CHAPTER 4

FINDINGS AND DISCUSSION

This descriptive correlational study was undertaken to describe the amount of medical fear among hospitalized Chinese school-age children; and to determine whether the medical fear could be predicted by selected factors including child's age, sex, type of illness and location of family home. A sample of one hundred was drawn from hospitalized six to 12 years old children in the first, second and third hospitals affiliated to Hunan Medical University. The period of data collection was during December 1996 to January 1997. The findings are presented in three parts with tables and descriptions. Part I is the description of subjects. Part II is the presentation of findings, and part III is the discussion.

Part I Description of Subjects

1. Description of Children

The purposive sample was comprised of 100 children. They came from anywhere within the Hunan province, China. Their characteristics are presented in Table 1 and Table 2.

Table 1 Mean, SD, Frequency and Percentage of Subjects' Age, Sex, Living Area of Family, Length of Hospitalization and Previous Admissions (N=100)

Characteristics	Frequency	Percentage	Mean	SD
Age (years)				
			8.41	1.58
6-7	12	12.0		
7-8	16	16.0		
8-9	25	25.0		
8-10	17	17.0		
10-11	14	14.0		
11-12	14	14.0		
Sex				
Boy	64	64.0		
Girl	36	36.0		
Living area of family				
Urban	48	48.0		
Rural	52	52.0		
Legnth of hospitalization (days)			9.83	7.92
Previous admission (times)			1.26	2.41
Acute			0.78	1.44
Chronic			1.86	3.17

It can be seen in Table 1, the age of this group ranged from six to 12 years with a mean of 8.41 (SD= 1.58). There were 64 percent boys and 52 percent rural children. The mean length of hospitalization was 9.83 (SD=7.92). The mean previous admission was 1.26 (SD=2.41) for the whole group; 0.78 (SD=1.44) for acutely ill children and 1.86 (SD=3.17) for chronically ill children.

Table 2 Frequency and Percentage of Subjects' Type of Illness (N=100)

Type of illness	Frequency	Percentage
Acute (N=56)		
Acute glomerulonephritis	27	48.2
Acute infection (N=20)		
Pneumonia	10	17.8
Lymphnoditis	5	9.0
Scarlet fever	3	5.4
Myocarditis	2	3.5
Accidental injury (N=6)		
Fracture	4	7.0
Head injury	2	3.5
Bleeding (N=3)		
Allergic purpura	2	3.5
GI bleeding	1	1.8
Chronic (N=44)		
Congenital heart disease	24	54.5
Spinal bifida	3	6.8
Cancer	3	6.8
Urethral malformation	2	4.5
Nephrotic syndrome	2	4.5
Tumor	2	4.5
Scar	2	4.5
Idiopathic thrombocy-topenic purpura	1	2.3
Rheumatic heart disease	1	2.3
Diabetes mellitus	1	2.3
Cardiomyopathy	1	2.3
Aplastic anemia	1	2.3
Bronchiectasis	1	2.3

As shown in Table 2, the subjects were diagnosed with various diseases and 56 percent of them were acutely ill and 44 percent of them were chronically ill. Among the acute illnesses, 48.2 percent was acute glomerulonephritis (AGN) and 54.5 percent of chronic illnesses was congenital heart disease (CHD).

2. Description of parents

Demographic data of the parents are presented in Table 3 and Table 4.

Table 3 Mean, SD, Frequency and percentage of Fathers' Characteristics (N=100)

Characteristics	Range	Mean	SD	Frequency	Percentage
Age (years)	27-50	35.82	4.67		
Educational Level					
Primary school				12	12.0
Secondary school				44	44.0
High school				30	30.0
College or above				14	14.0
Occupation					
Farmer				49	49.0
General labor				17	17.0
Government position				12	12.0
Businessman				11	11.0
Academic				10	10.0
Unemployed				1	1.0

Table 3 shows that the age of fathers ranged from 27 to 50 years and the mean was 35.82 (SD=4.67). Forty percent of them finished secondary school and 49.0 percent of them were farmers.

