

CHAPTER 4

FINDINGS AND DISCUSSION

A descriptive study was conducted to identify the level of self-care behaviors of school-age children with heart disease. This chapter presents: (1) a description of the subjects, (2) a presentation of the findings, and (3) a discussion of the findings.

Description of the subjects

The subjects of this study were 82 Chinese school-age children with heart disease ranged in age from 6 to 12 years old, with cardiac function in class I, class II, and class III. Their demographic characteristics and data of subjects' families are described in Tables 2 and 3.

Table 2

Demographic Characteristics of the Subjects (n=82)

| Characteristics | Frequency (N) | Percentage (%) |
|------------------------------------|------------------|-------------------|
| Age | | |
| Early school-age (6-8.0 years) | 24 | 29.3 |
| Middle school-age (8.1-10.0 years) | 20 | 24.4 |
| Late school-age (10.1-12.0 years) | 38 | 46.3 |
| Education level | | |
| Grade 1 | 16 | 19.5 |
| Grade 2 | 11 | 13.4 |
| Grade 3 | 7 | 8.5 |
| Grade 4 | 21 | 25.6 |
| Grade 5 | 10 | 12.2 |
| Grade 6 | 17 | 20.7 |
| Duration of illness | | |
| 1-24 months | 33 | 40.2 |
| 25-48 months | 10 | 12.2 |
| 49-72 months | 39 | 47.6 |
| Cardiac function | | |
| Class I | 34 | 41.5 |
| Class II | 28 | 34.1 |
| Class III | 20 | 24.4 |
| Number of hospitalization | | |
| One | 29 | 35.4 |
| Two | 31 | 37.8 |
| Three | 16 | 19.5 |
| Four | 6 | 7.3 |
| Cause of the re-hospitalizations | | |
| Respiratory infection | 62 | 75.6 |
| Heart failure | 18 | 22.0 |
| Others | 2 | 2.4 |

As shown as in table 2, nearly half of the subjects were late school-age children (46.3%) and more than one-fourth (29.3%) were in early childhood. Approximately 41.4% of them were in grades 1 to 3 and 62.6% were in grades 4 to 6.

In addition, the medical information of the subjects was also presented in Table 2. Slightly less than a half of the subjects (47.6%) had a long duration of illness (49-72months) and 40.2% of them had a short duration of illness (1-24 months). Among all the subjects, about two thirds (64.6%) had been rehospitalized. Approximately 41.5% of subjects' heart function were at level I, 34.1% of subjects' heart functions were at level II, and the rest (24.4%) of subjects' heart functions were at level III. Respiratory infection was the major cause of their hospitalizations (75.6%).

Table 3

The demographic data of the subjects' families

| Demographic data | Frequency (N) | Percentage (%) |
|-------------------------------------|------------------|-------------------|
| Number of children in the family | | |
| One | 57 | 69.5 |
| Two | 24 | 29.3 |
| Three | 1 | 1.2 |
| Education level of mothers | | |
| Primary school | 14 | 17.1 |
| Junior high school | 36 | 43.9 |
| Senior high school | 17 | 20.7 |
| Technical school | 3 | 3.7 |
| College (Diploma) | 9 | 11.0 |
| University (Bachelor) | 2 | 2.4 |
| Graduate | 1 | 1.2 |
| Education level of fathers | | |
| Primary school | 6 | 7.3 |
| Junior high school | 46 | 56.1 |
| Senior high school | 15 | 18.3 |
| Technical school | 4 | 4.9 |
| College (Diploma) | 7 | 8.5 |
| University (Bachelor) | 4 | 4.9 |
| Graduate | 0 | 0 |
| Occupation of mothers | | |
| Farmer | 32 | 39.0 |
| Factory worker | 28 | 34.1 |
| Government administration personnel | 13 | 15.9 |
| Teacher | 3 | 3.7 |
| Business person | 1 | 1.2 |
| Health personnel | 2 | 2.4 |
| Others | 3 | 3.7 |

