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Children's attitudes to a hospital familiarisation programme

Lis Mathiasen
Edith Cowan University

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**CHILDREN'S ATTITUDES TO A HOSPITAL
FAMILIARISATION PROGRAMME**

BY

**LIS MATHIASSEN
B.A. (Psych), Grad. Dip. (E.C.S.), Edith Cowan University**

A Thesis Submitted in Fulfilment of the Requirements

for the Award of

Master of Education

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USE OF THESIS

The Use of Thesis statement is not included in this version of the thesis.

ABSTRACT

Many young children are admitted to the emergency departments of our children's hospitals without the opportunity to receive any preparation in terms of what to expect and what to do or not to do (Health Department of WA, 2000). Surrounded by strange people, environment, smells, sounds and medical equipment, and confronted with possibly painful and invasive procedures, many young children become stressed and anxious. Negative psychological effects may have immediate and/or long lasting psychological consequences (Zuckerberg, 1994; O Byrne, Peterson & Saldana, 1997). It is important to protect young children's rights and to minimise upset and trauma whenever possible.

To meet the needs of children who may experience unplanned hospitalisation, preventative measures have been taken by The Association for the Welfare of Children in Hospital (AWCH). One of these preventative measures is a Hospital Familiarisation Programme (HFP) designed to prepare healthy young children for possible hospitalisation.

This study investigated the effect of the HFP on 5 years olds' understanding of common items of medical equipment and procedures, using a Medical Equipment and Procedures Test (MEPT). In addition, their feelings towards possible hospitalisation and medical intervention were obtained by the use of a Hospital Intervention Feelings Index (HIFI).

A Solomon Four Group design (Salkind, 1997) was employed with a total sample of 84 five-year-olds drawn from 4 pre-primary centres in a large metropolitan primary school. The treatment consisted of a Hospital Familiarisation Session conducted by a presenter from the Association for the Welfare of Children in Hospital, WA.

An analysis of variance revealed that there was a significant increase in the children's understanding of medical equipment and procedures, as well as an increase in positive feelings towards medical intervention as a result of the Hospital Familiarisation Programme. On the basis of these results and from a review of the research literature and an analysis of developmental theories, some modifications to the presentation of the HFP were suggested to maximise its effectiveness. Further recommendations were also made for current practice and future research investigation.

DECLARATION

“I certify that this thesis does not, to the best of my knowledge and belief:

- 4 incorporate without acknowledgment any material previously submitted for a degree or diploma in any institution of higher education;
- 5 contain any material previously published or written by another person except where due reference is made in the text; or
3. contain any defamatory material.”

Signature .

A large black rectangular redaction box covering the signature area.

Date 19-12-2003

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CHAPTER 1

INTRODUCTION

1.1 Background

Children can become stressed and anxious when faced with hospitalisation. Everyday routines and occurrences are replaced by an unfamiliar environment and events that may shock and bewilder a child on admission to a hospital (Jones & Mathiasen, 1993; Santen & Feldman, 1994). Furthermore, some children are faced with painful medical procedures such as intravenous drips, cleaning of wounds and needle pricks (Kirkby & Whelan, 1996; Bar-Mor, 1997; Hagglof, 1999; Murphy-Taylor, 1999). Repeated bone marrow aspirations, lumbar punctures and venipunctures have been found to be the most difficult medically invasive procedures with which children with cancer are required to cope (Mullis, Mullis & Kerchoff, 1992). The primary fear of children who are ill or hospitalised has been consistently reported as fear of body distortion, mutilation, or annihilation (Erikson, 1972; Eckhard & Prugh, 1978; Hansen & Evans, 1981; Poster, 1983; Ritchie, Caty & Ellerton, 1984; Lutz, 1986).

Bush (1987) claims that some children's ideas about illness can become distorted. Some may believe that painful procedures are a punishment for wrongdoing or simply an aggressive act on the part of medical professionals (Perrin & Gerrity, 1981). This may be especially the case with preschool children who are particularly vulnerable to the effects of the stress of medical intervention during hospitalisation (Zahr, 1998).

Factors that may influence the level of children's fear and anxiety, as well as their ability to cope with hospitalisation and medical procedures, include individual differences, developmental level, previous medical experience, perception of control, and strategies possessed for coping (Wright, 1995). Other factors, such as a high-frequency and long duration of hospitalisation, severity of illness and repeated medical procedures, also increase the likelihood of children showing behavioural problems and responding negatively to hospitalisation (Carson, Gravley & Council, 1991; Melamed & Ridley-Johnson, 1988; Thompson, 1986; Yap, 1988; Butler & Golding, 1986).

Negative experiences of hospitalisation and medical intervention can have immediate and/or long lasting psychological effects (Zuckerberg, 1994; O Byrne, Peterson & Saldana 1997). Melamed and Siegel (cited in Gillis, 1990) claim that up to 35% of hospitalised children suffer from anxiety to such an extent that they manifest immediate and/or long lasting psychological problems. These include stomach ache, eating disorders, sleeping disorders, interaction and relationship difficulties, as well as hyperactivity, especially in boys, and erratic control of bodily functions, both during and after hospitalisation (Hagglof, 1999). Children may also experience tiredness, withdrawal, depression, aggression and phobias (Wolf, 1981; MacCarthy, 1990; Gibbs, 1991; Vernon & Thompson, 1993; Whelan & Kirkby, 1995; Wright, 1995; Bar-Mor, 1997). Scaife and Campbell (1988), in their study of short-term changes in children's behaviour following hospital admission for surgery, found continued behavioural changes up to three months after an operation. Indeed, Yap (1988) claims that, even if only 20% of children admitted to hospital experience some degree of disturbance or trauma, there is significant cause for concern, which should be addressed without delay.

According to Lindquist & Azarnoff (1985, p.1), these psychological reactions amount to psychological abuse since;

Sometimes the innocent and inadvertent outcome of medical treatment overwhelms children's coping and mastery of the event taking place within their bodies. Abuse occurs when staff do not assess and understand children's abilities to deal cognitively and emotionally with treatment events.

In other words, the child's developmental status, personality, coping style and degree of resilience are not taken into consideration. Given that many children will experience medical intervention and/or hospitalisation early in their lives, it is important that measures be taken to prevent any possible negative psychosocial effects.

Not all children are afforded the opportunity of preparation for medical procedures. Statistics reveal that a significant number of children experience hospitalisation unexpectedly. According to the Health Department of Western Australia, 25,994 children aged 0 to 16 years were admitted through the emergency departments of Western Australian hospitals in 1998/1999. Of these, 58% were 5 years of age or younger (Health Department of WA, 2000).

1.1.1 Educational play

At Princess Margaret Hospital for Children in Western Australia (PMH) educational play is used to provide information to the young child and family members about impending hospital experience.

An invitation to attend a pre-admission tour is sent out to all booked admissions. A pamphlet, entitled *Medical Play at Home*, and a personal letter to the child stating what to bring to the hospital are included. The pamphlet is designed to empower parents, as it assists them to prepare their child for the forthcoming event, in an attempt to reduce any fear or anxiety the child may have about the unknown. Children attending a pre-admission tour are also given a colouring-in book, which illustrates hospital procedures. This booklet explains how procedures such as x-rays and blood tests are conducted and why they are necessary. Medical equipment such as a stethoscope and oxygen tubes are also illustrated. Parents are encouraged to read the book together with their child and to help complete the activities. By doing so, parents are in a better position to prepare their child for the forthcoming event within their own home and at their own pace (Mathiasen, 1997). However, no study has been carried out at Princess Margaret Hospital to test the effectiveness of this programme.

The pre-admission programme was developed on the basis of studies which found evidence to suggest benefits from preparing children for hospitalisation and medical intervention. Children who have been adequately prepared have been found to be more cooperative, show less anxiety, require less pain reducing medication and demonstrate less maladaptive behaviour (Gillis, 1990; Keegan, 1990; Collier & Mackinlay, 1993). In addition to educative play, a therapeutic play programme is provided to inpatients in order to prepare them for medical treatment. The child is given a calico doll, or uses his or her own teddy to act out the procedure the child is about to encounter (for example insertion of an intravenous drip). This preparation aims to minimise any anxiety the child may have, and to enhance the competence of the child (Edgar, 1985; Dunst, Trivette & Cornwall, 1988).

Another method used to assist the children to cope with medical intervention is non-directive medical play. This kind of play offers the child the opportunity to act out any physical or emotional trauma experienced as a result of medical procedures. Without this, some children have been found to suffer post-traumatic stress such as low self-esteem (Cattanach, 1922; Thompson & Vernon, 1993). The child is given a medical kit and a doll and is encouraged to play out whatever comes to mind. In this kind of play, it is common to see children express their feelings about medical procedures. An example is a child giving a needle all over a doll's body, while holding it down firmly (Jones & Mathiasen, 1993). Freud (1936) stated that the repetition of symbolic play is the ego's attempt to actively repeat a traumatic event that was earlier experienced involuntarily, so that the child can gain mastery over that event.

1.1.2 Health care policies

The policy of the Health Department of Western Australia on the health care of young children, which was developed jointly with the Association for the Welfare of Children in Hospital WA (Inc), states that:

Every effort should be made to minimise the physical and emotional distress to children and their families whether in-patients, out-patients, or in any community health care (1990, p.7).

It is further recommended that:

An educational programme be made available in the community to familiarise children with the hospital environment and hospital procedures (1990, p.7).

Parents should be encouraged to give information to their children and so prepare them in an honest and informed manner for a hospital admission (1990, p. 9).

In addition, the United Nations Convention on the Rights of the child (1993, Article 31) states that,

The child has the right to rest and leisure, to engage in play and recreational activities and to participate in cultural and artistic life. The State undertakes to provide appropriate and equal opportunities for the realisation of these rights (Greenwood, 1993).

Although PMH provides preparation and intervention programmes to minimise stress and anxiety for planned admissions and despite the recommendations of AWCH and the Department of Health the needs of young children admitted to hospitals in emergency situations has in the past been largely unmet. It is only recently that AWCH WA has sought to meet this need by providing the Hospital Familiarisation Programme to young children in schools. However, it is important to ascertain whether or not the HFP is effective in increasing children's knowledge of medical equipment and procedures and thereby reducing any anxiety or fears they may hold concerning medical intervention. This study sought to investigate this problem.

1.2 Research Questions

The two research questions were:

1. What is the effect of the Hospital Familiarisation Programme on young children's understanding of common items of medical equipment and procedures?

2. What is the effect of the Hospital Familiarisation Programme on young children's feelings towards possible future hospitalisation and/or medical intervention?

1.3 Definition of Terms

Young children

Operationally, in this study, “young children” refers to five-year-old pre-primary children from metropolitan Perth, Western Australia.

Pre-primary

Within the context of this study, “pre-primary” refers to the non-compulsory year of education for children in Western Australia turning five years of age before July 1st and prior to their entry to Year One of Primary School. In other states of Australia, this pre-primary year is given various names, such as “transition” or “preparatory” class.

