected through random purposive sampling and all eligible children accepted the invitation to participate in the study, some with encouragement from the parents.

Chinese-Canadian Group

Gender. In the Chinese group of 10 subjects ($n=10$), 6 (60%) were boys and 4 (40%) were girls. The ratio of boys to girls occurred randomly.

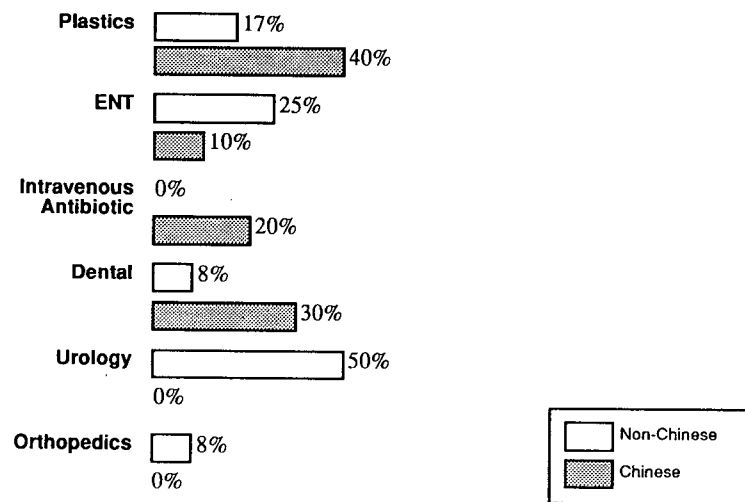
Hospital: unit/clinic. Forty percent ($n=4$) of the admissions were in the major tertiary centre, while 60% ($n=6$) were admitted to the affiliated pediatric centre in a community hospital. Table 1 provides a breakdown of the unit/clinic admission in each of the hospitals for the Chinese and non-Chinese group.

Table 1

Frequency distribution of location of admissions

Hospital Unit	Chinese (n=10) Frequency	non-Chinese (n=12) Frequency
MSJ	6	4
Day-care	(2)	(4)
In-patient	(4)	(0)
BCCH	4	8
Day-care	(4)	(6)
Pre-admission	(0)	(2)
Total	<u>10</u>	<u>12</u>

Purpose of admission. Reasons for admissions included surgeries, procedures and/or treatments related to; 40% (n=4) plastics, 10% (n=1) Ear, Nose, and Throat, 30% (n=3) dental, and 20% (n=2) intravenous antibiotic treatment. Figure 1 shows the findings in percentage distribution for procedures from the two groups.



% distribution for admission treatments/procedures

Figure 1

Previous hospitalization and recall of pain experiences. Six Chinese (60%) had previous experiences with hospitalization with the longest hospitalization at 10 days and the shortest at less than 12 hours. Four subjects (40%) had no previous hospitalization experiences. All the Chinese subjects (100%) were able to recall previous experiences with needle pokes; 100% (n=10) injections, 10% (n=1) bloodwork, and 10% (n=1) intravenous injection. The time lapse between the experience and recall ranged from 1 year to 3 years.

Age. The age of the 10 Chinese subjects ranged from 7 years 1 month to 12 years 4 months with a mean age of 9 years 6 months. Due to time constraints and limited subject accrual, two children under the age of 8 years were accepted into the study following evaluation by the investigator. These children spoke English as a second language and had learned the basic command of the English language from Kindergarten. Figures 2 shows the age frequency distribution for the Chinese group.

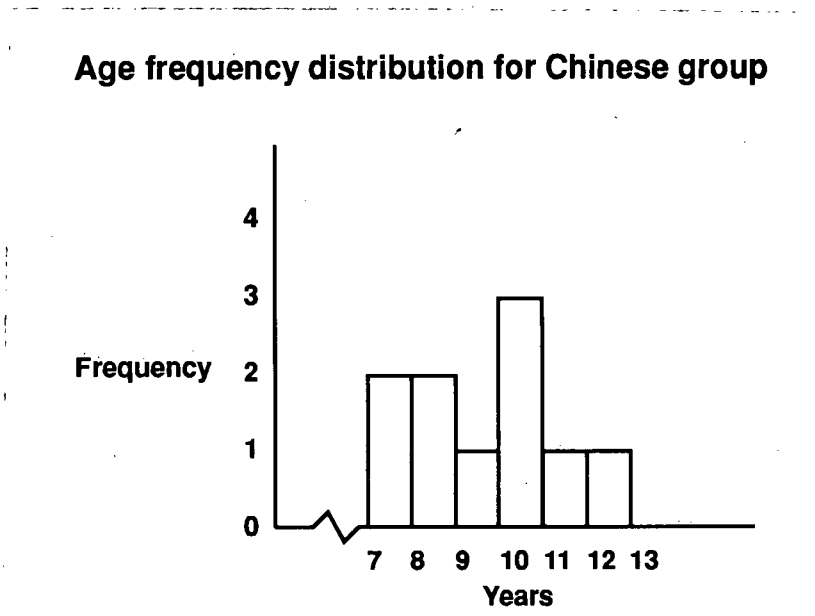


Figure 2

Educational level. The Grade level ranged from 1 to 7 with a mean Grade of 3.8. The number of educational years in Canada ranged from 1 to 5 years with a mean of 1.3 years.

Country of origin and years of residency in Canada. The initial selection criteria did not include Chinese children born in Canada and who speak Cantonese. However, due to limited subject accrual and time constraints, the investigator expanded the criteria to include those children who were born in Canada and were fluent in Cantonese.

The investigator's decision to expand the selection criteria can be supported. As discussed in Chapters One and Two, language is a carrier of a culture, thus affecting perception, cognition and the expression of experiences (Fabrega & Tyma, 1976). The reason for not including this group of children was because the investigator perceived that they were not representative of the larger Chinese children population in the city. However, the investigator discovered, Chinese children born locally who continue to speak Cantonese are more prevalent than the investigator had expected.

Four subjects were born in Canada but their parents were from Hong Kong, China, and Malaysia. The majority of subjects' (n=6) were landed immigrants from Hong Kong. The age of arrival for the immigrant subjects ranged from 3 to 9 years with mean of 5 years 8 months.

Of the 4 (40%) Chinese subjects who were born in Canada, 1 (25%) had parents who listed Malaysia as their country of origin, 1 (25%) had parents from Hong Kong and China, and 2 (50%) subjects' parents were from Hong Kong. All the 4 subjects in this group were fluent in Cantonese and continues to speak Cantonese

at home. In addition, the investigator noted that these 4 subjects had no linguistic accent when conversing in Cantonese. This suggests that although they were Canadian born, Cantonese was their first language.

Non-Chinese Canadian Group

Gender. In the non-Chinese group, the 12 ($n=12$) subjects consisted of 6 (50%) boys and 6 (50%) girls. The equal ratio between the boys and girls occurred by chance.

Hospital: unit/clinic. Sixty-seven percent ($n=8$) of the admissions were at the major tertiary centre and 33% ($n=4$) were at the affiliated pediatric centre in a community hospital. Table 1 provides a breakdown of the unit/clinic admissions in the respective hospitals.

Purpose of admission. The distribution of surgeries, procedures and treatments were; 17% ($n=2$) plastics, 25% ($n=3$) Ear, Nose, and Throat, ($n=3$), 8% ($n=1$) dental, 42% ($n=5$) urology, and 8% ($n=1$) orthopedics (see Figure 1).

Previous hospitalization and recall of pain experiences. Nine (75%) of the subjects had previous experiences with hospitalization and 3 (25%) subjects had no previous hospitalizations. The length of hospitalization ranged from 4 days to less than 12 hours. Twelve (100%) subjects recalled their experiences with injections, 2 subjects (17%) recalled experiences with bloodwork, and none of the subjects recalled experiences with intravenous insertion. The time lapse between the experience and the recall at the time of interview ranged from 1 to 5 years.

