

CHAPTER 4

FINDINGS AND DISCUSSION

A correlational descriptive study was conducted to describe the level of social support perceived by family members of the head injured patients and the level of stress appraised by them, and to ascertain the relationship between social support and stress among family members of the head injured patients admitted to three teaching hospital of Sun Yat-Sen University of Medical Science.

Findings

Fifty-eight subjects were selected according to the criteria for eligibility. The period of data collection was during November, 1999 to January, 2000. Descriptive statistical analysis for fifty-eight subjects was used in term of frequency, percentage, mean and standard deviation. After testing for the normal distribution, Pearson product moment was performed to ascertain the relationship between social support and stress.

The findings from this study were organized and presented in the following parts:

1. The demographic data of the subjects and the head injured patients;
2. Social support perceived by the subjects;
3. Stress appraised by the subjects; and

4. Relationship between social support and stress among the subjects.

Part I Demographic data of the subjects

Subjects were composed of 58 family members of the head injured patients. The subjects' age ranged from 20 to 70 years old. The mean age was 42.2 with standard deviation of 11.5. The head injured patients' age ranged from 11 to 75 years old. The mean age was 43.2 with standard deviation of 14.2. The subjects' detailed demographic characteristics were described in Tables 1 to Table 4. The head injured patient's general information were described in Tables 5 to Table 7.

Table 1

Frequency and percentage of subjects grouped by gender, age and educational background (n = 58)

Variable	Frequency	Percentage
Gender		
Male	14	24.1
Female	44	75.9
Age (years)		
20 and younger	1	1.7
21 - 30	8	13.8
31 - 40	16	27.6
41 - 50	20	34.5
51 - 60	10	17.2
61 - 70	3	5.2
Educational background		
Primary school	16	27.6
Middle school	20	34.5
High school	18	31.0
University	3	5.2
Graduate school	1	1.7

Table 1 showed that more than two-third of the subjects (75.9%) was female. One-third of subjects (34.5%) were aged of 41-50 years old, followed by age group of 31-40 years old (27.6%). Only one subject (1.7%) was at 20 years old and younger. One-third of the subjects (34.5%) finished middle school and 18 subjects (31.0%) had high school education. Only one subject (1.7%) had graduate school education.

Table 2

Frequency and percentage of subjects grouped by marital status, the relationship with the patient, and family pattern (n = 58)

Variable	Frequency	Percentage
Marital status		
Single	2	3.4
Married	55	94.9
Widowed	1	1.7
Relationship with the patient		
Spouse	41	70.7
Parents	11	19.0
Sibling	4	6.9
Son/daughter	1	1.7
Others (grandmother)	1	1.7
Family pattern		
Lived with spouse	9	15.5
Lived with spouse and children	34	58.6
Lived with parents	2	3.4
Lived with spouse and parents	13	22.5

Table 2 indicated that majority of the subjects (94.9%) was married and only one was widowed. Forty-one (70.7%) subjects were spouses of the patients and 11 (19.0%) were parents. More than one half of the subjects (58.6%) lived with spouse and children, and 2 (3.4%) of subjects lived with parents.

Table 3

Frequency and percentage of subjects grouped by occupation, family income, and earned family income (n= 58)

Variable	Frequency	percentage
Occupation		
Unemployed	8	13.8
Worker	20	34.5
Farmer	9	15.5
Teacher	1	1.7
Health personnel	2	3.4
Student	1	1.7
Businessman	4	6.9
Office staff	6	10.4
Retired	7	12.1
Family income (yuan/month)		
Less than 1,000	29	50.0
1001 - 2000	20	34.5
More 2,000	9	15.5
Earned family income		
Enough	16	27.6
Not enough	42	72.4

Table 3 showed that one-third of subjects (34.5%) were workers and nine subjects (15.5%) were farmer, followed by the unemployed group (N = 8, 13.8%). Half of the subjects reported that their family income were lower than 1,000 yuan and only 9 subjects reported that their family income were more than 2000 yuan. The majority of the subjects (72.4%) reported that their family income were not enough.