Feelings

In this study, “feelings” refers to the children’s feelings towards possible medical intervention as measured by the Health Intervention Feelings Index.

Medical Intervention

“Medical intervention” refers to any process, technique or activity undertaken by a health worker, in a health clinic, doctor’s surgery or hospital, designed to assess or treat a health condition.

Hospitalisation

“Hospitalisation” refers to the process of admitting or retaining a patient for treatment in a clinical environment. In the context of this study, such admission is usually unplanned and therefore without patient preparation.

1.4 Significance

The main benefits of this research project are to:

1. Assist young children to gain an understanding of common items of medical equipment and procedures;
2. Help young children to develop healthy feelings towards possible medical intervention;
3. Familiarise young children with the procedures encountered on admission to hospital;
4. Test the effects of the Hospital Familiarisation Programme in Western Australia, which has not been done previously. A significant innovation of this study is that it tests a model of play-based intervention, thereby adding to our knowledge of the most effective way to minimise young children's fears of medical intervention, especially in an emergency situation where there is no possibility of planned preparation; and
5. Develop instruments to measure young children's knowledge of medical equipment and procedures and also their feelings towards medical procedures that they are likely to encounter in a hospital situation.

1.5 Summary

Whilst some children's hospitals have instituted programmes designed to prepare young children for planned hospitalisation and many parents and medical personnel are sensitive to, and respectful of, young children's fears and anxieties regarding medical intervention, others are not. An additional problem is that many children are not afforded the opportunity of preparation for medical intervention. Therefore it is a significant innovation that AWCH WA has seen fit to develop the Hospital Familiarisation Programme: a preventative model that can be fitted into any cultural context to be used to prepare all young children for medical intervention (whether planned or unplanned). Such a model is thought to be necessary to prevent deleterious psychosocial effects in young children requiring medical treatment and/or hospitalisation, particularly in an emergency situation. Never the less it is important to investigate the effects of the HFP.

In addition to explaining the background to this study, Chapter 1 has outlined the educative play provisions made at Princess Margaret Hospital for planned admissions, as well as the health care policies in respect to minimising the negative effects of medical intervention. The two research questions under investigation have been clearly articulated and the key terms used in this study defined, before pointing out the significance of this research study to young children's wellbeing. In Chapter 2 the research literature pertaining to medical intervention and young children's fears is summarised.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter discusses the factors influencing young children's reactions to medical intervention and provides a critical analysis of research studies of preventative measures. Although considerable information exists on factors influencing young children's reactions to hospitalisation and medical intervention, there is a dearth of literature on preventative measures. Moreover, the available investigations into the effects of preventative medical intervention procedures are mainly of a qualitative, subjective nature and lack controls.

2.2 Effects on Children

Many factors influence the extent of disturbed behaviours manifested by hospitalised children, such as the level of parental support and encouragement provided, which may extend from rejection on the one hand, to overindulgence and overprotection of the child on the other (Kirkby & Whelan, 1996). Other situations over which the child has no control, such as the duration of the stay (Shannon, 1985; Wright, 1995); the severity of medical procedures used (Kirkby & Whelan, 1996; Shannon, 1985; Wright, 1995); and the communication style of hospital staff (Klinzing & Klinzing, 1997), may have deleterious effects on the child. Misconceptions of hospitalisation and fears: of the unknown, pain, punishment, being left in hospital, doctors, nursing staff, or even death, can be the cause of considerable psychological disturbance in young children (Petrillo & Sanger, 1980).

Further influences on the young hospitalised child's ability to cope, include the psychological preparation of the child for admission to hospital (Shannon, 1985); the nature and seriousness of the illness; and whether the child has previously suffered abuse or stress, or has behavioural problems (Wright, 1995).

2.3 Parental Influences

Parents' reactions to a child's illness and hospitalisation may, in turn, influence the child (Zuckerberg, 1994; Wright, 1995). According to Darbyshire (1994), and Snowdon and Gottlieb (1989), hospitalisation of a child can have a major psychological impact on parents, as it means a profound change in lifestyle for children and their parents. It disrupts family routines and requires the family to change their usual lifestyle. It also places strain on family members in matters such as responsibility for the care of siblings and being able to take time off work to be with their sick child (Snowdon & Gottlieb, 1989). Furthermore, familiar routines and surroundings are replaced by an environment full of unfamiliar people, sights, sounds and smells (Darbyshire, 1994; Jones & Mathiasen, 1993; Snowdon & Gottlieb, 1989). Such a major change in the physical environment can have a profound effect on the attitudes, behaviour and feelings of parents (Chan, 1986).

Other factors contributing to the stress that parents may experience are fears and anxiety about their child's illness and recovery, their inability to care for their child personally, and to hold and touch their child spontaneously, as well as uncertainty as how best to help and protect their child from pain. In addition, the child's appearance, behaviour and emotions, medical procedures, and staff behaviour and communication difficulties may also contribute to parental stress (Kirkby & Whelan, 1996). The most common feelings

parents experience during hospitalisation of their child are anxiety, fear, confusion, anger, uneasiness, depression and relief (Berenbaum & Hatcher, 1992; Knafl, 1985; Schum, 1989.).

Parents may grieve the loss of their role as parent to a healthy child, as they take on the role of parent to a critically ill child. They have to resolve the fact that the care of their child is taken over by others and come to terms with different ways of being involved with their child's care. Parents of a previously healthy child who suddenly becomes critically ill or is traumatised by accident and consequently admitted to intensive care, are found to initially experience anxiety to the extent of near-panic levels (Huckabay & Tilem-Kessier, 1999). Also, parents of children undergoing day surgery, may become more anxious because of a perception that they have been given greater responsibilities in looking after their sick child at home (Murphy-Taylor, 1999). Other factors influencing the way parents react to their child's illness and hospitalisation include previous medical experiences of family members (Kirkby & Whelan, 1996; Tideman, 1997); the mother is a teenager (Kupst, Schulman, Honing, Maurer, Morgan & Fuchman, 1982); the patient is an only child; or the mother is a member of a minority group (Schepp, 1991).

Unavoidable hospitalisation of a child can be highly stressful to parents. Ogilvie (1990) claims that prior to hospitalisation, many parents perceive their own anxiety to be much greater than the child's anxiety. Indeed, some parents try to be brave and avoid overtly expressing their fears and anxiety to the child (Jay & Elliot, 1990; Jay, Ozolins, Elliot & Caldwell, 1983). Nevertheless, it has been found that when the mother is highly anxious and reacts negatively to the child's hospitalisation or illness, the sick child

becomes more anxious, and hence the child's ability to cope may be dramatically decreased. This transferred anxiety depletes the child of energy needed for recovery (Huckabay & Tilem-Kessier, 1999). However, when the mother's level of anxiety is low, the child's anxiety decreases to the point where the child becomes more cooperative with medical personnel and medical interventions (Broome & Endsley, 1989; Fosson, Martin & Haley, 1990).

A lack of preparation for hospitalisation and medical procedures is thought to contribute to higher levels of parental anxiety (Tideman, 1997). Tideman investigated the level of anxiety of 50 mothers and 2 fathers regarding the unplanned and unprepared hospitalisation of their children. All the parents reported feeling intense anxiety, particularly at the time of admission. However, at the time of their child's discharge, these feelings had decreased significantly. Reasons that may account for the changes in feelings over time, include stressful events such as the child's pain and discomfort and intrusive procedures during hospitalisation, while at the time of discharge, the parents may feel more relaxed. They have become more familiar with the hospital environment; there are less competing demands for their time; and they may have learned new coping strategies (Tideman, 1997).

2.4 Research on Preventative Measures

In the United States, Pomarico, Marsh and Doubrava (1979) attempted to prepare children for hospitalisation by providing them with information about hospitals and hospital equipment. On the basis of subjective observations, they reported that those children who were shown pictures and slides featuring hospital procedures followed by

discussion and hospital tours, showed less anxiety and greater cooperation than those children who had not been so prepared.

In 1984, Mather conducted a pilot study in the United States of America with thirty-four healthy preschool children. The children's knowledge of medical equipment was tested before and after the attendance of a preparation programme which visited their school. Level of knowledge was ascertained through a medical equipment test which was administered to each child individually. Each child was asked to demonstrate the use of various pieces of medical equipment on themselves, a doll or the examiner. The actions of the child were observed and a score given which was determined by the accuracy of their response. The results of this study showed an increase in knowledge after exposure to the preparation programme. However, there was no control group, so the study lacked internal validity. Also, the sample was small, so that the findings can not be generalised to the population at large.

Siaw, Stephens and Holmes (1986) administered a 20 item knowledge questionnaire to assess children's understanding of various pieces of medical equipment in the United States of America. Thirty hospitalised children between the ages of 3.5 and 12.8 years were divided into three groups (3.5 to 5.8 years; 6.2 to 8.6 years; and 9.0 to 12.8 years), to approximate distinct stages of development. The children were then exposed to a preoperative teaching programme that included general medical procedures and a variety of medical equipment. This was followed by a test where the children were asked to name a piece of medical equipment, describe its function, describe how it feels and show where on the body it is used. The results showed an increase in understanding of the use, name and

position on the body of the medical equipment by the older children aged 9.0 to 12.8 years. However, the younger children (3.5 to 6.2 years) were more likely to learn certain types of observational information, such as where an instrument is used on the body, rather than the name of the instrument, or its function. Thus they had limited understanding of medical equipment despite exposure to it. However, it was observed that those children who had the best understanding of medical equipment showed the least amount of anxiety about medical intervention. This study provides insight into children's comprehension of concrete and verbal information according to their stage of development. However, the study lacks internal and external validity. Firstly, there was no control group. Secondly, no pretest was conducted to measure the difference in children's understanding of medical equipment and procedures prior to the preoperative teaching programme. Finally the sample was small, so the findings can not be generalised to the population at large.

In Australia, Gillis (1990) adapted Siaw's (1986) knowledge questionnaire and administered it to thirty rural children, between the ages of 6 and 12 years, who were scheduled for elective surgery. The children were interviewed one week prior to hospital admission and again within one week after discharge. Although the results of the study showed that all the children had gained knowledge about commonly used instruments, a lack of knowledge about the function or the sensations of an instrument used on the body was evident. Congruent with the findings of Siaw et al. (1986) it was claimed that the anxiety level in all the children was reduced. However, there was no control group; convenience sampling was used; the likelihood of the children's previous exposure to medical intervention was not taken into consideration; and no measure was taken of the

children's anxiety levels prior to hospital admission. As a result, the study lacks both internal and external validity.

In Western Australia, Jones (1998) compared the increase in knowledge between a control and experimental group of 40 preschool children. She found that the experimental group who had been given an information session on medical equipment and procedures, scored higher on knowledge of pieces of medical equipment than those who had not received information. However, convenience sampling was used. Consequently there was no way to estimate the probability of each element being included in the sample. Furthermore, the sample was small, and there were some confounding variables that may have jeopardised the internal validity. The experimental group had been exposed to community services such as St John's Ambulance, and consequently were more likely to have seen and discussed various pieces of medical equipment prior to being exposed to the Hospital Familiarisation Programme session. This additional exposure may have contributed to their higher score. Finally, the children were exposed to just four kinds of the most commonly used equipment in doctors' surgeries. These included a stethoscope, thermometer, blood pressure cuff and nebuliser mask. As this research possessed neither internal nor external validity, it can not be generalised to the population at large.