Age. The age of the 12 subjects ranged from 8 years 1 month to 12 years with a mean age of 9 years 9 months. Figure 3 shows the age frequency distribution of the non-Chinese group of children.

Age frequency distribution for Non-Chinese group

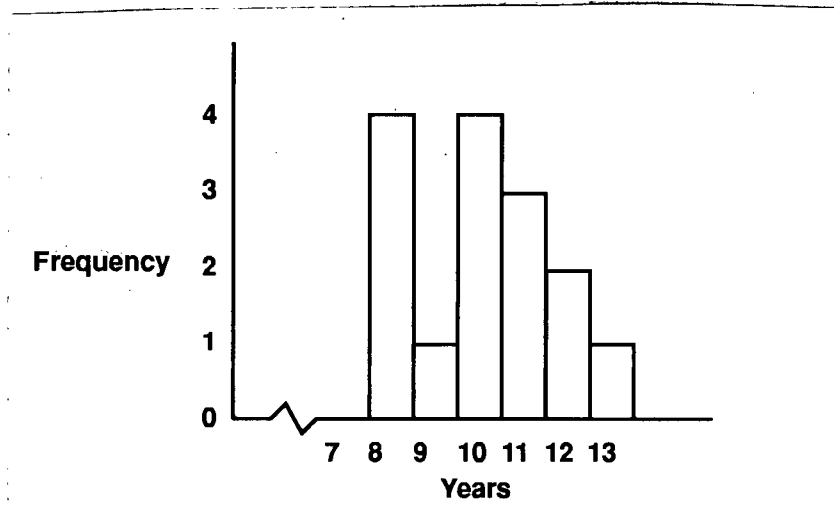


Figure 3

Educational level. The Grade level ranged from 2 to 6 with a mean Grade of 4.2.

Number of generation(s) in Canada. The number of generations the subjects' families have lived in Canada ranged from one generation, 8% (n=1), to greater than five generations, 8% (n=1). Seventeen percent (n=2) lived in Canada for 2 generations, 25% (n=3) for 3 generations, 17% (n=2) for 4 generations, and 8% (n=1) for five generations. Another 17% (n=2) subjects had a combination of two and three generations. England and Ireland ranked the highest in the countries of origin at 24%. Next was Scotland at 16%, Russia 12%, Eastern Europe, Germany, and the Scandinavian countries tied equally at 8%.

Discussion of Findings

Overall, both groups of children enrolled in this study met the criteria as set

forth except for three criteria. First, an expansion of the criteria in the Chinese-Canadian group to include the Canadian born Chinese children who continued to speak the Chinese language, allowed for subject accrual within a reasonable time frame. The mixed sample of children in the Chinese group is a recognized limitation as these findings may not be entirely reflective of the new Cantonese-Chinese immigrant population. However, this investigator does not believe that the inclusion of local born Chinese who continue to speak the language affected the results of the study. According to literature, people who speak the language of the culture are believed to carry the culture's values and beliefs, thus affecting perception, cognition, and the expression of experiences (Fabrega & Tyma, 1976).

Second, the criteria of admission for minor surgical procedures with operating time under one hour was later expanded to include operating time under two hours due to the limited subject accrual. The change in the criteria did not affect the findings as the children's length of hospitalization or prior experience were not any different from that of a one hour operation.

Lastly, children who had not experienced needle poke immediately prior to the interview but who were able to recall experiences with needle pokes were enrolled in the study. This increased subject availability and enabled subject accrual within three months. However, recall of pain experiences overtime may not be accurate and responses may change as maturational and situational factors can influence pain experiences (Meinhart & McCaffery, 1983). In this study, subjects recalled needle poke experiences rapidly and with ease.

Purpose of admission were relatively similar in both groups with the non-Chinese group having additional procedures related to urology and orthopedics. The

admission procedures/treatments did not vary greatly between the two groups that would have effected their pre-operation preparation.

Of importance in the findings from the demographic data is the average educational years, mean of 1.3 years, in the Chinese group. Though the children spoke and had written skills in English prior to coming to Canada, English as a second language may limit their verbal and written skills (Tesler, Savedra, Ward, Holzemer, & Wilkie, 1988). This limitation can affect their ability to fully comprehend the questionnaire and/or expression of feelings using the appropriate descriptive words. However, during the interview their limitation did not appear to be a concern as the Chinese children were able to complete the questionnaire with limited assistance. The investigator conducted the interview in English so as to prevent loss of word meaning through interpretation. However, following the completion of the interviews, the investigator was uncertain as to whether the children fully comprehended the questionnaire and were able to clearly express themselves, or were they to shy and/or afraid to ask questions?

Of interest, the gender variation in the two groups were minimal and no patterns were observed in the responses. Similarly, the age distribution of the two groups were relatively parallel with no evident patterns identified. The age mean difference between the two groups was three months. The only exception was in the Chinese group where two children under 8 years old were accepted into the study. These children were assessed for English language comprehension by the investigator and was deemed suitable prior to enrolment. The Grade level distribution was relatively similar, however the range within the Chinese group encompassed two additional Grade levels, 1 and 7.

Summary

In summary, the demographic data obtained has shown that the non-Chinese and Chinese groups of children met the selection criteria and completed the questionnaire in English with minimal assistance. The non-Chinese subjects averaged 2 to 3 generations in Canada and represented a cross-section of European countries. The Chinese subjects, all conversant in Cantonese consisted of immigrants with less than 5 years Canadian residency, and local born Chinese whose parents were immigrants. The next section will describe the findings from the questionnaire in the two groups.

PPQ Questionnaire

Question (1): Causes of Pain

Subjects were given three opportunities to list things that have made them feel pain. Responses were grouped into three predetermined categories to describe their pain experiences; physical external, physical internal, and psychological (Savendra, Gibbons, Tesler, Ward, & Wegner, 1982).

Chinese Group. Of the 30 potential responses from the 10 Chinese subjects, 25 responses described the causes of pain, two responses were "I don't know", and 2 subjects listed only two responses. One response was eliminated due to the lack of legibility and was not included in the tabulation. Fifty-six percent ($n=14$) of the responses were listed as physical external word categories while 12% ($n=3$) responses were listed as physical internal causes of pain. Thirty-two percent ($n=8$) of the responses were listed under the category of psychological/ miscellaneous. Figure 4 shows the findings in percentage distribution for the three categorized causes of pain from the two groups.

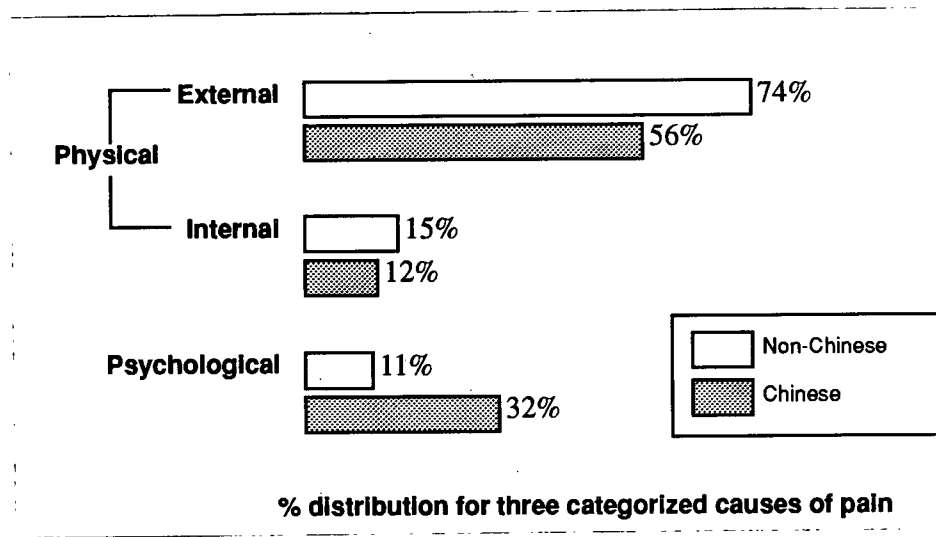


Figure 4

The physical external responses varied from stepping on a needle ($n=1$), falling ($n=2$), crashing or slamming into objects ($n=2$) to the most common of being hit ($n=4$). The physical internal responses included stomachs ($n=1$) and pain experiences related to surgery ($n=1$). The psychological causes were mostly related to feelings being hurt ($n=3$), feeling scared ($n=1$), and forgetting to give Father's day card ($n=1$).