Table 4 Mean, SD, Frequency and Percentage of Mothers' Characteristics (N=100)

Characteristics	Range	Mean	SD	Frequency	Percentage
Age (years)					
	26-43	32.97	3.42		
Educational Level					
Primary school				20	20.0
Secondary school				51	51.0
High school				23	23.0
College or above				6	6.0
Occupation					
Farmer				50	50.0
General labor				21	21.0
Housewife				14	14.0
Government position				10	10.0
Businesswoman				4	4.0
Academic				2	2.0

As indicated in Table four, the age of mothers ranged from 26 to 43 years and the mean was 32.97 (SD=3.42). Fifty-one percent of them completed secondary school and 50 percent of them were farmers.

Part II Presentation of Findings

1. The amount of medical fear among hospitalized Chinese school-age children.

The amount of medical fear among hospitalized school-age children is shown in Table five to Table seven.

Table 5 Mean and SD of Subjects' Medical Fear

Variables	Mean	SD	Amount
Procedural fear	7.26	1.83	Low
Environmental fear	8.28	1.90	Moderate
Intrapersonal fear	6.67	1.71	Moderate
Interpersonal fear	7.20	2.01	Moderate
Total	29.41	5.28	Moderate

As shown in Table five, the overall mean score was 29.41 (SD=5.28), indicating a moderate amount of medical fear in the subjects. The moderate-fear responses were also shown in all dimensions except the procedural subscale which was low.

Table 6 Mean and SD of Child's Medical Fear Scale Items

Items	Mean	SD	Amount
Procedural fear			
Getting a shot	1.81	0.75	Moderate
Having finger stuck	1.51	0.66	Low
Doctor putting a tongue blade in my mouth	1.50	0.70	Low
Taking medication	1.23	0.51	Low
Doctor/nurse looking down my throat	1.21	0.50	Low
Environmental fear			
Being away from family	2.51	0.69	High
Might die	2.43	0.78	High
Having to stay a long time	1.87	0.73	Moderate
Being in hospital	1.46	0.66	Low
Intrapersonal fear			
Hurting myself	1.94	0.76	Moderate
Seeing blood come out of me	1.86	0.78	Moderate
Throwing up	1.54	0.70	Low
Crying when I get hurt	1.35	0.61	Low
Interpersonal fear			
Missing school for many days	2.07	0.77	Moderate
My friend/family catching something I have if they come to see me.	1.94	0.79	Moderate
The nurse/doctor telling me something is wrong	1.64	0.69	Low
The doctor/nurse not telling me what they are going to do	1.55	0.66	Low

As demonstrated in Table six, in procedural fears the children only reported moderate fear to getting a shot and low amount of fear to the other four procedures. In environmental fears, the children had a high amount of fear of being away from family, and dying; a moderate fear to having to stay in hospital for a long time and a low fear of being in hospital. In intrapersonal fears, the children expressed moderate fear to hurting and seeing blood come out of me, low fear to 'thowing up' and 'cry when I get hurt'. In interpersonal fears, the children exhibited moderate fear to missing school for many days and to my friend/family catching something I have if they come to see me; a low amount of fear to the nurse or doctor telling me something is wrong with me and the doctor and nurse not telling me what they are going to do to me.

Table 7 Frequency and Percentage of Subjects' Overall Amount of Medical Fear (N=100)

Amount of Fear	Number of Children	Percentage
Low (17.0 -28.33)	45	45.0
Moderate (28.34-39.66)	50	50.0
High (39.67-51.0)	5	5.0

Table seven displays that fifty percent of the subjects reported a moderate amount of fear. Forty-five percent of them had low amount of fear. Only 5 percent of these children reported a high amount of medical fear.

2. Prediction of child's medical fear by selected factors including child's age, sex, type of illness and living area of family.

A stepwise multiple regression analysis was used to test the predication of child's medical fear by selected factors including child's age, sex, type of illness and location of the family home. In the multiple regression analysis, the dependent variables were the child's overall medical fear and its four subscalss (procedural, environmental, intrapersonal and interpersonal fear). The independent variables were the child's age, sex, type of illness and location of the family home.