2.5 Summary

Thus, this chapter has reviewed the literature on the effects of medical intervention on young children, as well as parents' reactions to the hospitalisation of their young children. Research studies on preventative measures taken were then critically analysed. However, it may be seen that few studies have been conducted on the best way to prepare

young children for possible medical intervention, and those studies that have been carried out are lacking in controls. Although many children's hospitals in Australia prepare young children for planned medical admissions and medical intervention, Western Australia is the only state that attempts to prepare young children in schools (through AWCH) for unplanned medical intervention.

Many theories exist as to how young children develop and learn. Therefore, it is important to examine some of these theories and to relate them to the hospital familiarisation programme which is designed to develop positive feelings towards medical intervention. A summary of relevant developmental theory is provided in the following chapter.

CHAPTER 3

THEORETICAL FRAMEWORK

3.1 Introduction

Chapter 3 presents the theoretical underpinnings of this research study which incorporates the cognitive and emotional development of a typical five-year-old child. Childhood fears, as well as the contribution of play to a young child's development, are discussed and the key constructs defined. More particularly, the theoretical rationale for the construction and appropriateness of the two measurement instruments used in this study is explained.

3.2 Cognitive Development

3.2.1 Piaget

Cognition may be defined as the act of knowing, and according to Piaget (1951), is the child's construction of reality. Jean Piaget (1951) was the first to recognise that the thinking of young children is qualitatively different from that of older children or adults and results from a gradual internalisation of action.

According to Piaget (1951), the majority of five-year-old children are in the preoperational stage of cognitive development. They are concrete thinkers and are unable to think operationally. That is, they cannot internally transform and manipulate their world, because they do not yet possess the symbolic representations needed for logical, abstract

and scientific thought. Therefore, they need real life experiences or concrete visual and auditory images to assist them to understand the world in which they live. When new information doesn't fit what the child already knows, and as a result makes the child feel uncomfortable (disequilibrium), they attempt to restore the balance by the process of assimilation (changing what is perceived to fit what they already know), and accommodation (changing their cognitive structures to fit what they perceive). However the pre-operational stage marks the beginning of representational thought, as children can now use symbols in language and play. There is rapid development of pretend play during this stage, along with language. Thus the children use symbols, especially language, to gain meaning from their experiences, while still using their own perspectives as a frame of reference and solving their problems intuitively.

Indeed, because preoperational thought is largely perception bound, preschool children are easily deceived by appearances and concepts are based on how things are sensed (i.e. how they sound, feel, look and so on). In terms of problem-solving, they tend to deal with one variable at a time, leading to reasoning such as (Daddy left because I wouldn't eat my vegetables). They tend to be cause and effect focussed (e.g., I tripped over because I just ate a big icecream); and they tend to be egocentric in their perspective (e.g., this happened because of me) and not be able to take the perspective of others. In addition, young children frequently give a running oral commentary on what they are doing at the moment, when talking and listening to others, but this private speech is not intended to communicate anything to anyone else (Berk, 1996).

However, the new insights into young children's thinking provided by Piaget, have led to an image of the child as an active learner: constantly striving to make sense of the world by exploration and experimentation. This image has in turn caused a movement away from a structured environment and curriculum, towards the provision of an open-ended, rich and stimulating environment, where children are able to play and express their thoughts and ideas by transforming materials and using symbolic representation to a greater degree than previously.

An example of a young child (aged 6 years) making meaning from his environment on the basis of his past experience, was provided by a mother who related how she took her son to a children's hospital because there was something wrong with the bones in his hand. On admission, the nurse said that they would take the lift upstairs to get an x-ray because the doctor needed to look at the bones in the boy's arm. Once in the lift, the child became hysterical and demanded that the mother take him home. On calming him down, the mother discovered that her son had no idea what an x-ray was. In the absence of this vital information, the child had reasoned that the doctor would need to cut his arm open in order to look at the bones inside.

The relevance of Piagetian theory to the current study is that the average 5-year-old child is in the preoperational stage of cognitive growth and needs ample opportunity to explore the medical environment in order to make sense of it. Thus, the treatment needs to enable the child to construct meaning and understand by examining intensely, handling, talking about, and trying out the various medical apparatus and procedures. At the same

time, the child will be able to clarify misconceptions and fill in knowledge, avoiding fear of the unknown.

Similarly, the Medical Equipment and Procedures test (MEPT) needs to test the children's knowledge and understanding of medical equipment and procedures in a concrete manner, by permitting the child to see and handle the equipment; to show where on the body it is used, which many will be able to do on the basis of observation; and then to use language to state what it is used for; before finally giving its name, if known.

In order to gain a measure of the young child's feelings about common forms of medical intervention, again the test needs to be kept as real, concrete and active as possible. Thus the Health Intervention Feelings Index (HIFI) provided the child with a drawing of 5 non-gender specific faces, displaying happy, OK, scared, very scared and angry emotions. This enabled the young child to identify with the emotions displayed in the drawings and to simply point to the one that showed how they felt, without the need for language on their part.

3.2.2 Vygotsky

Like Piaget, Vygotsky (1977) believed that young children actively construct knowledge. However, whereas Piaget believed that learning followed development which is invariant, Vygotsky stated that learning leads development. According to Piaget, young children need lots of experiences with colour for example before they can learn the words to describe the different colours. However, Vygotsky believed that if children were given the names of the colours firstly, they would quickly master the concept of classifying by

colour. Thus Vygotsky believed that learning is relevant to experience and not invariant as Piaget believed.

According to Vygotsky, learning cannot be separated from its social context, making interaction with others vital. In addition, it is believed that it is through language that higher mental functions such as symbolic thought are transmitted. Unique to humans are the higher mental functions of focussed attention, deliberate memory and symbolic thought. Thus the adult can assist the young child to learn the colour green for example, by focussing on a green crayon, asking questions to guide the child to recognise the colour green, and encouraging the child to use the concept at a symbolic level.

Vygotsky proposed that the young child could perform at two levels. The child achieves the first level independently. This is what young children can do on their own without any help, while the second level is reached with assistance from a more knowledgeable other such as a peer or adult. The distance between these two levels is called the zone of proximal development .

A point of contention between Piaget and Vygotsky is the meaning of preschoolers self-directed speech. Vygotsky, unlike Piaget, did not see private speech as egocentric and nonsocial, but as communication with the self to give guidance and direction. As children receive verbal guidance within their zone of proximal development from more knowledgeable peers or adults, they incorporate these dialogues into their private speech where they use them to guide their behaviour.

Thus, in keeping with Vygotskian theory that learning takes place in a socio-cultural context, the treatment model needs to comprise an interactive group discussion between peers in the context of their regular school setting. Within this interactive group session with peers, the child is given the opportunity to develop concepts through discussion, where the presenter asks questions, guides discovery and encourages children to verbalise their experiences and knowledge. In this way, children's knowledge becomes extended (scaffolded) by interaction with more knowledgeable others (whether peers or presenter). Each child is thereby able to progress through his/her zone of proximal development from the point of knowledge and understanding reached on their own, to the point reached with assistance and guidance from others.

Similarly, the Medical Equipment and Procedures Test (MEPT) is situated in an informal discussion session between children and researcher, where the children have the opportunity to verbalise their thoughts and relate their experiences to the researcher, and perhaps engage in private speech, as they construct meaning from the medical environment. The Health Intervention Feelings Index (HIFI) also takes place in the familiar socio-cultural setting of the pre-primary centre where the children interact with the researcher and are free to choose to talk about their feelings regarding medical procedures or not.

3.2.3 Bruner

Bruner (1966) identified three major stages through which children move in their representation of the world around them. These are enactive, iconic, and symbolic.

In the enactive stage, children use action to understand the environment. For example, the young child learns to ride a tricycle by action. No amount of explaining or diagrams will permit the child to master the skill. Thus actions such as touching, holding, biting, moving and rubbing are needed to experience the objects in a young child's world. This form of representation is akin to Gardner's (1993) bodily kinaesthetic intelligence and to Piaget's sensorimotor stage where knowledge and action are synonymous.

Bruner's second iconic stage is congruent with Piaget's preoperational stage where information is carried by imagery and knowledge is coded by perceptual characteristics. Although the child develops visual memory, decisions are based on sensory impressions rather than language. This means that the preschool child is caught in his/her perceptual world and is easily deceived by sound, movement or brightness. Again, this representation of knowledge is called spatial intelligence by Gardner (1993).

In the third symbolic stage, understanding comes through symbol systems, especially language. Symbol systems such as language, logic and mathematics enable the child to translate experiences into formulae ($A > B$; $B < C$; $\therefore A > C$) or into semantically rich statements such as "A bird in the hand is worth two in the bush." These sayings and formulae contain understandings that are communicated by symbol systems and allow one to represent the world as it is. The important information is condensed and stored in long term memory, ready for retrieval when needed.

The implications of Bruner's three major stages of intellectual development for this research project, are that in order to teach young children about a piece of medical

equipment for example, it is best to let them firstly experience it concretely by handling it (enactive mode). Next, pictures could be used (iconic mode). Finally, verbal instructions could be given (symbolic mode). Young children can not think abstractly and therefore can not make sense of an experience that they have never had, an item they have never seen, or on the basis of verbal instructions alone. Therefore, the treatment model, in order to be effective, needs to combine concrete, pictorial and symbolic representations. For this reason the Medical Equipment and Procedures Test also progresses from the concrete to the iconic to the symbolic modes and the Health Intervention Feelings Index is kept as simple, active and concrete as possible.

3.3 Psychosocial Development

Erikson (1963) proposed that healthy personality development was conditional upon the successful resolution of a number of crises faced at eight particular transitional periods throughout the lifespan. The preschool child needs to resolve the crisis of initiative versus guilt in order to make healthy personality development. During this period the child learns the meaning of No and experiences feelings of guilt if the child performs forbidden acts. This is the beginning of conscience. Some children who are continually prevented from using their initiative however, may develop into guilt ridden, constricted individuals, while on the other hand, a total lack of restriction may result in a lack of conscience. A balanced resolution of the initiative versus guilt crisis frees initiative and sense of purpose and sets the child on the road towards the development of a healthy self concept and realisation of potential.

Freud (1936) was the first to recognise the cathartic qualities of play, through which he claimed children could re-create an unpleasant experience over and over in order to assimilate it, thereby reducing the intensity of their feelings (Frost, 1992; Schaffer, 1993). Erikson supported this psychoanalytic position that play has defensive and cathartic elements and added that play is a means by which the child learns to cope with the environment. Recent brain research has further established that the neural pathways formed during the early years carry signals in the brain and facilitate the processing of information throughout one's entire life. The ability of children to control their emotions appears to depend on the biological systems formed during their early experiences (Shore, 1997).