Further analysis of the boys and girls' responses in the Chinese group showed that 12 (67%) of the boys' responses were categorized under physical external causes compared to 2 (17%) in the girls' responses. In the psychological/miscellaneous category, 6 (50%) responses were the girls' compared to 2 (11%) responses in the boys. The responses between the boys and girls in the physical internal category showed only a difference of 1 response; the boys listed 2 responses and the girls listed only 1. In the boy's responses, 2 (17%) were "I don't know" and 1 (8%) no response. In the girl's responses, 1 (8%) was not legible and another (8%) gave no response.

Non-Chinese Group. Of the 36 potential answers in the non-Chinese group of 12 subjects, 34 responses described the causes of pain and two subjects listed only two responses. Seventy-four percent ($n=25$) of the responses were identified as physical external word categories to describe their causes of pain while only 15% ($n=5$) were physical internal word categories. In the category of psychological/miscellaneous category only 11% ($n=4$) responses were identified.

The physical external responses varied from experiencing an injection ($n=9$), falls ($n=7$), and being hit ($n=1$). The physical internal responses ranged from ear infections ($n=2$) to feeling sick ($n=1$). The psychological causes were related to looking at the surgery room and equipment ($n=1$) and feeling troubled ($n=1$).

The trend of boys and girls' responses were the reverse in two categories compared to the Chinese group: Fourteen of the girl's responses were categorized as physical external while 11 responses were from the boys. Under the category of physical internal, 4 words were listed by girls compared to 1 listed by the boys. The greatest difference within this group was in the psychological/miscellaneous category where no girls selected responses under this category and four responses came from the boys.

Discussion of findings. Overall, the Chinese group listed more psychological/miscellaneous word descriptions than the non-Chinese group. Such findings are similar to those found in Abu-Saad's (1984a) study where the researcher reported greater numbers of Asian-American who listed psychological causes of pain. These causes included "people talking bad about me" and "people making fun of me."

In examining further the gender and cultural breakdown, there were differences in the pattern of responses between the girls and boys of both cultural

groups. A higher percentage of boys in the Chinese group selected physical external causes of pain while more girls listed psychological causes of pain. Abu-Saad (1984b) found similar patterns in the study of Asian-American children. These findings reflect the cultural expectation that girls are more emotional, sensitive, and that expression of feelings are more acceptable in girls than boys (Abu-Saad, 1984b).

The non-Chinese group responses were in contrast compared to the Chinese group. More girls selected physical external causes of pain while more boys selected psychological causes of pain. This investigator believes that these findings are viewed as trends and not a reflection of Canadian cultural expectations.

In summary, the listing of causes of pain in both groups of children did not differ greatly. However, the trend was for the non-Chinese children to list physical external causes more frequently while the Chinese listed more psychological causes.

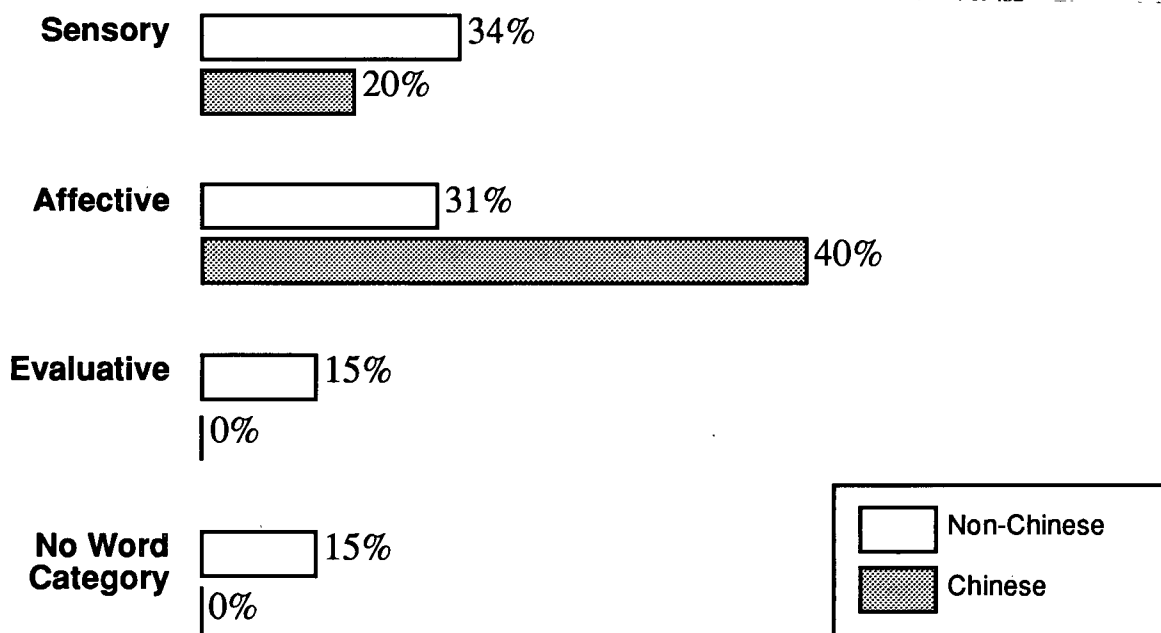
Question (2): Worst Pain and Related Feelings

In this question, subjects were asked to recall their worst pain experiences, describe their feelings related to the worst pain, and their words to describe the pain. In both the Chinese and non-Chinese groups, descriptions of the worst pain experiences often matched one of the responses in Question 1. The responses related to 'feelings' and word description of the pain were grouped into one of the four predetermined categories; sensory, affective, evaluative or no word.

Chinese Group. Ten responses described 'feelings related to the worst pain.' Eighty percent (n=8) responses were listed under the affective category. In this affective category, responses included feelings of sadness, feelings related to wanting to cry, feeling scared and wanting to react physically to the cause of pain but knowing that it would be ineffective. In the sensory category, 20% (n=2) responses described

described the physical pressure from the procedure and descriptions of feelings related to a needle poke. No responses were listed under the evaluative category or the 'no word' category in this Chinese group.

Eleven responses related to word description of pain were found in this Chinese group (one child provided two responses). The responses varied from "hurt", "painful", "ouch" to informing the teacher. 9% (n=1) responses were identified as evaluative, 9% (n=1) as affective, and 46% (n=5) as sensory word categories. Thirty-six percent (n=4) responses fell under the 'no word category'. Figure 5 shows the percentage distribution for categorized feelings related to the worst pain experience from the two groups of children.