Table 3

The demographic data of the subjects' family (cont'd)

| Demographic data | Frequency (N) | Percentage (%) |
|-------------------------------------|------------------|-------------------|
| Occupation of fathers | | |
| Farmer | 29 | 35.4 |
| Factory worker | 33 | 40.2 |
| Government administration personnel | 12 | 14.6 |
| Teacher | 1 | 1.2 |
| Business person | 2 | 2.4 |
| Health personnel | 0 | 0.0 |
| Others | 5 | 6.1 |
| Monthly income of the family | | |
| Less than 250 yuan | 22 | 26.8 |
| 251-500 yuan | 21 | 25.6 |
| 501-750 yuan | 12 | 14.6 |
| 751-1000 yuan | 14 | 17.1 |
| more than 1000 yuan | 13 | 15.9 |

Table 3 indicated that the majority of the subjects' families (69.5%) had one child. Nearly half of the subjects' mothers completed junior high school (43.9%). More than half of the subjects' fathers (56.1%) completed junior high school. The occupation of the majority of the mothers and fathers were farmers (39.0% and 35.4 %). The numbers of the fathers (40.2%) who were factory workers were slightly more than the number of the mothers (34.1%). The numbers of the subjects' families in low and moderate monthly income groups were quite similar (26.8% and 25.6%, respectively). Only 15.9% of the subjects' families had high monthly income.

Presentation of the findings

The presentation of the findings related to the research question was presented in this part.

Research question: what is the level of self-care behaviors of school-age children with heart disease whose cardiac function is in class I-III?

The scores and the levels of the self-care behaviors of school-age children with heart disease were presented as follows in Table 4 to Table 7.

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Table 4

Range, Mean, Standard deviation and Level of self-care behaviors (SCB) of all subjects

| Self-care Behaviors | Range | Mean | SD | Level of SCB |
|---------------------|-------|-------|------|--------------|
| Total | 44-79 | 63.63 | 8.70 | Moderate |
| Universal | 17-34 | 28.70 | 3.26 | Moderate |
| Developmental | 7-18 | 13.32 | 3.07 | Moderate |
| Health deviation | 12-29 | 21.45 | 5.32 | Moderate |

It is shown in table 4 that the total score of the self-care behaviors of school-age children with heart disease ranges from 44 to 79 with a mean of 63.63 (SD=8.70). The total range score indicated a moderate level. In the three dimensions, the mean scores were 28.70 (SD=3.26) for universal, 13.32 (SD=3.07) for developmental, and 21.45 (SD=5.32) for health deviation self-care behaviors respectively. The levels of the three dimensions were at moderate levels.

Table 5

Frequency and Percentage of the level of self-care behaviors of all subjects and in three dimensions (n=82)

| Self-care behaviors scores | Frequency (N) | Percentage (%) |
|----------------------------|---------------|----------------|
| Total | | |
| Low (0-33) | 0 | 0 |
| Moderate (33.01-66) | 45 | 54.9 |
| High (66.01-100) | 37 | 45.1 |
| Universal dimension | | |
| Low (0-14.67) | 0 | 0 |
| Moderate (14.68-29.35) | 44 | 53.6 |
| High (29.36-44) | 38 | 46.4 |
| Developmental dimension | | |
| Low (0-6.67) | 0 | 0 |
| Moderate (6.68-13.35) | 42 | 51.2 |
| High (13.36-20) | 40 | 48.8 |
| Health deviation dimension | | |
| Low (0-12) | 0 | 0 |
| Moderate (12.01-24) | 49 | 59.8 |
| High (24.01-36) | 33 | 40.2 |

Table 5 showed that more than half of subjects performed self-care behaviors at a moderate level in total (54.9%), and none of them performed at a low level. Considering the three dimensions, 53.6 percent of subjects performed at a moderate level in the universal dimension, 51.2 percent of them performed at a moderate level in the developmental dimension, and 59.8 percent of them performed at moderate level in the health deviation dimension.