Erikson (1963) was concerned with emotional distress, seeing socio-dramatic play as a way of children dealing with anxiety and making up for defects, sufferings and frustrations. In socio-dramatic play, children are able to create their own world in which they can act out new roles and master new situations, thereby forming their own identity. Herron and Sutton-Smith (1971) assert that socio-dramatic play enables children to exercise control by blending reality with fantasy to create a scenario in which they make the decisions.

According to Landreth and Hohmeyer (1998), after children express negative feelings through play, they develop a sense of mastery and control and can move on to express more positive feelings. Also, in taking on different roles in dramatic play, children come to understand differences in feelings and to develop their problem solving skills. By promoting emotional development and feelings, socio-dramatic play empowers children

and results in positive feelings of self and a sense of happiness (Piers & Landau, 1980; Singer & Singer, 1977).

In this study, the treatment model incorporates socio-dramatic medical play with real items of medical equipment so that children can exercise their initiative in creating their own scenarios without fear of making mistakes. Young children are free to act out any fears they may have regarding medical intervention, in a safe environment. Children who have suffered painful invasive medical procedures can vent their hurt and anger on the doll patients. Indeed, it is not uncommon to observe a young child, after a period of hospitalisation, giving a doll patient injections all over its body.

3.4 Play

Play is one of the most important activities in a young child's life. It is valuable to every aspect of development: physical, social, intellectual and emotional (Sebastian-Nickell, 1992, p. 88).

According to Piaget (1951), play is the means by which children assimilate information that enables them to fit experiences into a framework of understanding that has already been built up. In addition, play provides children with a unique individual experience and the language to express feelings, so that the foundation of normal development may be established. Symbolic play, which is associated with the preoperational stage of development, involves the use of mental representations to pretend that one object stands for another in either constructive or dramatic play. Whereas constructive play involves the use of concrete objects to create a representation of other

objects, dramatic play involves the creation of make-believe roles and characters. Thus the players use materials and their bodies and voices for imaginary purposes. By observing young children at play, one can gain valuable insights into their general level of understanding (Dockett and Flear, 1999).

Vygotsky (1978) saw socio-dramatic play as organised make-believe in a social setting and stressed the development-enhancing consequence of representational play. Vygotsky accorded fantasy play a prominent place in his theory, giving it the status of a leading factor in development.

Play creates a zone of proximal development in the child. In play, the child behaves beyond his age, above his daily behaviour; in play it is as though he were a head taller than himself. As in the focus of a magnifying glass, play contains all developmental tendencies in a condensed form and it is itself a major source of development (Cited in White, 2001, p.7).

In Vygotskian theory, play is a social symbolic experience so that the themes involved in young children's play relate to the society and culture in which they are situated. Children adopt roles and rules that have a social and cultural base when they play. When young children participate in pretend play they rely on their inner world of thoughts and ideas, rather than the external world of objects, which eventually leads to the cognitive development of abstract thinking. The gap between children's current developmental level and their potential level is the zone of proximal development and in order to reach their potential, children need to be supported or scaffolded in their learning. Play creates a zone

of proximal development, where interaction with peers and adults is the basis for the construction of new knowledge and understanding (Dockett & Fleer, 1999).

Thus both Piaget and Vygotsky advocated the provision of play to enable the young child to engage in symbolic representation and symbolic action. However, whereas Piaget valued play for the freedom it gives the young child to become actively engaged, Vygotsky saw the value of play in the demands it makes on children to control or regulate their behaviour as they follow the rules and roles of play.

Unlike adults, preschool children are not able to express their feelings through language so they express them through play where they feel safe. Smilansky and Shefatya (1990) claim that socio-dramatic play is the most advanced form of symbolic and social play, where young children carry out imitation, drama and fantasy at the same time. *Socio-dramatic play is dramatic play involving two or more children who assume related roles and follow each other's cues in acting out an event or social context from the adult world* (Shipley, 1993, p.149). Children imitate real-life people and experiences that they have had themselves.

Smilansky and Shefatya (1990) state that through socio-dramatic play children escape into the world of imagination and away from reality. When initial pressures such as fear or pent-up aggressive feelings become too strong, the child seeks refuge in real people and real-life situations in an effort, or as a means to re-establish self-confidence. On the other hand, escape into the world of imagination or fantasy occurs when the child tries to evade reality in an effort to achieve wish fulfilment. It is very important that all children be

given the opportunity to reconstruct their own experiences according to their understanding of them.

Teachers need to respect the integrity of socio-dramatic play by protecting the children from interference, providing the appropriate space and props, and permitting the children to choose and decide how long they will play (Sawyers & Rogers, 1988). Providing suitable materials and opportunities for children to play in a permissive, non-interfering atmosphere supplies them with the best possible means to come to terms with reality in their own way, as well as the best treatment for minimising fear and anxiety by the release of emotional energy through creative play. Further, Smilansky and Shefatya (1990) point out that the roles taken on by children in play are significant, because rather than being the recipients of someone else's activity, the children are now in control. They are now able to initiate actions to manipulate their surroundings by, for example, being the grown-up doctor treating the patient, rather than a patient being doctored.

In exploring unknown objects in socio-dramatic play by holding, feeling, examining intensely and manipulating them, essential properties are learned (Bruner, 1972) and simultaneously any anxiety associated with the unknown object is reduced (Klein, 1983; Bolig, 1990; Santen & Feldman, 1994). In this research study, provision for socio-dramatic play with medical apparatus, costumes and props was an integral part of the treatment. This was to facilitate the children's construction of meaning, expression of emotions and reduction of fears or anxieties, while trying out various medical roles and developing a sense of power and control over medical procedures.

3.5 Childhood Fears

Fear is an integral part of growing up, and as such, may be regarded as a normal part of child development. However, many five-year-olds still experience difficulty in separating fantasy from reality and may experience fears that are very real to them. The most prevalent fears of five-year-olds have been found to be fear of wild animals, the dark, bad people, separation from parents, being alone, monsters and bodily injury. Both separation from parents and bodily injury are characteristic of being hospitalised. Also, between the ages of 2 and 6 years, children are 5 times more likely to have preoperative anxiety reactions than older children (Zuckerberg, 1994). Most children learn to deal effectively with their fears by finding adaptive ways of coping, so that the fears pass on without great disruption, but for others, facing their fears is a painful experience. Even though fear is unavoidable, not all children will learn to cope with fear effectively. In some cases fear may affect the child's functioning in school and at home, while for others, the effect of fear may become debilitating (Robinson, Rotter, Fey & Robinson, 1991).

Indeed, early negative experiences and other environmental influences such as lack of appropriate stimulation or abuse and neglect have been found to seriously affect brain growth and development. Those areas of the brain that are responsible for regulating emotions such as responses to stress (the limbic system) are organised very early in life, making this a critical time for gaining control over stress responses. Trauma stimulates the neurochemical response to fear and stress, causing high levels of stress hormones such as cortisol in the brain. This results in the part of the brain that is responsible for arousal and vigilance being in a constant state of alert. The resulting patterns of responses to stress become embedded in the child's physiological and neurological systems (Knowles-Ulmer,

1999). In other words, fear occurs in anticipation of, or exposure to, pain or loss. Thus at hospital, where a young child is likely to encounter unfamiliar medical equipment and procedures, fear is likely.

The degree of fear experienced is related to most children's perception of vulnerability and should be understood on an individual basis. However, children of the same age, display many of the same responses to fear objects. Robinson et al., (1991) have developed a model for understanding children's fears (See Figure 1).

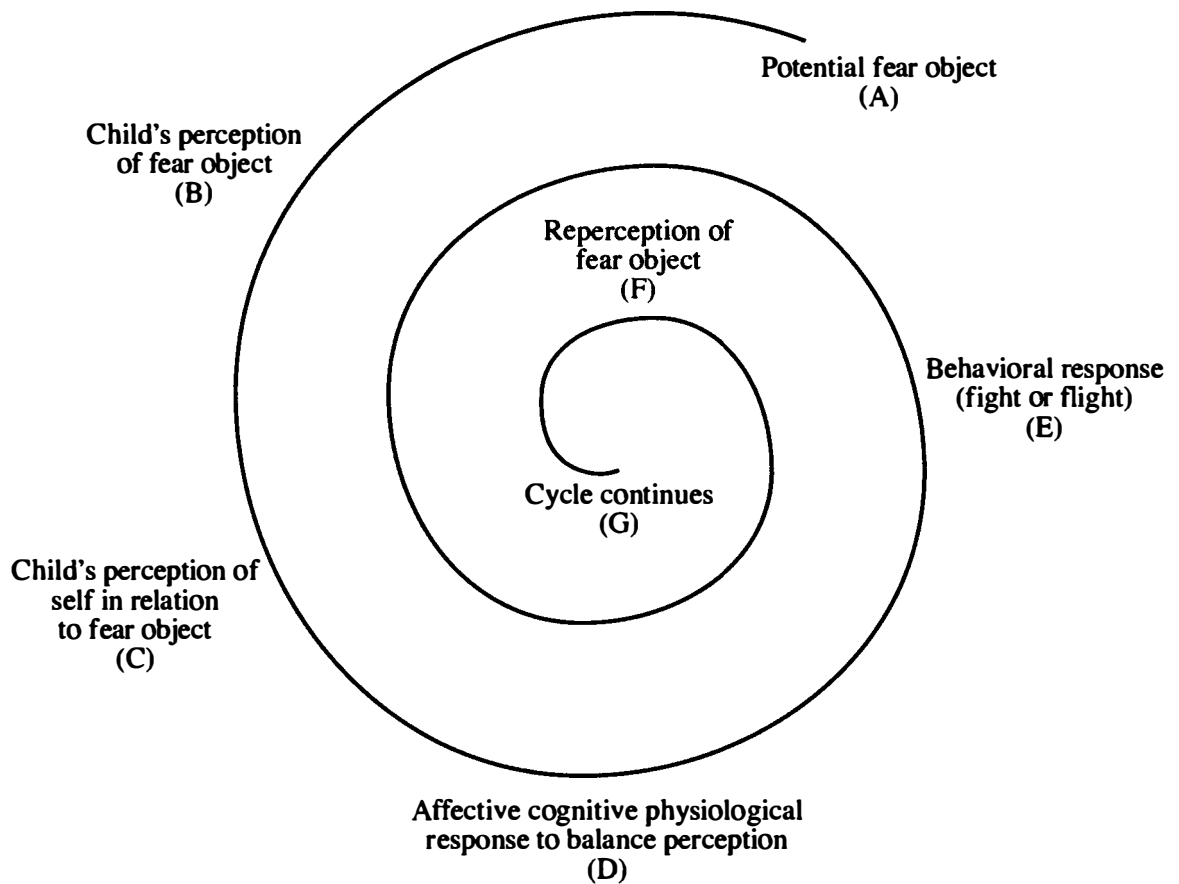


Figure 1 The Fear Cycle Source: Robinson et alia (1991).