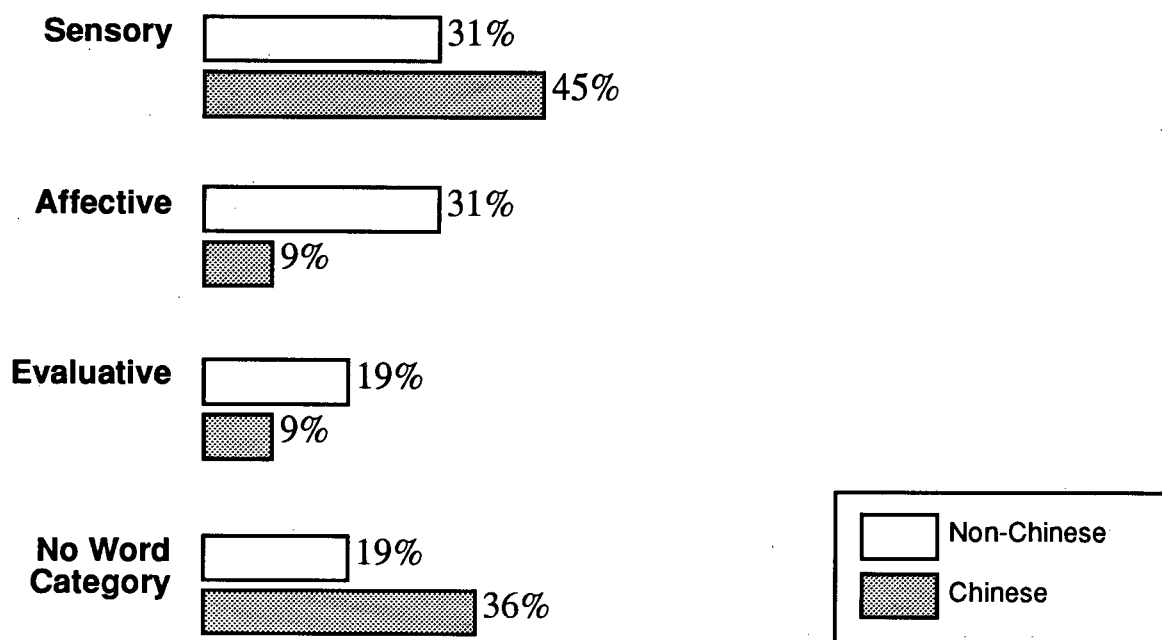
% distribution for categorized feelings related to worst pain experience

Figure 5

Non-Chinese Group. Thirteen responses were found in the non-Chinese children describing their feelings related to their worst pain experience. Thirty-one

percent (n=4) responses listed feelings under the affective category and types of responses in this category were similar to that of the Chinese group. Fifteen percent (n=2) responses fell under the evaluative category and these responses included feeling "unbearable" and "like a sharp pain." Thirty-nine (n=5) responses were identified in the sensory category. Finally, 15% (n=2) responses were listed under the 'no word category'.

Sixteen responses related to the word descriptors of pain were found in the non-Chinese group. Nineteen percent (n=3) responses were evaluative, 31% (n=5) affective, and 31% (n=5) responses were categorized as sensory words. The responses ranged from "horrible", "killed", to feeling "nervous". Nineteen percent (n=3) responses belonged to the 'no word category'. Figure 6 shows the percentage distribution for the categorized word descriptors related to the worst pain experience from the two groups.



% distribution for categorized word descriptors related to worst pain experience

Figure 6

Discussion of findings. In relation to 'feelings' associated with the worst pain experience, the highest number of responses in the Chinese group were found in the affective category. In comparison, the non-Chinese group listed the highest number of responses in the sensory category. In the Chinese group, the responses found in the sensory category in relation to 'feelings' were from girls while all the boys' responses were affective words. Such findings are in contrast to Abu-Saad's (1984b) study where girls described their feelings more frequently in the evaluative category than did boys. This investigator believes that perhaps the findings in this study may not be associated with gender but the respondents' familiarity with the English language as they were Canadian born Chinese children.

In the word descriptors, the trend was the reverse with the Chinese group listing more sensory word in comparison to the non-Chinese group who listed sensory and affective equally. The responses related to 'feelings' and word descriptors within the two groups of children, showed both groups consistently listed high in the sensory category. Minimal to no response in the evaluative category were found in the Chinese group. Such findings reflect the Chinese cultural expectation to control any overt behavioral expressions of pain (Abu-Saad, 1984b), and perhaps evaluative description of pain experiences may be viewed as blatant expressions of pain.

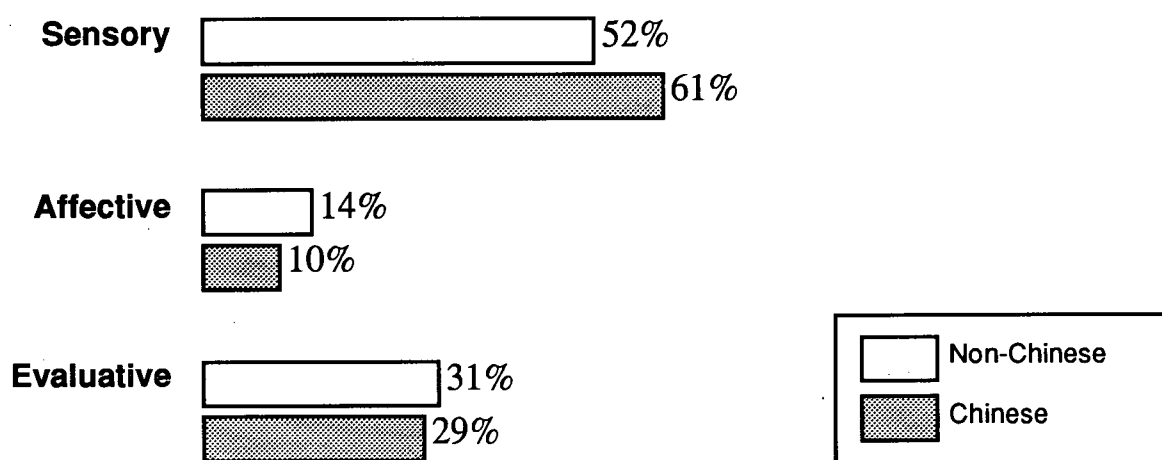
Overall, the Chinese children used sensory and affective words to describe their pain and feelings. Such findings are consistent with Abu-Saad's (1984a) findings where Asian-American children used more affective words than did the Arab- and Latin-American children.

In summary, the patterns of responses varied, with the Chinese group listing affective and sensory words. Within the non-Chinese children, sensory words

consistently ranked equal or higher compared to the other two word categories. Almost all the respondents were able to describe their feelings and pain words. Several children were unable to respond and/or had difficulty responding to the question, and sought further explanation from the investigator. In response the investigator reread the question and several subjects attempted to respond while others moved on to the next question. Beyond translation of the questions into Cantonese, the investigator did not expand or further explained the question. This prevented inconsistent responses by the investigator, thus avoiding response bias.

Question 3: Word Descriptors

A list of 24 words was presented and subjects were asked "to circle the words that describe pain." The words were grouped into one of three predetermined categories; sensory, affective, and evaluative. Figure 7 illustrates the summarized responses of the two groups of children. The responses have been categorized into the predetermined sensory, affective, and evaluative groups.



% distribution for categorized words to describe pain

Figure 7

Chinese Group. In the Chinese group, the highest number of words selected by one child was 18 and the lowest was 3 words ($n=2$). Eighty-two words were selected in total. Within this group, 29% ($n=2$) were evaluative word categories, 61% ($n=5$) were sensory, and 10% ($n=8$) were affective. Words such as 'like a sting' was most often selected ($n=7$) while "tingling", "cruel", and "tugging" were the least often selected ($n=1$). "Cold" was a word not selected in the Chinese group.

In responding to "are there any words you would use to describe pain?", only 3 subjects responded in the Chinese group. One response was categorized in the affective category as the subject was describing feelings and another response, "owie", belonged to the evaluative category. The third subject used five words belonging to the sensory category: The responses were "falling", "crashing", "hitting", "smashing", and "hurt".

Non-Chinese Group. In this group, the highest number of words selected by one child was 13 and the lowest at 2 words. The total number of words selected was 71. Thirty-one percent ($n=24$) of the words selected were categorized as evaluative words, 52% ($n=37$) as sensory, and 14% ($n=10$) as affective. In this group, the word "horrible" was most often selected ($n=7$) while "cold", "pulling", and "tugging" was not selected at all.