Table 6

Range, Mean, Standard deviation and Level of self-care behaviors (SCB) in each cardiac function

| Cardiac function | Range | Mean | SD | Level of SCB |
|------------------|-------|-------|------|--------------|
| Class I | 69-79 | 73.11 | 2.09 | High |
| Class II | 59-68 | 62.85 | 2.96 | Moderate |
| Class III | 44-58 | 51.65 | 4.08 | Moderate |

Table 6 showed that self-care behaviors scores of subjects whose cardiac function were in class I ranged from 69 to 79 with a mean of 73.1 (SD=6.46), and subjects whose cardiac function were in class II ranged from 59 to 68 with a mean of 62.85 (SD=2.96). The scores of subjects whose heart functions were in level III ranged from 44 to 58 with a mean of 51.65 (SD=4.08). The result, shows that the subjects whose cardiac functions were in class I had high levels of self-care behaviors, and the subjects whose cardiac functions were in class II and III had moderate levels of self-care behaviors. Moreover, the subjects whose cardiac functions were in class III had the lowest scores of self-care behaviors.

Table 7

Frequency and Percentage of the level of self-care behaviors of all subjects and in each class of cardiac function group

| Cardiac function | Self-care behaviors scores | Frequency (N) | Percent (%) |
|------------------------|----------------------------|---------------|-------------|
| Class I group (N=28) | | | |
| | Low (0-33) | 0 | 0.0 |
| | Moderate (34-66) | 0 | 0.0 |
| | High (67-100) | 28 | 100.0 |
| Class II group (N=34) | | | |
| | Low (0-33) | 0 | 0.0 |
| | Moderate (34-66) | 29 | 85.3 |
| | High (67-100) | 5 | 14.7 |
| Class III group (N=20) | | | |
| | Low (0-33) | 0 | 0.0 |
| | Moderate (34-66) | 20 | 100.0 |
| | High (67-100) | 0 | 0.0 |

As indicated in Table 7. All of subjects whose cardiac functions were in class I had high levels of self-care behaviors (100%), and the majority of subjects whose cardiac functions were in class II had moderate levels of self-care behaviors (85.3%). Moreover, all of subjects whose cardiac functions were in class III had moderate levels of self-care behaviors (100%).

Discussion

The discussion of the findings related to the research question is presented in this part. The research question is "what is the level of self-care behaviors of school-age children with heart disease whose cardiac functions are in class I-III?"

As shown in Table 4, the majority of school-age children with heart disease had moderate levels of total self-care behaviors. Also, the majority of subjects had moderate levels of self-care behaviors in universal, developmental, and health deviation dimensions (in Table 5). This finding indicated that these school-age children were able to actively participate in self-care practice. There are four possible explanations for these findings as follows:

The first possible explanation is related to growth and development of school-age children and health states. At each developmental stage, children are capable of certain self-care actions, and as their self-care agencies increase, parental assistance should decrease (Orem, 1995). According to Adele (1999), the school-age period is usually the first time that children begin to make truly independent judgments. School-age children are interested and able to contribute to their own health history. A sense of industry normally develops during the ages of 6 to 12 years. With the sense of autonomy and initiative in place, the child is ready to engage in tasks that can and will be followed through to completion (Jackson & Judith, 1992). They are

interested in learning and mastering new skills and aim to develop competence in school, sports, and other activities (Adele, 1999). Their ability to think on the level of concrete operations allows them to assess themselves and their environments logically. Also, they enjoy achievement, success, and peer recognition. Therefore, they want to experience success in their self-care efforts.

By 10 to 12 years of age, children are able to think somewhat abstractly, thus allowing the capacity for self-reflection (Wadsworth, 1971). It is in the school-age years that children become cognitively capable of taking responsibility for self-care. By the middle and late school years, the child should be able to make appropriate self-care decisions. This is a critical period during which the synthesis of cognitive skills and social responsibilities can result in maximum self-care decision making (Craft, 1990). In this study, most of the subjects were middle and late school-age children (Table 1) who were more mature, and they were expected to be responsible for self-care activities (Castiglia, 1996; McCarthy, Williams & Eidahl, 1996). Jiang (1997) studied self-care behaviors in children, and found that school-age children can perform self-care behaviors at high levels. It is not congruent with this study that the subjects had moderate levels of self-care behaviors. This was due to another reason, that is the health state.

The Health state influences children's self-care performance or practices significantly (Moore, 1993).

Children who had more health symptoms performed fewer self-care activities (Frey & Denyes, 1989). The children's cardiac function classes reflected the degree of severity of their heart disease. The children who had good cardiac function had high levels of self-care behaviors. The lower the heart function, the lower the level of self-care behaviors (Joyce, Black, & Matassarini-Jacobs, 1987). This is because children with better cardiac functions have more energy to perform self-care practices. Severe symptoms, for example, fatigue, palpitation, dyspnea, or anginal pain, usually makes children weak and intolerant to activities, which would decrease their ability to care for themselves (Adele, 1999).