In their fear cycle, the child perceives an object or concept (B), which is compared with one's sense of self and one's personal resources (C). On the cognitive level, the child may realise that they have resources to deal with the feared object (D), but the physical response may be that they feel a tingling sensation, followed by a behavioural response of fight or flight (E). Consequently, the child reassesses the potential threat of the feared object (F) and the cycle continues (G). The degree to which the child's action minimises the potential threat, influences the child's perception of the feared object. The more children master such situations successfully, the less vulnerable they may feel, because they have a sense of control. However, children who are less successful in mastering the situation feel more vulnerable. They may feel powerless and not in control. These children are likely to express more concerns when faced with feared objects and they may also approach new situations with greater trepidation.

It cannot be assumed that individuals are always able, or even willing, to recognise and describe their fears. In time of war, individuals are expected to have courage and refrain from displaying their fear. It is also common for boys to be discouraged from expressing fear. In surveys carried out on student populations, it has been found that the admission of certain fears by males is felt to be socially undesirable. Because of social influences, appropriate expression of fear may be unclear and complicate one's natural ability to recognise and describe actual or predicted fear experiences. On the one hand, it is common for some individuals who state their fear of a particular situation or object to display little or no fear when confronted with the actual object or situation. On the other hand, some individuals state little or no fear of a future event such as receiving an injection, but display fear and anxiety when faced with the situation. The latter can be described as

acute fear, which is generally provoked by tangible stimuli or situations, such as an accident followed by painful medical intervention. The major causes of fear include exposure to traumatic stimulation; repeated exposure to sub-traumatic situations; observation of others, such as parents, exhibiting fear; and the receipt of fear provoking information, such as gory tales from peers (Woolfolk, 1987).

Fears may be diminished by familiarising children with the feared object; using systematic desensitisation such as repeated exposure to a mild version of the frightening situation or object; cognitive restructuring; cognitive self-control; bibliotherapy; and relaxation. Gradual and graduated familiarisation where children gain a sense of power, may lead to a decline in fear of an object and the child's level of anxiety. Thus, empowering young children can play a vital role in preparing them for medical intervention (Robinson et al., 1991).

Power consists of the three constructs of security, self-worth and control. The degree to which children feel secure, valued and act on their environment determines how they generally react to a potentially feared object. Although 5-year-olds commonly fear the dark, once they gain a sense of power, they may see themselves as more powerful than the feared object, and therefore tend to believe that they will find a way to master the situation. On the other hand, children without a sense of power, may have difficulty in coping with the feared object or situation. Children who feel secure and good about themselves are motivated and have the confidence to try out new strategies to overcome fear (Rotter & Robinson, 1987). Children who have experienced autonomy in decision making, learn that they have a degree of control over their lives. They also learn about their strengths and

weaknesses, and come to accept that difficult situations are a natural part of life (Robinson et al., 1991). The opportunity to play the role of doctor or nurse to a patient, with the use of real medical equipment, is designed to help young children to develop this sense of security, self-worth and control.

Security is *having a sense of well being and safety based on having support in facing the world and life in all its aspects*. Supporting elements can be parents, siblings, teachers or inanimate objects such as a teddy bear or persona doll, that the child can draw comfort from when faced with potentially feared objects or situations. Supporters may also help to intervene and neutralise the influence of feared objects or situations by discussing and familiarising children with them, which in turn, may help children develop strategies for coping with situations such as hospitalisation and medical procedures (Robinson et al., 1991). In the HFP, a large calico doll is used as the patient.

Self-worth is defined as *having a sense of confidence that one is capable and valued* (Robinson et al., 1991, p. 192). Children who feel good about themselves believe that they can find ways to overcome the difficulties they encounter in life, so they readily approach a task such as medical procedures with confidence and success (Robinson et al., 1991).

Control involves *a sense of power over one's life and events* (Robinson et al., 1991). For example, a child who is having a blood test and who feels in control, may decide to sit still and keep the arm straight. Exercising successful control over potentially fearful events may in turn enhance a child's confidence and self-worth and hence ability to cope

with potentially painful medical procedures. The opportunity for young children to develop their sense of confidence in overcoming their fear of medical intervention and control of the situation is provided in the hospital play component of this study.

Coping is defined as *deal effectively or contend successfully with a person or task, or manage successfully with a situation or problem* (The Oxford Dictionary of Current English, 2001). Coping is a conscious and rational way of dealing with the anxieties of life. Generally, coping can be conceptualised as style-orientated or process-orientated. From the style-orientated perspective, it is assumed that coping styles remain relatively stable across situations, whereas in the process-orientated perspective, the person may use different methods to cope in various situations, depending on the demands of each situation as appraised by the individual. Therefore, the rationale for preparing children and their parents for hospitalisation is that they will cope better with some of the unavoidable stresses of hospitalisation such as anxiety caused by fear of the unknown.

3.6 Summary

This chapter has presented the major theories of how young children learn best and related them to the philosophy underpinning the Hospital Familiarisation Programme and the measurement instruments (MEPT) and (HIFI) used in this study. Despite differences in the theories of Piaget, Vygotsky, Bruner and Gardner, all emphasise the importance of children using their senses and exploring and experimenting with their environment in their quest to make sense of their world. These theorists also point out how young children tend to be perception bound so that things are not always as they appear to them.

The main theories of emotional development of preschool children were then discussed, along with the important cathartic role of socio-dramatic play in aiding healthy personality development and assisting children to deal with fear and anxiety. The theoretical justification for the inclusion of socio-dramatic play in the treatment aspect of this study was also provided.

A model for understanding childhood fears (Robinson et al., 1991) was then presented and discussed within the context of this study, along with ways to help young children cope with their fears, particularly in relation to medical intervention.

It is important that the instruments used to measure young children's knowledge and understanding of medical equipment and procedures, and their feelings towards them, are appropriate to their level of development: particularly theories of how young children learn. The two instruments used in this study are grounded in developmental theory and are described in Chapter 4.

CHAPTER 4

METHODOLOGY

4.1 Introduction

In this chapter the research plan that forms the basis of the study is discussed and linked to the research questions. Details of the sample selection are provided, as well as the methodology for data collection and analysis procedures adopted to ensure authenticity of the findings. Details of the measurement instruments used in this study, and for which the theoretical rationale has been given in Chapter 3, are provided. A brief summary of the Hospital Familiarisation Programme, which comprises the treatment phase of this research study and which was described in detail in Chapter 2, follows. Finally, the limitations and ethical considerations arising from the study are discussed.

4.2 Research Plan

This research plan sought to overcome the limitations of previous investigations (summarised in Chapter 2) by carrying out a quantitative study. Borg and Gall (1989) point out that quantitative research attempts to be objective in understanding the world as it is, free from personal biases, values and idiosyncratic notions. In order to establish the effect of the Hospital Familiarisation Programme on the attitudes of young children to medical intervention, an experimental Solomon four group design (Salkind, 1997) was used. The elegance of this design is that it has both internal and external validity and enables comparisons to be made to determine factors responsible for outcomes attained. For

example, a comparison of groups 1 and 2 will reveal the effectiveness of the treatment; a comparison of groups 1 and 3 the influence of the pretest on outcomes; while a comparison of groups 3 and 4 will reveal the effect of the treatment on the groups that did not receive the pretest but did receive the treatment. The chief drawback to this experimental design is that it is time-consuming. However, the strength of this design is that it enables factors responsible for differences in the dependent variable to be separated out (Salkind, 1999).

4.3 Sample

It was proposed to randomly assign around 100 five-year-old preprimary children to four groups to comprise the sample for this study. However, most primary schools in the Perth metropolitan area have one or two groups of 25 preprimary children only, particularly in the light of a change in school entry age in Western Australia in 2002 which resulted in a reduced cohort. A large school located in a new housing district with four preprimary centres, agreed to take part in the study. However, timetabling and rooming restrictions precluded the random assignment of the children to four groups, so they stayed in their four class groups for the study. Nevertheless, it should be remembered that the children were originally allocated randomly to these classrooms. Informed consent was obtained from the parents of 84 five-year-old children to take part in the study, and these subjects comprised the sample which was assigned to four groups of 21 children in the following configuration.

Group 1	Experimental	Pretest	Treatment	Posttest
Group 2	Control	Pretest	No treatment	Posttest
Group 3	Control	No pretest	Treatment	Posttest
Group 4	Control	No pretest	No treatment	Posttest

Thus the use of this design enabled comparisons to be made to determine factors responsible for outcomes attained. Not only could the use of experimental and control groups enable the effect of the treatment (HFP) to be determined, but it also became possible to determine if administering the pretest made any difference to the final outcome.

4.4 Ethical Considerations

It is important for research to exhibit the two characteristics of scientific merit and ethical soundness (Miller, 1998). Thus permission to commence this study was obtained from the Human Ethics Committee of Edith Cowan University. Informed consent was obtained from the principal, teachers and parents (Appendices A, B and C). The letters included an explanation of the study which aimed to ascertain the most effective way to prepare children for possible medical intervention and the prospect of undergoing common medical procedures. The letters also informed the principal that the researcher, an experienced early childhood educator, would speak with the children, during the normal course of their day s activities, about going to hospital and usual medical procedures, such as taking a temperature or listening to a heartbeat. Participants were appraised of their right to withdraw from the study at any time without penalty.

In addition, it was explained that the groups would receive an enjoyable and interactive hospital familiarisation session conducted by a trained presenter from the Association for the Welfare of Children in Hospital and lasting for approximately 30 minutes. It was also explained that the hospital familiarisation sessions, which have been endorsed by the Education Department of W.A., would be presented free of charge as an integral part of the teacher s programme and at a time designated by the teacher.

All data were treated with full confidentiality and no individual, centre, department or school was identified personally. Subjects were assigned a code which appeared on records to preserve confidentiality. A systematically locked filing cabinet was used to store all documents and raw data to which only the researcher had access for the period of the study and for a subsequent five year period. Computer records could be accessed by a private PIN number only. All documents will be shredded, or deleted, at the completion of five years. Anonymity of the classroom teachers was assured and pseudonyms were used to protect the identity of the children involved in the study. On completion of the research, a video, study prints and a storybook were presented to the school library as a token of appreciation for their participation. In the interests of equity, children in the control groups also received the HFP following data collection.

4.5 Instruments

4.5.1 Medical Equipment and Procedures Test (MEPT)

In the absence of appropriate measurement devices for use with young children, a checklist called a *Medical Equipment and Procedures Test (MEPT)* was specially devised and trialed with a small group of 5-year-olds to check for intelligibility and comprehensiveness of coverage for this age group (Appendix D). Items listed in the Medical Equipment and Procedures Test and covered in the HFP included: a wheelchair, crutches, splint, bandage, sling, dressing tray, forceps, plaster cast, cervical collar, stethoscope, thermometer, blood pressure cuff, x-rays, tablets, kidney bowl, syringe-needle, nebuliser-puffer, oxygen mask, drip, urine bottle and a bed pan. These 22 items are all objects with which young children are likely to come into contact in hospital and/or at the medical clinic. The children were shown each item and asked to say what the item was

used for; to show where on the body the item was used; and finally to give the name of the item if they knew it. The children were free to handle items of equipment in recognition of the importance to young children's cognition of being able to use their senses and body action, rather than language alone (see Chapter 3 for rationale). A score was given for each correct response and any alternative responses were recorded. As a result of the trial, two items (the ophthalmoscope and the auriscope) were deleted from the test as they were found to be too difficult for this age group. None of the children knew the names of these instruments and all of the children confused these instruments with the thermometers now in common use, saying that the thermometers were used to look in their ears or eyes.