Five subjects responded to "are there other words ... to describe pain?" The words used were categorized as sensory words, such as "tearing" and "ripping", and affective words such as "bad" and "mad". "Owie" and "ouch" were categorized as evaluative.

Discussion of findings. In conclusion, all the children appeared to have understood the meaning of the words except for one. One Chinese subject did not

understand the word "miserable" and the investigator translated the word into Chinese. Many of the children reviewed the word list prior to circling the answers and carefully selected their words. This suggests that this task was meaningful for them as was found in Savedra et al (1981) study where children concentrated seriously when selecting from the word list. Several children were able to provide additional pain word descriptors.

Similar to the findings in Question 2 related to word descriptors, the Chinese group listed greater sensory words over the other two categories. Within the non-Chinese group, the sensory words also were chosen in greater numbers. However, in this question minimal differences were found between groups in their selection of all three word categories. This investigator believes that the influences of culture become less prevailing, when children select from a word list as they are no longer required to make judgement or to evaluate their feelings in responding to the question. Finally, no patterns were identified in relation to gender and age.

Question (4): Colour of Pain

Subjects were asked to indicate the colour of pain and Table 2 shows the distribution of the colour selected by the Chinese and non-Chinese group.

Chinese Group. In the Chinese group, 60% (n=6) responded using red as the colour of pain. Other colours identified were 10% (n=1) yellow, 10% (n=1) brown, 10% (n=1) "no colour" while another 10% (n=1) indicated "I don't know".

Non-Chinese Group. In the non-Chinese group, 62% (n=8) children described pain using the colour red. Additional colours identified were 10% (n=1) in each of the colour black, dark blue, and grey. Two subjects indicated "I don't know".

Table 2

Frequency and percentage distribution for colour of pain

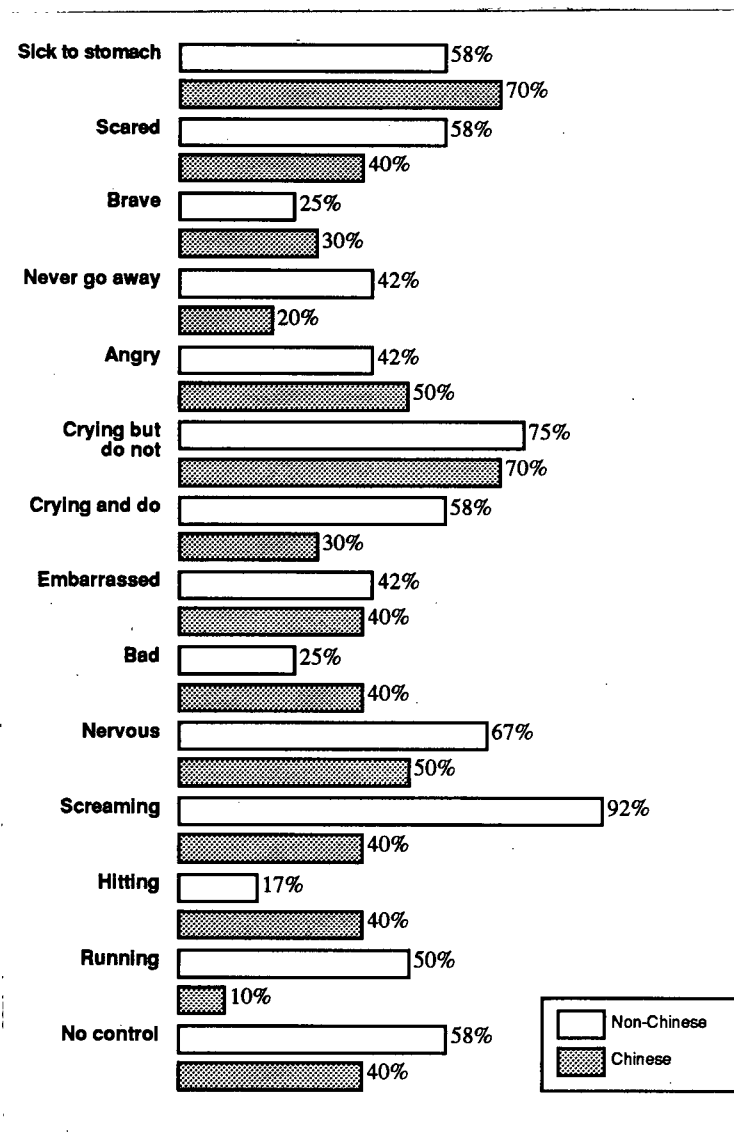
Colour	Chinese Canadian (n=10)		Non-Chinese Canadian (n=12)	
	n	%	n	%
Red	6	60%	7	58%
Black	-	-	1	8%
Dark Blue	-	-	1	8%
Grey	-	-	1	8%
Yellow	1	10%	-	-
Brown	1	10%	-	-
No colour	1	10%	-	-
"I don't know"	1	10%	2	18%
Total	10	100%	12	100%

Discussion of findings. Generally, all the children except for two, were able to identify a colour related to pain. Many children appeared confused and sought further explanation from the investigator. However, the investigator reread the question and asked them to take their time in responding to this question. Majority of the children in both groups chose red to describe pain. The non-Chinese children listed other colours such as black, blue and grey. However, in the Chinese group, these colours were not listed instead, yellow and brown was chosen. However, in Abu-Saad's (1984a) study of the Asian-, Arab-, and Latin-American children, the most frequently selected colours were red, blue and black. Further development and exploration of the choice of colours and their cultural significance could yield data which may affect the use of colour tools to assess pain levels in children. For the "I don't know" responses, there was no relationship between the ages of the children

and them not knowing the colour of pain.

Question 5: Feelings When In Pain

Figure 8 shows the 'yes' findings from the two groups when subjects were asked to circle 'yes' or 'no' to 14 responses related to feelings when experiencing pain.



% distribution for the "Yes" responses related to the feelings about pain

Figure 8

Chinese Group. In the Chinese group, the most frequently listed 'yes' responses were found in feelings related to 'I feel sick to my stomach' and 'I feel like crying and I don't cry'. Both feelings were equally chosen at 70% (n=7). Ten percent (n=1) circled 'yes' to 'running away' and 20% (n=2) to 'it will never go away' were the least frequently selected 'yes' responses. The frequency variation of the remaining 'yes' responses averaged between three to five responses.

Non-Chinese Group. In the non-Chinese group, the most frequently listed 'yes' response was 'I feel like screaming' at 92% (n=11). The least response at 17% (n=2)) was found in the responses related to 'I feel like hitting someone'. The frequency of the remaining responses varied greatly from 3 to 9 responses.

Discussion of findings. Overall, there were differences between the two groups. The least difference between the groups was related to 'I feel like crying, but I don't cry'. The greatest difference was found in the responses related to 'I feel like screaming' where 92% responded 'yes' in the non-Chinese group compared to 40% in the Chinese group. Again, these few responses in the Chinese group maybe a reflection of the cultural expectations to control overt behavioural expression (Abu-Saad, 1984b)

Other differences found included greater numbers of non-Chinese subjects responding to '... it will never go-away' compared to the Chinese group. In addition, greater numbers of non-Chinese responded to 'I feel like running away' compared to the Chinese group. In the response to 'hitting someone or something', more Chinese subjects responded 'yes' compared to the non-Chinese group. This finding is not consonant to the cultural expectation of controlling one's overt expressions. The

number of responses were small and such findings may be due to individual characteristics. A study with a larger sample size could provide further data on the trend of responses.

In conclusion, the findings in several responses were inconsistent with Abu-Saad's (1984a) findings in the Asian-American children. In Abu-Saad's (1984a) study, no responses were identified in the feelings related to feeling 'sick to the stomach' and 'like crying and I don't'. However, in this study, responses in both these feelings were evident within groups and between groups.