Table 4

Frequency and percentage of the subjects grouped by the most supporter and past experience (n= 58)

Variable	Frequency	percentage
The most supporter		
Other family member	37	63.8
Friends	17	29.3
Health professionals	4	6.9
Past experience of taking care of serious illness or injury of family member		
No	41	70.7
Yes		
One time	14	24.1
Two times	3	5.2

Table 4 showed that thirty-seven subjects (63.8%) reported that other family member were the most supporters, and only 4 subjects (6.9%) considered health professionals as the most supporter. The majority of the subjects (70.7%) had no past experience of taking care of serious illness and injury of family member and only 17 subjects (29.3%) had past experience.

Table 5

Frequency and percentage of the head injured patients grouped by gender, age, and educational background (n= 58)

Variable	Frequency	percentage
Gender		
Male	42	72.4
Female	16	27.6
Age (years)		
11 - 20	3	5.2
21 - 30	8	13.8
31 - 40	15	25.8
41 - 50	17	29.2
51 - 60	6	10.4
61 - 70	6	10.4
71 -80	3	5.2
Educational background		
Primary school	15	25.9
Middle school	20	34.5
High school	14	24.1
University	6	10.3
Graduate school	3	5.2

Table 5 showed that the majority of the head injured patients (72.4%) were male. Seventeen head injured patients (29.2%) were age of 41-50 years old, followed by age group of 31-40 years old (25.8%). One-third of the head injured patients (34.5%) finished middle school and 15 head injured patients (25.9%) had primary school education. Only 3 patients (5.2%) had graduate school education.

Table 6

Frequency and percentage of head injured patients grouped by marital status, occupation before injury, and ways of hospital payment (n= 58)

Variable	Frequency	percentage
Marital status	5	8.7
Single	48	82.8
Married	2	3.4
Divorced	2	3.4
Widowed	1	1.7
Separated		
Occupation before injury		
Unemployed	9	15.5
Worker	22	37.9
Farmer	4	6.9
Student	2	3.4
Businessman	5	8.7
Office staff	6	10.4
Retired	10	17.2
Ways of hospital payment		
Total reimbursed or insurance	2	3.4
Partial reimbursed or insurance	30	51.7
Total self pay	26	44.9

Table 6 showed that most of the head injured patients (82.8%) were married. Twenty-two head injured patients (37.9%) were workers and 9 patients (15.5%) were unemployed group. Thirty patients (51.7%) received partial reimbursement or insurance, half of the patients (44.9%) pay their medical fees on their own. Only two patients (3.4) received total reimbursed or insurance.

Table 7

Frequency and percentage of the head injured patients grouped by cause of injuries, severity of head injury, and operation (n= 58)

Variable	Frequency	percentage
Cause of injuries		
Traffic accident	30	51.8
Falls	13	22.4
Assaults and violence	10	17.2
Sports and amusement	5	8.6
Severity of head injury		
Moderate	21	36.2
Severe	37	63.8
Operation		
No	20	34.5
Yes	38	65.5

Table 7 showed that 30 head injuries (51.8%) were caused by traffic accident and 13 head injuries (22.4%) were caused by falls. Thirty-seven head injuries (63.8%) were severe. More than half of the head injured patients (65.5%) had operation.

Part II Social support perceived by the subjects

To describe social support perceived by the subjects; the score of the social support were obtained from the subjects' response by using the Chinese version of MPRQ-85 part 2. The results are shown in Table 8 and Table 9.

Table 8

Range, mean and standard deviation of social support score as perceived by the subjects (n= 58)

Variable	Range	mean	SD
Score of Social support	27 - 92	57.3	15.3

Table 8 showed the range of social support score which was between 27 to 92 with a mean value of 57.3 and standard deviation of 15.3.

Table 9**Level of social support perceived by the subjects (n= 58)**

Level of social support	Frequency	Percentage
Low	33	56.9
Moderate	24	41.4
High	1	1.7

Table 9 showed that more than half of the subjects (56.9%) perceived low level of social support and 24 subjects (41.4%) perceived moderate level of social support. Only one subject (1.7%) perceived high level of social support.

Part III Stress appraised by the subjects

To describe stress appraisal by the subjects, the score of the stress were obtained from the subjects using Stress Appraisal Questionnaire. The findings are shown in Tables 10 and Table 11.