4.5.2 Health Intervention Feelings Index (HIFI)

In the absence of an appropriate test for young children, a *Health Intervention Feelings Index (HIFI)* (Appendix E) was developed and trialed with 5-year-olds to test for ease of use and intelligibility for this age group. It consisted of a simple 5 point likert scale whereby the children were asked to indicate by pointing to one of five faces (happy, OK, scared, very scared and angry), how they would feel about receiving 24 common forms of medical intervention such as having their temperature or blood pressure taken, or being given a needle (see Chapter 3 for rationale). The children responded readily and displayed no difficulty in complying with the requirements of this test. A score of 5 was given to *happy*; 4 to *OK*; 3 to *scared*; 2 to *very scared*; and 1 to *angry*. The fact that the children were able to point to a face that showed how they felt, meant that they did not have to verbalise their feelings, which seemed to assist the shy child or the child who was not confident in speaking.

4.5.3 Validity of Measurement Instruments

Although the establishment of the statistical reliability/validity of the two instruments used in this research lies outside the scope of this study, every effort was made during the development of the *Medical Equipment and Procedures Test* and the *Health Intervention Feelings Index* to ensure their reliability and validity. Borg and Gall (1989) point out that one usually carries out one's own content-validity analysis since it is concerned with a match between the content of one's course and the test being given.

Table 1

Table of Contents for MEPT

Topics	Broken Bones Aids	Broken Bones Treatment	Medical Inspection	Hospital Treatment Items	General Care Items
Items	5	4	5	5	3

Table 2

Table of Contents for HIFI

Topics	Doctor's Inspection	Broken Limbs	Post-Operative Procedures	Theatre Procedures	Common Medical Treatment
Items	6	4	4	4	5

It may be seen from Tables 1 and 2 that there was a good balance of items and that content validity of the *Medical Equipment and Procedures Test* was achieved by ensuring that there was a good balance of items and that all the items in the test were those with which children were likely to come into contact in hospital or a health clinic. They were also items to be introduced in the *Hospital Familiarisation Programme*. Similarly, the *Health Intervention Feelings Index* examined the children's feelings towards a well-balanced set of medical procedures that they were likely to encounter in a hospital or health clinic and which were to be covered in the *Hospital Familiarisation Programme*.

According to Burns (2000) reliability refers to the degree to which one can depend on a measurement, whereas validity refers to the extent to which a test measures what it purports to measure. The reliability of the responses is greatly influenced by the manner of questioning as well as the situation in which the questioning takes place. During the trials of the two instruments, every effort was made to put the children at ease, so they would feel free to respond truthfully. The researcher had visited the children on a number of occasions prior to the trials and had built up positive rapport with the children. The pre-primary centre where the measurement instruments were trialed had planned to visit an aged persons' hospital the following week, so the researcher told the children that she had brought along some things that they might see at the hospital and she wondered what they knew about them.

The trials were then conducted with each child individually during the normal course of the morning's pre-primary activities and at a time of the child's own choosing. Thus a child chose to go to the researcher to look at and talk about the things the researcher

had, in much the same way as the child might choose to join in some other activity that was available. The trials took place in a cosy corner of the playroom, behind a screen and therefore out of immediate sight, but in close proximity to the other activities. This was so the children would feel relaxed and comfortable in order to give truthful responses.

In the case of the *Medical Equipment and Procedures Test* for example, children were shown an item like the crutches. They were free to examine closely, handle or try them out; to say what they were used for; and then to say what they thought they were called. Thus a child might say that they were “sticks” or “walkers” or give the correct term of “crutches”. The children were interested in the items and responded readily and whatever response they gave was accepted and noted. If they said that they had never seen an item before and didn’t know what it was, then they were assured that that was alright and they would find out all about it later.

A similar situation pertained to the *Health Intervention Feelings Index*. For example, in response to being asked how she would feel about using a puffer, a child pointed to the happy face and commented that she had a puffer in her case because she had asthma. Alternatively, another child, on being asked to show how he would feel about being left in hospital for treatment, pointed to the angry face and stated that he was very cross when his father left him in hospital to have his tonsils out. Indeed, an indication of the children’s degree of ease was the eagerness with which many children related all kinds of anecdotes about their experiences to the researcher. Therefore, the research believes that the data are valid and that one is able to make valid inferences from the information collected.

4.5.4 Treatment — Hospital Familiarisation Programme

The treatment consisted of a presentation of the Hospital Familiarisation Programme (HFP) by a trained presenter from the Association for the Welfare of Children in Hospital (AWCH WA), followed by the opportunity to engage in socio-dramatic hospital play, provided by the teacher as an integral part of the week s programme.

The HFP has three component sections. The first section consists of an interactive group discussion where the children are encouraged to share any hospital experiences they may have had with their peers. The presenter asks if any one has ever been to hospital. Why? How did they get there? And so on. This enables the presenter to introduce the procedure that a child will encounter on being admitted to hospital, common items of medical equipment and common medical procedures.

The names and uses of items of medical equipment that children are likely to encounter in the event of medical intervention are covered. In addition, individual children are invited to demonstrate common medical procedures, or they are demonstrated on a large child-sized calico doll. These activities may be interspersed with songs or musical games.

The second component of the HFP then follows, where children are given the opportunity to engage in socio dramatic medical play with a range of medical equipment. This gives the children the opportunity to try out the wheelchair, crutches and other items and to dress up as nurses, surgeons, ambulance drivers or patients, so they can try out the

various roles for themselves and come to terms with the many items of medical equipment provided.

The third component of the HFP consists of the viewing of a video. In this video, a young child is admitted to hospital after falling out of a tree and breaking his arm. The video takes the children through such medical procedures as x-ray, anaesthesia and surgery. Interspersed with the video viewing, are opportunities for the children to act out in dramatic play the information they have just received, so they can internalise and come to terms with the common hospital procedures (Jones, 1998).

4.6 Procedure

4.6.1 Pretest

The pretest consisted of a guided interview (discussion) with the children to ascertain their knowledge and understanding of items of medical equipment such as stethoscope, thermometer and procedures such as taking a temperature or blood pressure, using the Medical Equipment and Procedures Test. In addition, the Health Intervention Feelings Index was administered to the children to ascertain how they felt about common items of medical equipment or common medical situations that they would encounter in the event of hospitalisation.

4.6.2 Treatment for Groups 1 and 3

The treatment consisted of a presentation of the Hospital Familiarisation Programme by a trained presenter from the Association for the Welfare of Children in Hospital to Group 1 (Experimental) and Group 3 (Control).

4.6.3 Post test for Groups 1, 2, 3 and 4

The posttest consisted of the administration of the Medical Equipment and Procedures Test and the Health Intervention Feelings Inventory to all four groups.

4.7 Limitations

The small sample consisted of 84 five-year-old children drawn from 4 pre-primary centres located in one large primary school in metropolitan Perth. Due to organisational constraints within the school, it was not possible to randomly assign the children to the four research groups, although initially, the children had been assigned randomly to the 4 centres. Therefore the results cannot be strictly generalised to all 5-year-olds in Perth, in Western Australia, or in rural areas or particular religious centres. However, the structure and setting of the pre-primary centres utilised in this study are similar to those found in other centres provided for 5-year-olds in metropolitan Perth. In addition, the results cannot be generalised strictly to students who are younger or older than those used in this study.

4.8 Summary

This chapter has outlined and linked the research questions to the design and procedures of the study, as well as to the literature review and theoretical rationale provided in Chapters 2 and 3 respectively. The chapter describes the location and the settings where the study was conducted, the participants, the methodology used to collect the data, the measurement instruments, as well as measures that were taken to ensure the authenticity and reliability of data. The ethical issues and limitations were also considered. The next chapter provides details of the statistical analysis of data and reports the results.

CHAPTER 5

STUDY RESULTS

5.1 Introduction

In this chapter, details of the data analysis are provided. The results of the four sample groups are discussed on both the test measures of MEPT and HIFI. Finally, the answers are provided to the two research questions under investigation on the basis of the statistical analysis of the results.

5.2 Medical Equipment and Procedures Test

The results of the four groups of children on the MEPT are summarised in the following table and then discussed in detail.

Table 3

Medical Equipment and Procedures Test Results Summary

Test 1	Experimental Group	Pre/Posttest	Significant
Test 2	Control 1	Pre/Posttest	Not Significant
Test 3	Experimental/Control 2	Post/Posttest	Significant
Test 4	Experimental/Control 3	Post/Posttest	Not Significant
Test 5	Experimental/Control 4	Post/Posttest	Significant

Experimental Group 1 Pretest/Treatment/Posttest

A one-way analysis of variance was carried out to test for significance of difference between the pre- and posttests of the Experimental Group 1 to determine the effects of the treatment on the children's knowledge of common items of medical equipment and procedures. A significant difference was found ($F = 16.067$, d.f. 1 & 40, $p < 0.01$). This means that the treatment made a difference to children's knowledge and understanding of common medical apparatus and procedures.

Control Group 2 Pretest/No treatment/Posttest

A one-way analysis of variance was carried out to test for significance of difference between the pretest and posttest of Control Group 2 to determine if the practice of having a pretest influences the results of the posttest. No significant difference was found. ($F = .075$, d.f. 1 & 40, $p = .78$). Therefore, there was no improvement in the posttest as a result of exposure to the pretest in the control group.

Comparison between the Posttests of Experimental Group 1 and Control Group 2

A one-way analysis of variance was conducted to test for significance of difference between the posttests of Groups 1 and 2 to determine the effects of the treatment. A significant difference was found ($F = 27.164$, d.f. 1 & 40, $p < 0.01$). This means that having the treatment improves the children's knowledge and understanding of medical equipment and procedures in comparison to not having any treatment.

Comparison between posttests of Experimental Group 1 and Control Group 3

A one-way analysis of variance between the posttests of Groups 1 and 3 revealed no significant difference ($F = 1.184$, d.f. 1 & 40, $p = .28$). This shows that the practice of the pretest had no effect on the children's knowledge and understanding.

Comparison between Posttests of Experimental Group 1 (Pretest/Treatment/Posttest) and Control Group 4 (No pretest/treatment/posttest)

A significant difference was found ($F = 36.067$, d.f. 1 & 40, $p < 0.01$) when a one way ANOVA was carried out. Again, this is further evidence that the treatment significantly improves the children's knowledge and understanding of medical equipment and procedures.

Thus the evidence supports the effectiveness of the treatment in increasing the knowledge of 5 year-olds of common items of medical equipment and procedures.