In summary, several subjects found this question difficult to answer as they had to choose between a 'yes' or 'no' response when they only 'sometimes' felt the feelings as expressed by the some of the children. Overall, the choice of responses in the Chinese children did not vary greatly while there were greater fluctuations in the non-Chinese group. Between the two groups, there were great differences in their responses related to 'screaming', 'hitting', and 'running away'.

Question 6: Coping with Pain

The coping strategies used by the Chinese and non-Chinese children were diverse with some notable differences between the cultural groups. Table 3 shows the findings from the two groups of children in the way they cope with pain.

Chinese Group. In the Chinese group, the most frequently listed strategy was the presence of others (n=6). Within this coping strategy, the presence of others included friends, parent(s)/sibling, and animal(s). When the investigator explored further the responses related to the presence of others, the children did not allude to the reasons why presence of others were helpful. Distraction (n=2) was another coping strategy listed in addition to medicine (n=1) and acknowledgement of pain by

others (n=1).

Table 3

Responses to 'What helps you feel better when you have pain'

Responses	Frequency	
	Chinese (n=10)	non-Chinese (n=12)
Presence of others:		
friends	1	-
parent(s)/sibling	3	1
animal(s)	2	-
Acknowledgement of pain by others	1	-
Medicine	1	3
Distraction	2	2
Knowing that others may feel pain	-	1
Food	-	1
Affection/Attention	-	1
Knowing that pain will go away	-	1
"Nothing"	-	2
Total	10	12

Non-Chinese Group. In the non-Chinese group, medicine (n=3) was the most frequently selected coping strategy. As well, distraction (n=2) was listed as a coping strategy. The presence of a parent (n=1), food (n=1), affections/attention (n=1),

knowing that others may feel pain too ($n=1$) and that pain will go away ($n=1$) also were identified as coping strategies. Responses such as "getting a hug" and "someone squeezing my hand" were identified by this investigator as affections/attention. Finally, two subjects indicated that nothing would help them cope with the pain.

Discussion of findings. The coping strategies identified were similar to those found by Savedra et al (1982) and Abu-Saad (1984a). Generally, the coping strategies listed varied in both groups of children. In the Chinese group greater number of children selected the presence of others as a coping strategy. Such findings are in keeping with the cultural expectation of providing attention and the continued presence of a caring person during ill periods (Abu-Saad, 1984b, Vancouver Health Department, 1979).

In the non-Chinese children, medicine was the most frequently listed strategy to help them cope with pain. Both groups equally chose distraction as a coping strategy ($n=2$). Again, this may be a reflection of the coping strategy within the culture where family is the central support mechanism.

In conclusion, all the children, except two, were able to identify coping strategies. The strategies varied with the Chinese children choosing the presence of others as the more common coping strategy while the non-Chinese chose medicine. No patterns were identified between responses and age and gender.

Question 7: What is Good About Pain?

Only several of the subjects provided answers related to what is good about pain.

Chinese Group. Only two responses were found in the Chinese group. The two responses were "you get to miss school" and "be careful". The age of these two

respondents were respectively 11 years 7 months and 8 years 6 months. Six subjects indicated "nothing" and two subjects said "I don't know".

Non-Chinese Group. In the non-Chinese group, three responses were that it "goes away" (n=2) and "you feel better than normal after it's over, sometimes it's good for you" (n=1). The ages of the these respondents were 10 years 5 months, 8 years 8 months, and 11 years, 10 months. Other responses included "nothing" (n=7) and "I don't know" (n=2).

Discussion of findings. The findings from this question were not significant between the two groups. However, in relation to age, all the children who responded with a specific description were 8 years and older and this was a reflection of their stage of cognitive development. Children between the ages 8 to 12 years are functioning at the concrete operational stage where they can analyze experiences and make judgements about their experiences (Bandura, 1977; Piaget & Inhelder, 1969). The relationship of gender and the responses were insignificant as they varied and no patterns were identified.

In conclusion, there were no variations between the two groups and no relationship between the gender and those children who responded to the question. However, older children responded more frequently while no 7 year olds responded to this question. Overall, most children were unsure of the question and many indicated that nothing is good about pain. The investigator questions the nature and the purpose of this question. Perhaps further investigation with a larger sample size or with older children will yield a more comprehensive set of data.

Summary

In summary, all the subjects responded to the questionnaire with minimal

difficulties. The older the subjects the easier and the faster they completed the questionnaire, regardless of the number of educational years in Canada in the Chinese group. The investigator expected that subjects from the Chinese group who were recent immigrants to have some difficulty with the questionnaire. The limited number of educational years in Canada in the Chinese-Canadian group could have limited the children's ability to fully comprehend and answer the questionnaire. However, this was not evident during the interview as all Chinese subjects completed the questionnaire with minimal assistance except in one instance. The investigator translated to Cantonese a word describing pain as the 7 year old subject did not understand the word. Once translated, the subject understood the meaning of the word and proceeded to answer the question. Nevertheless, this investigator was unclear whether the Chinese children truly comprehended the questionnaire or were they reluctant to question the investigator?

In the following chapter, the investigator will present a summary of the research process leading up to the study conclusions. In addition, the implications of this study findings for nursing practice and education, and recommendations for future research will be discussed.

CHAPTER FIVE

Summary, Conclusions, Implications, and Recommendations

Summary

Reliable nursing assessment is an integral aspect in treatment and management of pain. This is especially difficult in the pediatric population where multiple factors can influence assessment outcome. Though pain measurement and assessment tools have taken into consideration factors such as cognitive developmental stage, and chronicity and/or acuity of pain, or associated disease processes, researchers have yet to develop culturally sensitive tools.

Identifying patterns of pain perception and expression enable further development of culturally sensitive tools in assessing pain. Many studies have explored cultural differences in the perception and expression of pain in adults. However, there are insufficient studies conducted within the same cultural group to substantiate the findings, therefore expansion and application of this knowledge is limited. Nurses caring for patients of various ethnic origins are increasing as the ethnic composition of the Canadian society becomes increasingly multicultural. According to the 1993 BC Stats, the majority of immigrants are Asian with the predominant immigrants from Hong Kong. Therefore, the purpose of this study was to examine and describe the ways Chinese and non-Chinese Canadian children aged 7-12 years describe pain using a Pediatric Pain Questionnaire (PPQ) developed by Savedra, Gibbons, Tesler, Ward, and Wegner (1982).

Pain is a complex phenomenon that incorporates the sensory-discriminative, affective-motivational, and cognitive-evaluative systems in the neurophysiological processes in response to noxious stimuli. Culture is believed to influence the

cognitive-evaluative system that affects the overt behavioural pain responses.

However, there are yet no clear explanations how culture influences the cognitive-evaluative system. Studies based on theories of cultural transmission and language as carrier of a culture provide another perspective, on how cognitive and emotional development within a culture influence the perception and expression of pain behaviours. Based on these premises, the investigator used the concept of pain, culture and language to form the basis of the conceptual framework to guide this research.

Using a descriptive design, the investigator obtained demographic and questionnaire data in a semistructured interview using the PPQ, resequenced by this investigator to avoid response bias. The PPQ is a self-report developed from several studies in examining children's pain perception and expression by asking questions related to: (1) causes of pain, (2) word descriptors of pain, (3) colour of pain, (4) feelings when in pain, (5) worst pain and related feelings, (6) coping with pain, and (7) what is good about pain? The data were analyzed using descriptive summary statistics and content analysis. In questions (1) through (5), responses were grouped into predetermined categories while characteristic of the responses from questions (6) and (7) were examined. Twenty-two subjects admitted to two affiliated pediatric centres for day care surgical procedures and/or intravenous antibiotic treatment participated in this study.