Table 10

Range, mean and standard deviation of stress appraised by the subjects (n= 58)

Variable	Range	Mean	SD
Score of stress	48 - 80	66.7	7.2

Table 10 showed the total score of stress which ranged from 48 to 80. The mean value was 66.7 and the standard deviation was 7.2.

Table 11**Level of stress appraised by the subjects (n=58)**

Level of stress	Frequency	Percentage
Low	--	--
Moderate	10	17.2
High	48	82.8

The score was categorized into low, moderate, and high levels. The data indicate that most subjects (82.8%) appraised the injuries of their loved one as high level of stress, and no one rated low level of stress. Only 10 subjects (17.2%) rated the moderate level of stress.

Part IV Relationship between social support and stress among the subjects

To ascertain the relationship between social support and stress among the subjects, the Pearson product-moment correlation coefficient was used and the result is shown in Table 12.

Table 12

Pearson product moment correlation coefficient among social support and stress (n=58)

	Social support	Stress
Social support	1.000	
Stress	-.556**	1.000

** P < .01

The result indicated that social support was statistically significant and strongly negative associated with stress ($r = -.556, p < .01$) among the subjects.

Discussion

According to the objectives of this study, the discussion was organized into four parts.

Part I demographic characteristics

Fifty-eight subjects participated in this study. The averaged age of the subjects was 42.2 (SD =11.5) years. Most of their (62.1%) age ranged from 31 to 50 years old. The male-to-female ration was 1:3.14. These demographic characteristics were consistent with the previous study

about family members who take care of the head injured patients (Acorn, 1993; Dring, 1993).

The averaged age of the head injured patients was 43.2 (SD = 14.2) years old. The majority of them (68.9%) were in the age ranged between 21 to 50 years. More than two third of the head injured patients (72.4%) were male and 27.6% of the patients were female. These demographic characteristics were congruent with the incidence trend of head injury in China (Wang, 1999).

More than half of the head injured patients (60.4%) only had middle school or lower education and 15.3% of the patients had university or graduate school education. The education status of the patients and their subjects were almost the same.

Before the injury, 15.5% of the head injured patients were unemployed and 37.9% of them were workers. The data was congruent with Richmond & Craig's study (1986) which indicated that most head injured patient come from low income, and low educational level family.

The majority of head injuries caused by traffic accident (51.8%), followed by falls (22.4%) and assaults and violence (17.2%). These injuries were congruent with the report in the literature (Hickey, 1997; Hudak, Gallo, and Morton, 1998; Liu and Zhang, 1999). More than half of patients (63.8%) had severe head injury and 36.2% had moderate head injury. It might be explained that three hospital of Sun Yat-Sen University of Medical Science were the most famous hospital in GuangZhou city, China, and the

patients admitted in these hospitals were more severe. More than half of the patient (65.5%) had operation. After operation, the head injured patient was transferred to the surgical ward and intensive care unit (ICU). The data collection was conducted in the surgical ward and ICU, therefore, most of them had operation.

Part II Social support perceived by the subjects

The results showed that the subjects perceived the social support at low to moderate level (Table 9) with the mean score of 57.3 and standard deviation of 15.3 (Table 8), more than half of subjects (56.9%) perceived their social support at a low level, and 41.4% of the subjects rated social support at a moderate level, only one subjects rated social support at high level. It was interesting that the social support was quite low in this group of subjects. A low level of social support found in this study was consistent with the Grossman's (1995) study that critically-injured patients, compared to their family members, perceived more social support. It is possible that the closed friends and loved ones surrounding family members may be exhausted by the amount of help for accident victims and their family members. When they spent the time on the patient, they had no time given to the family members. Wortman and Lehman's (cited in Grossman, 1995) studied in the field of support and trauma indicated that potential support providers may not know what to do or say to be truly comforting. Moreover, the more distress or more

unfortunates a person's situation, given multiple stressor events, the more threaten friends and relatives may feel. This potential support provider may be unable to overcome their own sense of personal vulnerability in order to be truly supporters of the family member.