5.3 Health Intervention Feelings Index

Similarly, statistical analysis of the results of the four groups of children on the HIFI was carried out to determine the effect of the treatment on their feelings towards medical intervention and are summarised and reported as follows:

Table 4

Health Intervention Feelings Index Results Summary

Test 1	Experimental Group	Pre/Posttest	Not Significant
Test 2	Control 1	Pre/Posttest	Not Significant
Test 3	Experimental/Control 2	Post/Posttest	Significant
Test 4	Experimental/Control 3	Post/Posttest	Not Significant
Test 5	Experimental/Control 4	Post/Posttest	Not Significant

Comparison between the Pretest and Posttest results of Experimental Group 1 (Pre test/Treatment/Post test).

A one way ANOVA was used to determine the effect of the treatment on the feelings of the Experimental Group towards possible medical intervention. Contrary to the comparison between the Experimental Group 1 and Control Group 2, no significant difference was found in Group 1 results ($F = 2.166, d.f. 1 \text{ \& } 40, p = .149$). This means that the treatment made no significant difference to this group s feelings towards medical intervention.

Comparison between the Pretest and Posttest of Control Group 2 (Pretest/No Treatment/Posttest).

A one way ANOVA was carried out to test for significance of difference between the means of the pre- and posttest scores of Group 2 to determine whether the practice effect of doing the pre test affects the outcomes. No significant difference was found ($F = .56, d.f. 1 \text{ \& } 40, p = .814$). This means that there was no improvement in the posttest as a result of exposure to the pretest in the control group.

Comparison between posttests of Group 1 (Experimental) and Group 2 (Control).

A one way ANOVA was carried out to test for significance of difference between the means of the posttest scores of Groups 1 and 2 to determine the effect of the treatment on the children s feelings towards medical intervention. A significant difference was found. ($F = 17.049$, d.f. 1 & 40, $p < 0.001$). Therefore, the treatment positively affected the children s feelings towards possible medical intervention.

Comparison between the Posttest of Control Group 3 (No Pretest/Treatment/Posttest) and Experimental Group 1 (Pretest/Treatment/Posttest)

A one way ANOVA was used to test for significance of difference between the means of the posttest scores of Groups 1 and 3 to determine if the pretest has a practice effect on the outcomes. No significant difference was found between Groups 1 and 3. ($F = 0.671$; d.f. 1 & 40; $p = 0.45$). This means that the practice of the pretest had no effect on the children s feelings towards medical intervention.

Comparison between Experimental Group 1 (Pre test/Treatment/Post test) and Control Group 4 (No Pre test/No Treatment/Post test)

A one way ANOVA was used to test for significance of difference between the means of the post test scores of Groups 1 and 4 to determine whether the treatment had an effect on the children s feelings towards medical intervention. No significant difference was found ($F = 3.856$; d.f. 1 & 40; $p = .06$). The post treatment (after pretest) of Group 1 was no different from the posttest following no treatment of Group 4.

Therefore, although the difference in feelings towards medical equipment and procedures following the HFP was not significant within the experimental group, it was when the experimental group was compared with the control group. This indicates that young children feel more positively towards medical intervention if they have knowledge of medical equipment and procedures and the opportunity to play out fears and to try on roles.

5.4 Answers to Research Questions

On the basis of this statistical analysis of results, the following answers may be provided to the two research questions.

Question 1

What is the effect on young children s understanding of hospitalisation and medical intervention of the provision of information about medical apparatus and procedures and socio-dramatic play?

The evidence supports the view that the provision of information about medical apparatus and procedures in a manner appropriate to 5-year-olds level of development, followed by socio-dramatic play, results in an increase in their knowledge and understanding.

Question 2

What is the effect on young children s feelings towards hospitalisation and medical intervention of the provision of information about medical apparatus and procedures and socio-dramatic play?

The evidence supports the view that the provision of information and socio-dramatic medical play resulted in an increase in positive feelings towards medical equipment and procedures in the experimental group in comparison with the control group.

However, no significant difference was found in feelings towards medical equipment and procedures as a result of the treatment, within the experimental group. A possible explanation for the lack of significant increase in positive feelings of the experimental group towards medical equipment and procedures between pretests and posttests, may be that the experimental group received additional exposure to the therapeutic aspects of socio-dramatic medical play. This may have occurred because the teacher taking charge of the experimental group provided hospital play as part of her ongoing programme in the interval between pre and posttesting. This may have had a desensitising effect on the fear of the unknown of these children prior to treatment, as they had greater opportunity to feel, handle, experiment and role play with the equipment, making the increase in positive feelings from pretest to posttest less dramatic, since they were starting from a higher baseline.

5.5 Summary

This chapter has explained the statistical analysis of results of the four groups of children assigned according to a Solomon Four Group Design and related the results to the two research questions. The statistical analysis of results has confirmed that the treatment, comprising the Hospital Familiarisation Programme, significantly influenced young children's knowledge and understanding of medical equipment and procedures and had a positive effect on their feelings towards medical intervention. A possible explanation for the lack of significant effect of the HFP within the experimental group was discussed. Further discussion of the results of the study follows in Chapter 6.

CHAPTER 6

DISCUSSION

6.1 Introduction

Chapter 6 discusses the outcomes of this research investigation and relates them to the theoretical framework provided in Chapter 3. The study results are also discussed in relation to the literature reviewed in Chapter 2. Implications are then drawn for the presentation and content of the Hospital Familiarisation Programme, as well as for current practice and future research.

6.2 Relationship of Results to Cognitive Theories

This study supports the view that when young children are given information about common medical equipment and procedures, in a manner that is appropriate to their level of development, their knowledge and understanding is significantly increased. According to Piagetian theory, the children are able to use the processes of assimilation and accommodation to construct meaning from their environment and to clarify any misconceptions that they may hold. Piaget (1951) also points out that young preoperational children's preconceptions are influenced primarily by their own past experiences and observations of the world. Many examples of this phenomenon were observed during the pretests of common items of medical equipment and procedures. Several children confused the thermometer with an auriscope, stating that it was a light for the doctor to look in your ears. Certainly, the thermometers now in general use, do look similar to the auriscope.

The forceps were frequently called clippers or tweezers which children said were used for pulling out hairs, splinters or bee stings. One child said that the syringe/needle was used for taking drugs. Creative uses were also given for the urine bottle — a jug or vase for flowers; and the bedpan — a baby's bath or a foot warmer. Clearly, these children were constructing their own meaning on the basis of their past experiences and/or observations.

In being given the opportunity to hold, feel, see, listen to, and place on the body (of the doll or a colleague) the various items of medical equipment, the children were able to physically experience, or make more fully their own, the various medical items and procedures (Bruner, 1972). In addition, the presenter and more knowledgeable peers in the group were able to scaffold the children's knowledge and understanding by discussing medical procedures and equipment (Vygotsky, 1978). Further scaffolding of the children's knowledge could take place as the teacher showed the video *Let's Play Hospitals* or read the story *Joel Goes to Hospital*.

6.3 Relationship of Results to Other Studies

The findings are in general consistent with those of Mather (1984) who found an increase in knowledge of medical equipment after exposure to a preparation programme. However, it must be remembered that Mather's sample was small and there was no control group. Similarly Jones (1998) found that children who had been given an information session on medical equipment and procedures scored higher on knowledge of pieces of medical equipment than those who had not received information, although again, it is acknowledged that the sample was small and there were some confounding variables that may have jeopardised the internal validity. The experimental group had been exposed to

community services such as St John s Ambulance, and consequently were more likely to have seen and discussed medical equipment such as a stethoscope, thermometer, blood pressure cuff and nebuliser mask.

The findings are also consistent with those of Siaw, Stephens and Holmes (1986) and Gillis (1990) who showed that young children learned certain types of observational information, such as where an instrument is used on the body, rather than the name of the instrument, or its function. In the present study, it is interesting to note that in a few instances, some misconceptions persisted following the HFP. For example, in the posttest of the experimental group, one child said that the oxygen mask is used to see if you are dead or not, while another child said that the drip is used to get blood out. It is reasonable to assume that these children may have lost concentration or attention when these items were being explored during the session, or that further exposure is needed to overcome already entrenched notions.

The findings are further supported by the study of Pomarico, Marsh and Doubrava, (1979) which showed that children who were prepared for hospitalisation by viewing pictures and slides featuring hospital procedures, followed by discussion and hospital tours, showed less anxiety and greater cooperation than those who had not been so prepared.

This study also supports a reduction in negative feelings regarding medical procedures following the information and socio-dramatic play sessions. In the socio-dramatic hospital play, the children were able to act out in their own time and manner, people in real life (whether that be doctor, nurse or patient), thereby trying on the roles for size. They were able to use the various items of medical equipment in a non-threatening

and safe environment, so they could internalise the various medical concepts. Children could master any fears that they may have had concerning medical procedures, because they were in control of the situation, rather than others having control over them, as when they are the patient (Smilansky & Shefatya, 1990). By re-enacting any painful experiences that they may have had, the children would have been able to assimilate them and thereby reduce the intensity of their feelings (Schaeffer, 1993: Santen & Feldman, 1994), gaining power over their fears, and consequently coping better with the potential stresses of hospitalisation such as anxiety caused by the unknown (Robinson et al., 1991).

At the same time, it must be kept in mind that for some young children, particularly boastful 5-year-old boys, there could be a difference between their projected reaction given to the HIFI and the actual reaction when faced with the reality (Woolfolk, 1987). This could be seen in the case of the boastful 5-year-old who confidently asserted that he would be happy to be left in hospital, or to have a needle, or an operation. When confronted with the real situation, the child's reaction could be quite different. It is very difficult for a preoperational thinker to anticipate how s/he would feel if s/he has not had any experience of the situation in question (See Section 3.1.1).

6.4 Implications

6.4.1 Hospital Familiarisation Model

On the basis of these research findings (see Chapter 5) and supported by the literature review and theoretical framework (see Chapters 2 and 3), it is recommended that the Hospital Familiarisation Programme (HFP) continue to be presented in early childhood

centres. Indeed, it is recommended that presentations be expanded to encompass more of the state s children.

Further, to maximise the effectiveness of the HFP with young children, it is recommended that the HFP comprise the following three phases and be presented in a manner appropriate to their developmental level as follows:

6.4.2 Presentation of Common Items of Medical Equipment and Procedures

(Phase 1)

In order to prevent misconceptions as young children search to gain meaning from their environment as with the sore hand incident cited (3.1), or fear of the unknown, it is important to familiarise children with items of medical equipment that they are likely to encounter in the event of medical intervention. The presentation needs to be a short, maximally interactive and hands on session. No more than 30 minutes is recommended for a group session with 5-year-olds for maximum input and to ensure that the children s attention spans and interest levels are not exceeded. The actual duration and shape of the session will of course be determined by the trained presenter responding to cues given by the children, rather than adhering to any preconceived format.

The information should be given in a light-hearted and playful, but not frivolous, manner, with ample opportunity for children to dress up, role play and relate their experiences and observations (see Chapters 2 and 3). Items of equipment should be handled by children and procedures demonstrated on children who volunteer and on the life-sized doll that should display the dominant physical features of the group for maximum

identification. In a remote Aboriginal school for example, the persona doll should display Aboriginal features rather than white Caucasian ones.