Analysis of the study results indicated that the patterns of responses varied with each question within and between the two groups of children. The listing of causes of pain in the Chinese and non-Chinese children did not differ greatly. When asked to describe their feelings related to their worst pain experiences, the Chinese

children listed words identified as the affective category while the non-Chinese children listed more words from the sensory category. However, when asked to describe the pain experience, within this same question, more Chinese children listed sensory word category while non-Chinese equally selected sensory and affective categories. The same trend was found in the Chinese children when they were asked to circle words from a list to describe pain. Chinese children selected more words from the sensory category. Both Chinese and non-Chinese children equally selected red as the colour of pain. When asked to respond 'yes' or 'no' to questions related to pain feelings, the range of the overall responses did not vary widely. However, the greatest difference was that the Chinese were less likely to select phrases that demonstrated overt responses such as 'screaming' or 'running away' compared to the non-Chinese group. More non-Chinese children selected "medicine" as a way to help them cope with pain while the Chinese identified the presence of others as a coping strategy. Finally, when asked 'what is good about pain', no significant findings were found between the two groups.

The discussion of this study findings primarily focused on the types of patterns and variations identified. In addition, the investigator made inferences about any contributing factors to varying characteristics either within and/or between the two cultural groups.

In summary, Chinese and non-Chinese school-aged children have different patterns of describing pain, and several similarities and differences in the findings compared to other studies were identified. However, statistically significant findings in this study were minimal and may have occurred by chance. Nonetheless, the three patterns of responses observed in this study were as follows: (1) in pain description,

the Chinese children listed greater number of words from the sensory category while the non-Chinese children selected this word category less frequently; (2) the Chinese children selected less overt expressions in expressing pain, and; (3) the Chinese children demonstrated more approval seeking behaviours compared to the non-Chinese children.

A statistically significant pattern observed was within the group of Chinese children. They consistently listed greater number of words categorized as sensory compared to the non-Chinese children when asked to describe pain, whether in their own words or circling word descriptors. Overall between groups, the Chinese children used less words categorized as affective compared to the non-Chinese when asked for pain word descriptors. However, within the Chinese group when asked in question (2) about their feelings related to the worst pain experience followed by what words would describe the pain experience, the words used to express the pain feelings showed no relationship to the word descriptor. An explanation may be that what they feel privately may be acceptable but that the expression of their feelings were less permissible. Therefore listing words to describe pain intensity or its sensation would be more appropriate. In this study, words describing pain intensity and sensation are categorized as evaluative and sensory words. Withholding sharing of one's feelings with strangers may be a reflection of the cultural expectation, therefore may be perceived as not experiencing pain or being 'stoic' when reacting to pain.

Second, an identified pattern of response is related to the Chinese group selecting less overt expressions of feelings. Such a pattern was found in responses related to question (5) where children were asked to circle 'yes' or 'no' answers

related to feelings when in pain. Generally, the 'yes' responses from all the questions averaged 50% or lower in the Chinese group compared to the varying percentages within the non-Chinese group with few exceptions. The one exception was in the response related to expressing one's emotions, 'I feel like crying but I don't'; the percentage of responses to this question from both groups were high and close in range. However, there were far fewer responses found in 'I feel like crying and I do' in the Chinese group compared to the non-Chinese. The investigator assumes expressing feelings with negative observable behaviour such as 'crying', 'screaming', and 'running away' are not tolerated and would not be accepted. Unacceptable demonstration of negative observable behaviours in the Chinese community also have been identified in literature (Lai & Yue, 1990; Meinhart & McCaffery, 1983).

Another pattern where expression of affective emotions was less prominent was found in their responses related to coping with pain, question (6). The non-Chinese children listed affections and attention such as 'hugging' and 'love' as several of the helping strategies to cope with pain. On the other hand, the Chinese children expressed that the physical presence of family members helped them cope with pain. It is unclear whether the Chinese children's lack of vocabulary or the reserved expression of affection influenced the manner of their expressions. However, given the pattern of responses throughout this study and the children's ability to answer the questionnaire, the Chinese children's response pattern in this question may be the result of the culture's influence where expression of affection and emotion is not encouraged (Lai & Yue, 1990; Vancouver Health Department, 1979). As postulated by Melzack (1973), cultural values influence the manner in which people describe pain. As well, basic perceptual processes are influenced by cultural differences

(Weisenberg, 1982).

Finally, a finding unrelated to the questionnaire was found in the manner in which the two groups of children responded to questions. The non-Chinese subjects responded to the questions with minimal approval-seeking behaviours, i.e., turning to the investigator and sharing the answer in a question form as if checking to see whether the answer is appropriate. In the Chinese group, approval-seeking behaviours were observed throughout when the subjects were answering the questions. Such behaviours may be the subject's need to answer appropriately and to seek the investigator's approval. These behaviours reflect the cultural expectation of high standards in behaviour and school performance (Lai & Yue, 1990; Vancouver Health Department, 1979). Though answering the questionnaire was not related to school work, perhaps these children perceived answering the questions to be a test and therefore must perform in an acceptable manner.

Another unrelated finding to the research question was an observed behavioural pattern during the children's involvement prior to the start of the interview. In the non-Chinese children, parents often sought out the child's wish to participate or not to participate in the study. In the non-Chinese children, the parents made the decision and 'encouraged' the child to participate. The parents encouragement included "you will help this lady" or "this will be interesting for you to do". This investigator believes that this pattern again reflects the culture's values and beliefs where the elders are respected and where decisions are made by them (Lai & Yue, 1990).

This study has allowed the investigator to identify several patterns of responses within and between the Chinese and non-Chinese group of children but such findings

must further be tested to be conclusive. The effects of other factors such as familiarity with the English language, hospitalization, age on the types of responses, and the effects of time on the pain experienced is not entirely known. Given another opportunity to conduct the study with no limitations, this investigator will change and/or modify the following:

- 1) Increase the sample size to 200 (100 in each group);
- 2) Only include Chinese children as originally identified in the selection criteria; Chinese children who speaks Chinese (Cantonese dialect), attends English school, and have lived in Canada more than one year but no more than five years;
- 3) Include three additional pediatric units from the community hospitals;
- 4) Only include children who have recently experienced procedural pain;
- 5) Only include children who are between the ages of 8 to 12 years;
- 6) Include the category of 'sometimes' in question 5 (feelings when in pain) of the PPQ;
- 7) Develop standardized questions to further explore feelings related to question 4 (colour of pain), question 6 (coping with pain), and question 7 (what is good about pain) and;
- 8) Conduct the interview in a less stressful time for the children for example, following procedures and closer to the time of discharge or following discharge.

Increasing the sample size and including additional study sites may yield data more representative of the cultural group. As well, imposing better control over the study, such as only enrolling subjects who meet the original criteria and relating to

specific pain experience, enables replication of the study. From these findings, several conclusions can be drawn.

Conclusions

All school-aged children participating in this study were able to recall, describe, and express their perceptions related to needle poke procedural pain when questioned using the PPQ. The children also were able to respond to the questions independently and with minimal or with no assistance. In addition, several children were able to appropriately list additional word descriptors for pain. Importantly, all but two children were able to express what helped them feel better when they were in pain. The PPQ was effective in examining pain perceptions and expressions from 8 to 12 year old children. However, the utility of the tool was less effective in the 7 year old as they lacked the cognitive skills to complete the questions meaningfully.

Overall the Chinese children were less expressive with their feelings, therefore may be perceived as not experiencing pain and/or as much pain, or being 'stoic' when reacting to pain. Expression of feelings especially observable behaviours such as crying and screaming, are not as readily accepted and tolerated in the Chinese culture (Lai, Yue, 1990; Meinhart and McCaffery, 1983; Vancouver Health Department, 1979). In addition, the involvement of the family remains central in a child's life but more so in the Chinese culture (Lai & Yue, 1990), as reflected in their identification of coping strategies and in making decisions related to participation in the study.