This finding contrasted to the findings of Yan (1997) and Liu (1999) which subjects perceived a moderate to high level of social support. It might be the characteristics of the subjects were different. Their subjects were chronic illness patients. This is different from this study because it was conducted with the acute injuries group. Yan (1997) and Liu (1999) conducted their studies in the patients group, whereas this study was conducted in the family members group. Regarding of the characteristics of the subjects, 70.7% of the subjects were spouses of the head injured patients. Piazza, Holcombe, Foote, Paul, Love, and Daffin (1991) reported that spouse was the most important group in providing social support. After injury of their spouses, lacking of the most important support system, the subjects of the head injured patients might perceive low level of social support.

The injury affected the family as whole. The family affection structure was changed. and the communication structure was altered (Cardona, Hurn, Scanlon, and Verse-Berry, 1994). Although 63.8% subjects reported other family member as the most supporters, it might be difficult for the other family members who were also confronted with crisis provided social support effectively.

Twenty-six head injured patients (44.9%) had to pay the hospital bills totally by themselves. In China, before the innovation of insurance in 1998, the employee can received reimbursement about 70 to 90 percent of their medical fee. In this study, 51.7% patients only received 50 to 80 percent of reimbursement. Therefore, the tangible support might be quite low in this group of subjects. The finding was contrasted to the findings of Liu (1999) which indicated the subjects received more tangible support.

One's social-economic status may also affect the qualitative features of interaction between the family members and the health care providers. The subjects of high social-economic status were likely to be perceived as being more intelligent and educated, and are therefore given clear information regarding diagnosis, treatment and prognosis while this information support may not be offered to the subjects perceived to be less educated and intelligent (Mahat, 1997). Since most of the subjects were come from low educated and low economic families, the informational supports might be limited.

Piazza and colleague (1991) stated that subjects who were unemployed report less perceived social support than those who were employed. It may be explained that employment created opportunity for social contact, and provided evidence of one's value to society. Eight subjects (13.8%) were unemployed. This unemployed rate was higher than that of China, which was 3.1% in 1998, reported by

government (2000). This also may explain the low social support among the subjects.

Most of the subjects (58.6%) lived with spouse and children and 15.5% subjects lived with spouse, which family pattern characterized by their family small size. Few people in their social network were positively related to the low level of social support. This was congruent with the findings of Johnson (1996).

Only 4 subjects (6.9%) reported the health professionals as their most supporter. This finding was consistent with the finding of Waters' (1998) study which indicated the provision of professional nursing support given to family members is often haphazard, inconsistent, or absent. It may be explained that the health professionals pay more attention to the patients when the acute injuries occurred. They believed the most important thing is saving the lives of the head injured patients. Family members who need support from the health professional might be ignored.

Part III Stress appraised by the subjects

The result of the study indicated that subjects rated their stress with a mean score of 66.7 (Table 10), in which the majority of them (82.8%) appraised as high level of stress and 17.2% of them rated as moderate level of stress (Table 11). As the definition of stress according to Lazarus and Folkman's (1984) Stress and Coping model as a particular relationship between the family members and the situation of the head injured patients that is appraised by

the family members as taxing or exceeding their resources and endangering their well-being. The situational factors influencing the stress appraisal were the head injured patient's condition. Regarding the characteristics of the head injured patients, most of them (72.4%) were male and married. The majority of them (68.9%) were in the age ranged between 21 to 50 years. In China, men at this age group are usually considered the householder or key person in the family (Liu, 1999). Injuries of these persons may have high impacts on their family. The result of a high level of stress in this study was conformed to the previous study which the family members of head injured patients experienced heightened stress as a result of the injury and its consequences (Leathem, Heath, and Woolley, 1996).

The patients were moderate to severe injured, most of them need operation. It was consistent with the findings of Artinian (1991) that spouses of patients undergoing operation had high level of stress. It also confirmed Engli & Kirsivali-Farmer (1993) reported that use of ventilation support, the need of endotracheal intubation increased the stress level of the family member.

The personal factors influencing stress appraisal include the family member's situation. It was reported that financial problem was contributed to the family members' appraisal of stress (O'Neill & Carter, 1998). In this study, half of the family members belong to the low-income family, and most of the subjects (72.4%) reported their family income were not enough. The result of this study

that subjects had high level of stress was consistent with that of Grossman (1995) which stated that high family members' burden might be associated with low socio-economic status.