6.4.3 Hospital Socio-dramatic Play (Phase 2)

Following the presentation, in Phase 2, children should be permitted to freely engage in medical play. A hospital play area should be set up in the centre/classroom and be available to all children for as long as they are interested, but for at least one week. This is to ensure that every child has sufficient and adequate opportunity to use the medical equipment, to take on the various medical roles and to act out any scenarios that have special meaning for them. To facilitate this rich socio-dramatic play, it is recommended that the hire of the medical kit from the Association for the Welfare of Children in Hospital be mandatory for any school wishing to receive the HFP presentation. The kit contains all the medical equipment and dress ups that children are likely to encounter in the event of hospitalisation and so facilitates the proper provision for rich, socio-dramatic medical play with authentic materials, particularly for teachers who do not have access to such items and given the high expense involved in the purchase of medical equipment.

6.4.4 Observations and Follow-up by Teachers (Phase 3)

Partnerships need to be forged with teachers who know their children intimately and are best placed to meet their individual needs during the normal course of their ongoing programme. Therefore, it is recommended that in this third phase, teachers observe their children engaged in the socio-dramatic medical play, so they can identify any misconceptions that children may hold, or fears requiring further therapy.

Observed misconceptions may be worked through with individual children as they engage in the ongoing programme. Fears observed may be addressed by the provision of further therapy in the form of puppet plays (psycho-drama), or story books (bibliotherapy), followed by discussion (Butterworth & Fulmer, 1993).

6.4.5 Implications for Expansion

Given the effectiveness of the HFP, it is recommended that it be taken where possible to rural and remote communities. Some modification of content would be required to ensure coverage of the medical ailments most relevant to the community and to accommodate the particular geographical location. For example, in a remote Aboriginal community, respiratory, nutritional and skin diseases are more common; visits are likely to be to the local clinic rather than medical centre; and hospital emergency is likely to entail a flight by flying doctor service to the nearest regional hospital.

6.4.6 Implications for Further Practice

Given the emphasis in the literature on the parents influence on young hospitalised children s anxiety levels (See Section 2.3), it is recommended that:

1. The Association for the Welfare of Children in Hospital set up a help line in order to provide a sympathetic ear and comforting support to parents. Although the Association for the Welfare of Children in Hospital could not provide medical information, they could disseminate research information and show parents that they understand and care.
2. The Association for the Welfare of Children in Hospital set up a web page so that members of the public could readily obtain information on their services and support if necessary.

3. Similarly, brochures on the functions and services of the Association for the Welfare of Children in Hospital, and in particular, details of the HFP be distributed through medical clinics, infant health clinics, child care centres, toy libraries and local council offices.

6.4.7 Implications for Further Research

In order to facilitate further generalisability of results, this study should be replicated with other larger, randomly assigned samples from different parts of the metropolitan area, as well as rural and remote areas. However, it is acknowledged that the current small numbers in some pre-primary centres due to the change in school entry age and the structure of pre-primary centres within schools throughout the vast state of Western Australia, makes the logistics of such a study difficult.

As the HFP becomes more widespread in schools throughout Western Australia, it may be possible to study children on initial entry to hospital and to track back to ascertain whether or not they had received the HFP. Again, the challenge would be to control all the intervening variables (for example, degree of parental anxiety, individual temperament and other medical experiences).

It is further recommended that a Rasch Measurement Model be used to analyse the Medical Equipment and Procedures Test and the Health Intervention Feelings Index with samples in excess of 400 in order to check the reliability and construct validity of the data collected (Andrich, Sheridan, Lyne & Luo, 2003).

6.5 Conclusion

It is important that all those working with young children validate their feelings and emotions. At the same time, professionals who truly care about young children's wellbeing will take advantage of the window of opportunity that exists during the early childhood years to build resiliency and protective behaviours, in order to prevent, minimise or overcome the damaging effects of adversity in their future lives (Seok, 1997).

The HFP, grounded as it is in early childhood development and learning theory, is designed to develop those social and emotional skills necessary to empower young children to gain control over their feelings in relation to medical intervention.

To this end, this research study has established that the provision of information about medical apparatus and procedures, in a manner appropriate to young children's development, followed by socio-dramatic medical play, significantly increases children's understanding of medical equipment and procedures and results in more positive feelings towards possible medical intervention in the future. In addition, recommendations have been made to better incorporate current developmental theory into the Hospital Familiarisation Programme model in order to maximise its effectiveness. It is hoped that this study is one more step in the direction of preventing and/or reducing young children's psychological suffering (particularly in emergency medical situations) due to lack of adequate and appropriate preparation. At the same time, it is hoped that the enhancement of young children's emotional skills will contribute in some small way to their ability to meet life's challenges in the future.

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APPENDIX A
PRINCIPAL S AGREEMENT

Dear Sir/ Madam,

As a Masters student of Edith Cowan University, I am seeking your permission to include your pre-primary children in a research study to investigate the attitudes and understanding of young children in regard to going to hospital and common medical procedures. This information will help us to ascertain the most effective way to prepare children for possible medical intervention.

The study will involve the researcher, an experienced early childhood educator, speaking with the children during the normal course of their day's activities about going to hospital and usual medical procedures such as taking a temperature or listening to a heartbeat.

In addition, the groups will receive an enjoyable and interactive hospital familiarisation session by a trained presenter from the Association for the Welfare of Children in Hospital. This session, which takes approximately half an hour and is endorsed by the Education Department of W.A., will be presented free of charge as an integral part of the teacher's programme, at a time designated by the teacher.

As a token of appreciation for your participation in this research project, a copy of the materials used in the session (i.e. video, study prints and story book) will be presented to your school library and you will receive a copy of the general findings of the study at its conclusion.

However, the signed permission of parents will also be obtained prior to the inclusion of their children in the study; clearance will be obtained from the University Ethics Committee; all data will be treated in confidence with no child or centre identifiable by name; and parents will retain the right to withdraw their child from the study at any time without penalty.

I do hope that you will be able to cooperate in this important study which has potential benefits for children worldwide. Should you require any further information on any aspects of this study, please feel free to contact my Supervisor, Dr Dawn Butterworth on [REDACTED].

Yours sincerely,

Ms Lis Mathiasen

(Contact telephone number: [REDACTED])

APPENDIX B

PRE-PRIMARY TEACHER S AGREEMENT

Dear Teacher,

As a Masters student of Edith Cowan University, I am seeking your permission to include your pre-primary children in a research study to investigate the attitudes and understanding of young children in regard to going to hospital and common medical procedures. This information will help us to ascertain the most effective way to prepare children for possible medical intervention.

The study will involve the researcher, an experienced early childhood educator, speaking with the children on an individual basis during the course of their day's activities about going to hospital and common medical procedures such as taking a temperature or listening to a heartbeat.

In addition, the children will receive an enjoyable and interactive hospital familiarisation session by a trained presenter from the Association for the Welfare of Children in Hospital. This session, which takes approximately half an hour and is endorsed by the Education Department of W.A., will be presented free of charge as an integral part of your programme, at a time designated by you.

As a token of appreciation for your participation in this research study, a copy of the materials used in the session (i.e. video, study prints and story book) will be presented to your school library and you will receive a copy of the general findings of the study at its conclusion.

The signed permission of your parents will be obtained prior to the inclusion of their children in the study; clearance will be obtained from your principal and the University Ethics Committee; all data will be treated in confidence with no child or centre identifiable by name; and parents will retain the right to withdraw their child from the study at any time without penalty.

I do hope that you will be able to cooperate in this important study which has potential benefits for children worldwide. Should you require any further information on any aspects of this study, please feel free to contact my Supervisor, Dr Dawn Butterworth on [REDACTED]

Yours sincerely,

Ms Lis Mathiasen

(Contact telephone number: [REDACTED])

APPENDIX C
PARENTAL AGREEMENT

Dear Parent/Guardian,

As a Masters student of Edith Cowan University, I am seeking your permission to include your pre-primary child in a research study to investigate young children's attitudes and understanding in regard to receiving medical attention, either in the doctor's surgery or hospital. This information will help us to work out the best way to prepare young children for possible medical treatment, to avoid any unnecessary fear and anxiety.

The study will involve the researcher, who is an experienced early childhood educator, speaking with your child in a hospital play situation for about 15 minutes during the normal course of the day's activities at pre-primary.

In addition, each group of children will receive an enjoyable and interactive hospital familiarisation session by a trained presenter from the Association for the Welfare of Children in Hospital. This session, which takes approximately half an hour and is endorsed by the Education Department of W.A., will be presented free of charge as an integral part of the teacher's programme, at a time designated by the teacher.

All information collected will remain strictly confidential. Children's names will not be used and the pre-primary/school will not be identified. Your child is free to withdraw from the study at any time without penalty.

If you agree to your child being included in the study, I would be grateful if you would sign the agreement slip below and return it to the classroom teacher as soon as possible, please. If you would like to discuss the project further, please let me know so that

we can arrange a suitable time that is convenient to you, or alternatively you may contact me by telephone on [REDACTED] or my university supervisor (Dr Dawn Butterworth) on [REDACTED]. We would be happy to discuss any concerns that you may have.

Yours sincerely,

Ms Lis Mathiasen

(Contact telephone number: [REDACTED])

APPENDIX C cont.

PARENTAL AGREEMENT

Form No. (-----)

I _____(the parent) have been informed about this research project and any questions that I have asked have been answered to my satisfaction. I agree to my child taking part in this study, realising that I may withdraw my permission at any time. I understand that all information collected will be treated in the strictest confidence and that anonymity will be maintained. I agree that the research data gathered for this study may be published as long as my child is not identifiable.

Signature of Parent/Guardian_____Date_____

Signature of Researcher_____Date_____

APPENDIX D

Medical Equipment & Procedures Test (MEPT)

Instrument	Purpose	How used	Name	Comment
Wheelchair				
Crutches				
Splint				
Bandage				
Sling				
Dressing tray				
Forceps				
Plaster cast				
Cervical collar				
Tongue depressor				
Stethoscope				
Thermometer				
Blood pressure cuff				
X-rays				
Tablets				
Kidney bowl				
Syringe-needle				
Nebuliser-puffer				
Oxygen mask				
Drip				
Urine bottle				
Bed pan				

Subject's No: _____

Group: _____

APPENDIX E

Health Intervention Feelings Index

	Happy	OK	Scared	V. Scared	Angry	Comment
Doctor's visit						
Looking in mouth						
Taking temperature						
Listening to chest/heart						
Taking blood pressure						
Hammer-testing reflexes						
Giving needle						
Setting broken bone						
Bandaging						
X-rays						
Going to hospital						
Staying in hospital						
Going to theatre						
Having anaesthetic						
Having operation						
Taking medicine						
Using bedpan/bottle						
Having drip						
Being given oxygen						
Arm/leg in sling						
Arm/leg in plaster						
Using crutches						
Using wheel chair						

Subject's No: _____

Group: _____