Table 8 Stepwise Multiple Regression of Independent Variables on Overall Medical Fear among Hospitalized Chinese School-age Children

IDVs	B	Beta	T
Age	0.68	0.20	2.147*
		R=0.20 R*R=0.041	
	Intercept=23.70	Adjusted R*R=0.032	

F=4.61 Sig F=0.034 *P<0.05

Table eight describes the result of stepwise multiple regression of independent variables on overall child's medical fear. Only one independent variable (age) entered the equation. The multiple correlation for association of age and overall child's medial fear was found to be significant (R=0.20, P<0.05). Age accounted for 4.1 percent of variance of overall medical fear. Therefore age was a significant predictor of overall medical fear (B=0.68, P<0.05). In addition, the findings indicated that the older children reported a higher amount of medical fear than the younger children.

Table 9 Stepwise Multiple Regression of Independent Variables on Procedural Fear among Hospitalized Chinese School-age Children

IDVS	B	Beta	T
Sex	0.8754	0.2202	2.357*
	R=0.22	R*R=0.049	
Intercept=6.97	Adjusted R*R=0.04		

F=5.556 Sig F=0.0202 *P<0.05

The result of stepwise multiple regression analysis of independent variable on procedural fear is presented in Table nine. For this stepwise multiple regression analysis one independent variable (gender) entered the equation. The multiple correlation for association of gender and procedural fear was found to be significant (R=0.22, P<0.05). Sex of the child accounted for 4.9 percent of variance of procedural fear. Therefore, the child's sex was a significant predictor of procedural fear (B=0.874 P<0.05). In addition, the labeled value of girls was one and that of boys was zero, therefore, the findings indicated that girls reported higher amount of procedural fear than boys.

Table 10 Stepwise Multiple Regression of Independent Variables on Environmental Fear among Hospitalized Chinese School-age Children

IDVS	B	Beta	T
Age	0.293	0.248	2.711**
Location of family home	0.686	0.341	2.012*
	R=0.31	R*R=0.096	
Intercept=5.47		Adjusted R*R=0.079	

F=5.74 Sig F= 0.0043 *P<0.05 **P<0.01

The result of stepwise multiple regression analysis of independent variables on environmental fear is reported in Table 10. For this stepwise multiple regression analysis, two independent variables (age and living area of family) entered the equation. The multiple correlation was found to be significant (R=0.31, P<0.01). Age and location of family home accounted for 9.6 percent of variance of environmental fear. Therefore, age and location of family home were significant predictors of the child's environmental fear (Age: B=0.293, P<0.01; Location of family home: B=0.686, P<0.05). In addition, the labeled value of urban children was one and that of rural children was zero, therefore, the findings indicated that the older urban children reported a higher amount of environmental fear than younger rural children.

Table 11 Stepwise Multiple Regression of Independent Variables on Interpersonal Fear among Hospitalized Chinese School-age children

IDVs	B	Beta	T
Age	0.3716	0.2957	3.228**
Type of illness	-0.7586	-0.1987	-2.072*
	R=0.389	R*R=0.152	
Intercept=4.403	Adjusted	R*R=0.136	

F=9.666 Sig F=0.0001 *P<0.05 **P<0.01

The result of stepwise multiple regression analysis of independent variables on interpersonal fear is shown in Table 11. For this stepwise multiple regression analysis, two independent variable (type of illness and age) entered the equation. The multiple correlation was found to be significant (R=0.389, P<0.001). Type of illness and age accounted for 15.28 percent of variance of interpersonal fear. Therefore, type of illness and age were significant predictors of the child's interpersonal fear (Age: B=0.3715, P<0.01, type of illness: B=-0.759, P<0.05). In addition, the labeled value of chronic illness children was one and that of acute illness was zero. Therefore, the findings indicated that older children with acute illness reported a higher amount of interpersonal fear than younger children with chronic illness.

For the regression analysis of independent variables on intrapersonal fear there were no factors entering the equation.

Discussion

The discussion of this study is presented in two sections: discussion of the findings related to the first objective, and discussion of the findings related to the second objective. .

Findings related to Research Objective one.

Research objective one: To describe the amount of medical fear among hospitalized Chinese school-age children.

In total the amount of medical fear was moderate among hospitalized Chinese school-age children. Forty-five percent of the children recalled a low amount of medical fear and fifty percent of them reported a moderate amount of medical fear. There are two possible explanations for the findings. The first possibility is related to the developmental stage of school-age children. Children of this age are in a period of industry versus inferiority (Erickson, 1963, cited in Shaffer, 1985). For the sake of industry, they are struggling for independence and possibly want to embrace and express their fear and yet they also use denial to answer the questions (Smith, Goodman, Ramsey, Pasternack, 1982). The second possibility may be associated with the fact that children are accompanied by their parents in the settings and the strong parental support is provided. Parental absence has been

postulated as an important reason of the child's untoward reaction to hospitalization (Lambert, 1984).