Mahat's (1997) stated that individuals with higher educational backgrounds are able to understand the disease process and were able to accept the illness and appraise it as a challenge, and found effective strategies to cope with stress, the low education background associated with high level of stress. We had compulsory system of 9 years education since 1949. Chinese aged less than 50 years old have the opportunity to finish 9 years education. Although some less fortunate Chinese still do not received that educational level. However, the present generation of populations has more chance to have higher education at the college or university level, especially in the city. In this study, more than half of subjects (62.1%) had middle school or lower education background. This education level of the subjects was lower than that of present generation of China. It might be difficult for them to understand the disease process and to accept the illness and appraise it as a challenge. Their appraisal of high level of stress might be associated with low education background.

In additional, the past experience also influencing the appraisal of stress. There were 70.7% of the subjects did not have the past experience taking care of serious illness or injury of family member. They had no clear knowledge of expected behaviors or response. They don't know

how to deal with this stressful situation. This might increased the level of stress they appraised.

Part VI Relationship between social support and stress among the subjects

The research question in this study was if there is any relationship between social support and stress among the family members of the head injured patients. Pearson product-moment correlation coefficient statistics was used to answer this research question. The result showed that there was a significantly strong negative relationship between social support and stress ($r = -.556, P < .01$). It indicated that the lower the level of social support, the higher the level of stress among the the subjects

Cohen and McKay (1984) pointed out that (a) possible stress-buffering mechanisms of social support may intervene between the stressful event and outcomes by attenuating a stress or threat appraisal, and (b) social support may intervene between the stress appraisal of threat and the outcome by reducing or eliminating the reaction to the threat by providing a solution to the problem that would be encompassed under coping responses. Social support is often a powerful aid to coping. Social support is considered as an important coping resource can provide the coping options in stressful transaction by enhancing the problem-focus coping and emotional-focus coping strategies (Lazarus & Folkman, 1984).

The findings of the present study supported the findings of Bloom (1982) that the social support was the strongest predictor of a woman's ability to cope with the stress of breast cancer. There was a strongly negative correlation between psychological distress and social support. Women who reported a high amount of psychological distress also had less social support. Women with strong social support reported less stress than women with less social support.

The findings of this study about the strongly negative correlation between social support (Table 12) and stress was congruent with Norbeck's (1985) study of female critical care nurses which indicated that social support was negatively related to perceived job stress

The finding of this study was congruent with Taylor's (1986) statement that people with high level of social support may experience less stress when they confront with a stressful event, and they may cope with it more successfully.

The findings also supported Davis's (1990) study of family caregiver and individual recovering from major illness or injury in which the levels of stress are negatively correlated with the levels of social support.

The findings of this study further supported Sepulveda and Chang's (1994) study of 75 persons disabled by stroke in which there was a significant negative relationship between perceived availability of social support and stress. With increased perceive availability of

social support and social contact, the person was likely to perceived less stress and cope more effectively.

The finding of a strongly negative relationship between social support and stress in the present study is congruent with a number of previous studies. This added to the growing literature suggesting that social support as one of the coping resources influenced the appraisal of stress.

Considering of the conceptual framework of this study, the concept of social support derived from Brandt and Weinert (1981) and the concept of stress from Lazarus and Folkman's Model of stress and coping (1984) were used. As Brandt and Weinert (1981) stated each dimension of social support provides different benefits to the family members of the head injured patients. Intimacy and social integration provide a sense of security and loved and belong to a social group, and make the individual feel comfortable and happy.

Opportunity for nurturance and reassurance of worth provide a sense of being need and competence by the others, and increase the self-esteem. Available of informational, emotional, and material help can provide direct problem solution, give guidance, and thus enhances the family members' ability to promote health behavior and solve the financial problem. Consequently, social support influence the family members of head injured patients appraised stress.

The findings of this study showed a strongly negative relationship between social support and stress among the family members of head injured patients. These

results answered the research questions and were accordance with the conceptual framework.

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