The second possible explanation is related to some degree of health education when school-age children with heart disease are hospitalized. The two hospitals were teaching hospitals of China Medical University. Usually, these hospitals, nursing care standards for children with heart disease is established by the Nursing Service Department of each hospital. During hospitalization, the children and their parents might receive information from doctors and nurses regarding diagnosis, treatment, complications of heart disease, and side effects of treatment. They also might receive advice regarding nutrition, infection prevention and how to administer medication at home, follow up regularly and so on. Therefore, self-care behaviors of school-age children with

heart disease might be increased by nursing plans or discharge plans.

The third possible reason is related to children's primary health care. In China, the government provides illness prevention and health promotion services to 81% of the children in the country. Even though in rural areas, more than 96% of primary schools and high schools develop a course of health education which includes teaching the students how to prevent illness (Chen, 1998). In addition, the community health care in Shenyang is advancing. It is beneficial for children to gain health care knowledge and promote their self-care behaviors.

The last explanation is related to parental education levels. According to Jiang (1997), mother's and father's education levels are predictors of self-care practices of Chinese school-age children. If the parents have high levels of education, they might be more knowledgeable and capable in helping their children to perform self-care practice at high levels. But, in this study, the majority of the mothers' and fathers' educational levels were at junior high school (43.9% and 56.1%). So, they might not help the child to perform self-care behaviors as well as the parents with high education. Therefore, they can help their children to perform self-care behaviors at moderate level.

Another important finding indicated that the school-age children with heart disease whose cardiac function were in class I had high level of self-care behaviors, and the

school-age children whose cardiac functions were in class II and III had moderate levels of self-care behaviors. Moreover, the subjects whose cardiac functions were in class III had the lowest scores of self-care behaviors (Table 6 and 7). As previously, when children's cardiac functions were in class I, there was no limitation of physical activity. When children's cardiac functions were in class II, there was a slight limitation of physical activity, comfort at rest, but ordinary physical activity resulted in fatigue, palpitation, dyspnea, or anginal pain. When children's cardiac functions were in class III, there was a marked limitation of physical activity, comfort at rest, but less than ordinary physical activity caused fatigue, palpitation, dyspnea, or anginal pain (Joyce, Black, & Matassarini-Jacobs, 1987). As a result, the children whose cardiac functions were in class I would care for themselves like healthy children. But, the activity of children whose cardiac functions were in class II and III might be limited. It was obvious that their ability for self-care would be decreased. For this finding, there were another two possible explanations related to the following reasons.

The first possible reason was related to family support, which may contribute to self-care behaviors of school-age children with heart disease in each cardiac function dimension. Orem (1995) states that family support as one of basic conditioning factors which can influence self-care behaviors of these children, including improvement and decrease of self-care behaviors. In Chinese culture,

generally, almost of all families are tied by blood relationships, and family relationships are strong. The issue of a child suffering from a chronic condition such as heart disease is serious for the families (Le, Su, & Chen, 1994). All the family members are always concerned with the child's health and respond to the issue. The family responses included providing physical support and emotional support. Regarding emotional support, this might enhance the child's motivation to perform self-care activities, and provide information and feedback to promote the child's self-care behaviors (Broome, et al., 1998). The children might be promoted self-care behaviors by their parents.

The second possible reason was related to the one or two child birth control policy (only one child birth control in the city and two children in the countryside) in China. This may be beneficial for children's self-care behaviors. Because the family has only one or two children, there was no other children to share with them (Falbo & Poston, 1993). In this study, the majority of the subjects' families (69.5%) had one child. Parents usually have more time to share with their child. Because of their anxiety about the heart disease, they usually spend more time to gain more information about how to care well for their child. Also, they performed many activities such as teaching, demonstrating self-care activities that they know to promote self-care behaviors in their children. As a result, these children had more chance for independence, and the ability for self-care was increased. Based on the above causes, it

was concluded that the subjects whose cardiac functions were in class III had moderate levels of self-care behaviors.

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