Insofar as subscales, they recalled a moderate amount of environmental fear, intrapersonal fear and interpersonal fear, and a low amount of procedural fear.

Although previous empirical data yielded that intrusive procedures were the most common theme of medical fear among school-age children, the procedural fear was the least evoked in this study. Perhaps the medical procedures listed in the scale mainly referred to the more general aspects procedures as represented in clinical visits and they did not reflect adequately the intrusive, painful procedures which the hospitalized children really suffered. Possibly the children are apt to deny these fears due to their belief in the association of illness and medical procedures.

Notably, 'getting a shot' seems to be more fearful to these children than the other four procedures. One possible interpretation of this finding is offered as the following. According to the information gained in the interview, whether the children feared, and how much they feared any procedure mainly depended on the intensity of its evoked pain and uneasiness. Since injection is inherent with pain and frequently administrated in hospitalized children, the moderate fear to getting a shot is warranted.

However, it is of interest to find that these children

usually reported that having their 'finger stuck' was slightly painful or nonpainful and showed low fear to it. In addition, it is not surprising to find the low-fear response to such procedures as putting a tongue blade in mouth, taking medications and looking down my throat. The children might have learned that these procedures are relatively nonpainful and nontraumatic. This finding is consistent with the study of Hart and Bossert (1994). It corresponds that the cognitive ability of school-age children enables them to obtain understanding of medical experiences.

Among environmental fears, there was high amount of fear stated of 'being away from family', and 'might die'; and moderate fear to 'having to stay in hospital a long time'; and low fear to 'being in hospital'.

Fear of being away from the family was extremely high in this study, despite the theoretical belief that the family does not play an important role for school-age children as compared with toddler and preschoolers (Erickson, 1963, cited in Shaffer, 1985). This result is consistent with the empirical finding in Hart and Bossert's study (1994) and holds true that school-age children are highly dependent on family. The subjects usually perceived loneliness, insecurity, missing home, dull and the like from being away from family. It is plausible that the very nature of hospital environment may foster dependence (Lambert, 1984). The stress evoked by

illness and hospitalization enhance the child's needs of parental attachment (Wong & Wilson, 1995) especially as comfort from anxiety comes from physical closeness with familiar people (Wong & Wilson, 1995). Meanwhile, the developmental regression associated with hospitalization possibly increase their need for parental security and guidance as well. Separation from peers and teachers further necessitates the fundamental role of parents in providing dependence. Therefore, the hospitalized children call for the family to provide physical needs, love, recognition, security, strength and worth.

As self-preservation is of paramount concern for the latency children (Frued, 1963, cited in Strickland, Leeper, Jessee, & Hudson, 1989), it is not surprising to find that fear of death was also high. But it does not correspond with the finding of Hart and Bossert (1994) in which death elicited relatively low fear. The subjects were afraid either because they have known that death is the end of life and it is impossible to relive or because of the specific characteristics of death such as sadness, scary, dark, cold, immobility, burial, and graveyards. This highlights that these children may have learned the irreversibility, permanency and inevitability and grief of death. Furthermore, they are able to associate illness and pain with death (Wong & Wilson, 1995).

It is interesting to find the lowly endorsed fear to being in hospital. Although they hated the untoward nature of hospitalization (pain, missing school, loss of control, etc), they tended to focus on the positive outcomes of hospitalization (treatment of disease, parental company accompany of parents, etc.). Interestingly, when asked for the reason why they were not afraid of being in hospital, some children said hospitalization was enjoyable because they could be free from stressful study temporarily, make friends and play with other children. This implies that, on one hand, some children may have applied denial to answer the question. On the other hand, it could imply that hospitalization is a constructive experience for children.

Whereas, compared with the low fear of being in hospital, having to stay in hospital for a long time was moderately fearful. Given the heightened untoward nature of hospitalization due to prolonged stay and the assigned tasks of school-age children to establish industry, this finding is warranted. This finding sheds light on the fact that school-age children's cognitive processing is capable of projecting into the future and is concerned more with the proceeding potential threat of illness and hospitalization than the present situation.