The investigator hopes that the findings from this study will contribute further to the knowledge of cultural variations by identifying pain response patterns in the Chinese group of children. The information gathered in this study, though not

entirely representative of the Chinese children, has implications for nursing practice, nursing education, and nursing research.

Implications for Nursing Practice

This study findings have several implications for nursing practice. Children's ability to communicate about pain verbally or non-verbally is important to enable adequate and appropriate pain management. Many factors influence such abilities, one of which is the cultural ethnic identity. Therefore, nurses' awareness of cultural variations can enhance pain assessment strategies, thus leading to a more therapeutic pain management.

Although, children manage and cope with pain differently the aim of nursing is to assess and manage children's pain effectively. Incorporating assessment of cultural beliefs and practices into the nursing assessment will help facilitate a culturally sensitive care plan. Such care plans will delineate appropriate interventions sensitive to the clients' cultural beliefs and practices, and ultimately lead to more effective outcomes. For example, Chinese children who prefer the presence of their family members over medicine as a strategy in coping with pain do not mean they are not experiencing pain. In addition, recognizing the children's preferred coping strategies and abilities to express what helps them feel better allows them to participate in their pain management. Such actions demonstrate nurse's sensitivity to the children's needs and provides the children with a sense of control. Importantly, nurses need to recognize the children as individuals within their own cultural context and not from their own beliefs and expectations, to enable culturally sensitive care.

Implications for Nursing Education

To promote a holistic approach in caring for children, it is essential for

practising nurses and nursing students to develop an understanding of how culture contributes to the children's perception and expression of pain. Pediatric nursing curriculum from generic to post-RN levels should be encouraged to include content related to pediatric patterns of pain perceptions and expressions in cultural groups dominant in the community. Such information helps increase sensitivity to and broaden the knowledge of delivering pediatric care across culture.

Recommendations for Further Research

Continued cross-cultural studies using the PPQ are required to determine the validity and reliability of the tool within this population, and to gain further insight into cultural differences in children's perception and expression of pain. This study has attempted to gain insight into children's pain perception and expression within cultural groups by identifying common cultural variables within one cultural group. However, much more research will be needed to validate the findings and continued studies in similar populations would provide further data to expand this knowledge.

Would interviewing the children following recent or immediate procedural pain yield similar findings? Or would interviewing children about general pain experiences yield different findings in the Chinese and non-Chinese groups? Would studies using the PPQ with a larger sample yield similar or different data from those found in this study? Would interviewing the Chinese children in Chinese yield more revealing results? Would studies with the first generation Chinese and new immigrants yield similar patterns of responses? Findings from further similar studies can help nurses to recognize and respond adequately to the many ways pain experiences are perceived and expressed, thus enabling culturally sensitive pediatric pain assessment and management. However, careful consideration must be given

when applying cross-cultural research into practice so as not to stereotypify cultural groups. Cross-cultural studies challenges assumptions (Dr. K. Nujent, personal communication, June 1, 1995). Therefore, nurses must identify the relevancy of the research findings to their clinical practice and to utilize the findings as considerations in their practice with ethnic cultural groups.

In summary, determining which factors such as the cognitive-evaluative system in the neurophysiological process, culture, or language influence the perception and expression of pain is difficult as pain experiences are subjective. This study of pain perception and expression of Chinese and non-Chinese Canadian 7 to 12 year old children has attempted to identify patterns of responses associated with cultural and language influences. The findings showed similarities and differences in the pattern of responses to a set questions which resulted in several implications and recommendation for practice, education, and research. Findings from this study have shown sufficient data that Chinese and non-Chinese children perceive and express pain differently through their pain description. Continued research will contribute to the data bank on cultural differences in pediatric pain perception and expression, subsequently providing new insights into culturally sensitive pain assessment and management.

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Appendix A

PEDIATRIC PAIN QUESTIONNAIRE (original form)

(Developed by M. Savedra, P. Gibbons, M Tesler, J. Ward, and C. Wegner, 1982)

Please answer the following questions: If you don't know the answer, write I don't know.

1. List 3 things that have happened to you that have made you feel pain.

1)

2)

3)

2. Circle the words that describe pain.

like a sharp knife	tingling	cutting	like a sting
sore	like an aching	uncomfortable	biting
cold	pounding	shooting	hot
cruel	sad	pulling	itching
tugging	like a pinch	horrible	like a hurt
sickening	miserable	tiring	unbearable

Are there any other words you would use to describe pain?

3. What colour is pain?

4. Circle the answer: Most often when I have pain

I feel sick to my stomach	YES	NO
I feel scared	YES	NO
I feel brave	YES	NO
I feel it will never go away	YES	NO
I feel angry	YES	NO
I feel like crying, but I don't cry	YES	NO
I feel like crying, and I do cry	YES	NO
I feel embarrassed	YES	NO
I feel like I have been bad	YES	NO
I feel nervous	YES	NO
I feel like screaming	YES	NO
I feel like hitting someone or something	YES	NO
I feel like running away	YES	NO
I feel like I have no control	YES	NO

5. Remember the worst pain you ever had.

1) What was it?

2) Tell me how you felt.

3) What word(s) would describe it?

6. What helps you feel better when you have pain?

Tell me more about other ways your family help you feel better when you have pain?

7. What is good about pain?

Appendix C

PEDIATRIC PAIN QUESTIONNAIRE (resequenced form)

(Developed by M. Savedra, P. Gibbons, M Tesler, J. Ward, and C. Wegner, 1982)

Please answer the following questions: If you don't know the answer, write I don't know.

1. List 3 things that have happened to you that have made you feel pain.

1)

2)

3)

2. Remember the worst pain you ever had.

1) What was it?

2) Tell me how you felt.

3) What word(s) would describe it?

3. Circle the words that describe pain.

like a sharp knife	tingling	cutting	like a sting
sore	like an aching	uncomfortable	biting
cold	pounding	shooting	hot
cruel	sad	pulling	itching
tugging	like a pinch	horrible	like a hurt
sickening	miserable	tiring	unbearable

Are there any other words you would use to describe pain?

4. What colour is pain?

5. Circle the answer: Most often when I have pain

I feel sick to my stomach	YES	NO
I feel scared	YES	NO
I feel brave	YES	NO
I feel it will never go away	YES	NO
I feel angry	YES	NO
I feel like crying, but I don't cry	YES	NO
I feel like crying, and I do cry	YES	NO
I feel embarrassed	YES	NO
I feel like I have been bad	YES	NO
I feel nervous	YES	NO
I feel like screaming	YES	NO
I feel like hitting someone or something	YES	NO
I feel like running away	YES	NO
I feel like I have no control	YES	NO

6. What helps you feel better when you have pain?

Tell me more about other ways your family help you feel better when you have pain?

7. What is good about pain?

I, _____, am interested in participating in this study. The investigator has explained to me the study and have answered my questions. I have received a copy of the consent form to keep.

Parent/Legal Guardian

Subject (child)

Date

Investigator

Appendix H

DEMOGRAPHIC DATA

Perception and expression of pain in hospitalized
Chinese Canadian and non-Chinese Canadian school-aged children

Subject initials:

Subject number:

Male []

Female []

Hospital:

Ward:

Date of Admission:

Reason for Admission:

Previous hospitalization: Yes []

No []

If yes, - length of hospitalization:

- purpose of hospitalization:

Chinese [] Country of origin _____

Age arriving in Canada []

Years lived in Canada []

Years of education in Canada []

Non-Chinese [] Number of generation(s) in Canada _____
Country(s) of origins _____

Age 8 years [] _____months

9 years [] _____months

10 years [] _____months

11 years [] _____months

12 years [] _____months

Grade: _____