In intrapersonal fears, the children expressed moderate fear to two items, 'hurting myself' and 'seeing blood

come out of me'; and low fear to 'throwing up' and 'crying when getting hurt'.

The large fear of hurting and bleeding was because the subjects usually could perceive pain and impending dangers or other deleterious effects from these encounters. Additionally, misconceptions may play a part in the child's response to these two fears. For example, when asked for the reasons why they are afraid a lot of seeing blood come out of them, their responses indicated their perception that blood was too important to loose, even a little amount. Reasonably, this misconception would increase child's fear of bleeding.

'Throwing' up was low fearful to these children. Perhaps, from personal experience, the school-age children had learned that vomiting is not an event generating great fear. When asking for the reasons why the children were not afraid of throwing up, they said it did not result in pain and serious consequences, and they could even feel more comfortable after throwing up.

Contrary to the belief that the school-age children strive for industry and independence and need to maintain emotional control (Smith, Goodman, Ramsey, & Pasternack, 1982) most of the children in this study considered crying as usual and normal and reported a relatively low level of fear about crying when getting hurt. Maybe it is related to the common showing of crying on mass media that models them to this

behavior to some degree, and the accompanied developmental regression makes school-age children think crying is warranted. It is also feasible that crying is a prominent coping strategy of Chinese school-age children by virtue of the attribution of Chinese parent-child interaction. There is lack of a verbal emotional expression between parents and children, even in the situation of hospitalization (Dong, Yang, & Ollendick, 1993). This may be likely to cause the children to master crying as a means of releasing emotion, indicating pain and gaining more concern and love from parents as well.

In interpersonal fears, the children indicated low fear to items in terms of the interaction with personnel (the nurse/doctor telling me something is wrong with me; the doctor/nurse not telling me what they are going to do) and moderate fear to 'missing school for many days' and 'my family/friend catching something I have if they come to see me'.

The relatively higher fear of missing school for many days lends support to the Erickson's psychological staging of industry versus inferiority (Erickson, 1963). The school-age children set importance on their accomplishment in academic achievement to establish industry (Erickson, 1963). They fear missing school because it is related to failing to catch up with the class, future scholastic achievement and future

employment. It is also noteworthy that the result is probably marked by the educational practices in China. Chen and Uttal (1988) documented the importance of education and the role of examination as the primary path of upward mobility in contemporary China. The idea has been seeded in the minds of many school-age children. Thus, it is understandable that they exhibited moderate fear of missing school.

A moderate response was indicated to the fear of "my family/friend catching something I have if they come to see me in the hospital". The main reasons for their expressed fear were the untoward nature of illness or concern that no one would be able to take care of them if the family caught something he/she had and became sick. It reveals that the school-age children vaguely recognize the concept of illness. It also reflects the high reliance of children on family in another perspective.

The children showed low fear to the two items "the Dr will me tell something is wrong with me" and "the Dr will not tell me what he is going to do with me. The finding is not congruent with the study of Timmerman (1983) in which the unknown was extremely fearful. It also fails to correspond with the finding of Hart and Bossert (1994) that 'being told something is wrong' was highly feared. The apparent contrary result maybe related to the characteristic of Chinese personnel-patient interaction. In China, the patients are

usually dependent on personnel and passive receivers of health care. The subjects usually demonstrated indifferent attitudes to these transactions with personnel, and therefore, alleviated the fear produced by the interaction.

Findings Related to Research Objective 2.

Research objective 2: To determine whether the medical fear could be predicted by selected factors including child's age, sex, type of illness and living area of family among hospitalized Chinese school-age children.

Unexpectedly, age was a positive predictor of child's overall medical fear and its subconcepts, environmental fear and interpersonal fear, among hospitalized Chinese school-age children. The older the children, the higher amount of overall medical fear, environmental fear and interpersonal fear. This result is inconsistent with several studies (Broome & Hellier, 1987; Dolgin, Phipps, Harrow, & Zelter, 1990; Hart & Bossert, 1994; Robert, Wurtele, Boone, Ginther, & Elkins, 1981). But it sustains the results of Aho and Erickson (1985). One possible explanation is that according to learning theory, medical fear can be learned. The older children may have had more opportunity to learn to be afraid through more exposures to medical experiences, and consequently this expanded their medical fear (Aho & Erickson, 1985). Some researchers have

postulated that certain fears carry through life (Miller, 1979). Perhaps once medical fear is developed, there is tendency for it to persist. The other plausible explanation is from the content the scale tested. There were several items related to the outcomes of illness and hospitalization (e.g. fear of missing school, fear of death, fear of having to stay in hospital for a long time). For older children more focus is given to the consequences of illness (Wong & Wilson, 1995), therefore the increased score of medical fear among older school-age children is warranted.

It is not surprising to find sex was a predictor of procedural fear, girls reported significantly more procedural fear than boys. This finding keeps in accordance with the studies of Aho and Erickson (1985), Broome & Hellier (1987), Dolgin, Phipps, Harrow, and Zelter (1990) in which girls expressed more medical fears than boys, including fear of procedures. But it is inconsistent with other two studies (Hart and Bossert, 1994; Roberts, Wurtele, Boone, Ginther, & Elkins, 1981) who concluded that the discrepancy was not significant. It is plausible that the boys guard or disguise some fear to medical procedures. Boys are more likely to be ridiculed for admitting to being fearful, particularly in China where boys are educated and expected to be more brave. It is also possible that the innate sensitivity of girls to pain and threatening accounts for the discrepancy.

Type of illness was found to be a predictor of interpersonal fear. Acutely ill children reported a higher amount of interpersonal fear than chronically ill children. This finding is not consistent with the study of Hart and Bossert (1994) in which the difference between acutely and chronically sick was nonsignificant. The first possibility is that the long-term nature of chronic illness involved more medical experiences and therefore made the children more accustomed to interaction with personnel. These children tend to be more mature and able to cope with situational stress and adapt to interpersonal stress factors. Secondly, the prolonged torture of the chronically sick lead these children to be more eager to recover, and this lessened their expression to some fear, such as fear of missing school for many days. Thirdly, it is assumed that the chronically ill children have learned more medical knowledge due to their experience, and therefore fear from misunderstanding and the unknown is diminished. Fourthly, the parents of chronically ill children are possibly more capable of utilizing effective management strategies to deal with childhood fear or avoidance, and help to dissipate their fears. As the prognosis of chronic illness grows poorer than acute illness, parental use of threat of punishment decreases and use of positive reinforcement increases (Dolgin, Phipps, Harrow, & Zeltzer, 1990).

The location of the family home was found to be a predictor of environmental fear. Unexpectedly, urban children exhibited more environmental fear than rural children, despite the fact that urban children have easier access to health care. This finding is inconsistent with the study of Hart and Bossert (1994) in which the children from lower income families reported significantly higher medical fear. Several possible accounts are as follows. Firstly, maybe the constant company and warm support provided by parents, independent, urban or rural, preclude the discrimination. Parental support was documented to be salient in altering a child's fear (Dibrell & Yamatoto, 1988). Secondly, the trait of urban or rural children would be an explaination of the result. Since 1990, almost all urban children are only children while some families in rural area have more than one child because if the first child is a girl, they can give birth to another. The child without siblings has been thought to be more anxious, vulnerable, and independent (Falbo & Polit, 1986), which, in turn increases their fear, especially environmental fear. The urban children were found to be more subject to complain about the discomfort and inconvenience of hospitalization, and had more environmental fear. Furthermore, the families of these only children set more importance on the child consequently when the child is hospitalized these parents may be more stressful and anxious. Not only do they transfer this anxiety

to the children (Swanson, 1977), but they are also less able to provide modeling and reassurance (Dibrell & Yamamoto). Additionally, the urban parents had higher expections of their children than rural parents (Chen & Utall, 1988). Thus, it is possible that urban children have more fear which regards to failing as a result of illness and hospitalization and subsequently more fear of hosptalized and environmental fear.

In sum, the older school-age children have more overall medical fear environmental fear and interpersonal fear than younger school-age children. Girls reported significantly more procedural fear than boys. Acutely ill children expressed more interpersonal fear than chronically ill children. Urban children demonstrated more environmental fear than rural children. However, all the selected factors including age, sex, type of illness and living area of family have no influnce on intrapersonal fear. Generally, the proposed hypothesis was partly supported.