CHAPTER 4

FINDINGS AND DISCUSSION

A correlational descriptive study was conducted to identify the level of social support, the level of quality of life of renal transplant patients, and to explore the relationship between social support and quality of life among renal transplant patients attending the Renal Tansplantation Outpatient Clinic of the First Teaching Hospital of Xi'an Medical University, Xi'an City, P.R. China.

Findings

Sixty renal transplant patients were selected according to the inclusion criteria. The period of data collection was during November, 1998 to January, 1999. Descriptive statistical analysis for sixty subjects was used in terms of frequency, percentage, mean and standard deviation. After testing for the normal distribution, Pearson product moment was performed to determine the relationship between social support and quality of life. The findings from this study were organized and presented in the following parts:

1. The demographic data of the subjects;
2. Social support of the subjects;

3. Quality of life of the subjects; and
4. Relationship between social support and quality of life among the subjects.

Part I Demographic data of the subjects

This study subject was composed of 60 renal transplant patients with age ranged between 19 to 66 years. The mean age was 40.98 with SD of 11.83. The detailed demographic characteristics of sex, age, educational background, marital status, family relationship, family patterns, occupation (before and after operation), family income, way of hospital payment, and length of post transplantation were separately described in tables 1 - 4.

Table 1

Frequency and percentage of subjects grouped by sex, age and educational background (N = 60)

Variable	Frequency	Percentage
Gender		
Male	42	70.00
Female	18	30.00
Age (years)		
20 and younger	1	1.67
21-30	9	15.00
31-40	17	28.33
41-50	19	31.67
51-60	8	13.33
61-70	6	10.00
Educational background		
Primary school	1	1.67
Middle school	15	25.00
High school	29	48.33
University or higher	15	25.00

Table 1 showed that 42 renal transplant subjects (70.00%) were male. Most subjects (60.00%) age ranged from 31 to 50 years old and only one subject (1.67%) was younger than 20 years old. Twenty-nine subjects (48.33%) finished high school and one subject (1.67%) had primary school education.

Table 2

Frequency and percentage of subjects grouped by marital status, family relationship and family patterns (N = 60)

Variable	Frequency	Percentage
Marital status		
Married	45	75.00
Single	12	20.00
Divorced	1	1.66
Widow	2	3.34
Family relationship		
Good	51	85.00
Fair	6	10.00
Poor	3	5.00
Family patterns		
Lived with parents	12	20.00
Lived with spouses	7	11.67
Lived with spouses and children	40	66.67
Lived alone	1	1.66

Table 2 indicated that 45 subjects (75%) were married and only one divorced. Among them, 51 subjects (85%) reported their family relationship were good and 3(5%) had poor relationship with their family members. forty subjects (66.67%) lived with their spouses and children and only one subject lived alone.

Table 3

Frequency and percentage of subjects grouped by occupation and family income (N = 60)

Variable	Frequency	Percentage
Occupation (before transplantation)		
Worker	22	36.67
Office staff	27	45.00
Businessman	4	6.66
Farmer	1	1.67
Unemployed	2	3.33
Retired	3	5.00
Student	1	1.67
Occupation (after transplantation)		
Worker	10	16.67
Office staff	17	28.33
Businessman	4	6.66
Farmer	1	1.67
Unemployed	17	28.33
Retired	10	16.67
Student	1	1.67
Family income (yuan/month)		
< 1,000	22	36.67
1,001-2,000	28	46.66
> 2,000	10	16.67

Table 3 showed that 27 subjects (45%) were the office staff and only two subjects (3.33%) were unemployed before transplantation while aqually 17 subjects (28.33%) were the office staff and unemployed after transplantation. Nearly half of subjects (46.66%) reported that their family income were between 1,001 to 2,000 yuan, and 10 subjects (16.67%) had more than 2,000 yuan per month.

Table 4

Frequency and percentage of subjects grouped by way of hospital payment, length of posttransplant time (N = 60)

Variable	Frequency	Percentage
Way of hospital payment	2	3.33
Total reimbursed	41	68.34
Partial reimbursed	17	28.33
Total self paid		
Length of post transplantation		
3 months to 1 year	30	50.00
1 to 2 years	14	23.33
2 to 3 years	10	16.67
more than 3 years	6	10.00

Table 4 showed that 41 subjects (68.34%) received partial reimbursement, 17 subjects (28.33%) paid their total medical fee. Thirty subjects (50%) were in between three months to one year posttransplantation and 6 subjects (10%) had transplant kidneys for more than three years.

Part II Social support of subjects

To describe social support of the subjects, the scores of the social support were obtained from the subjects' response by using modified PRQ-85 Part 2. The findings were shown in tables 5 to 6.

Table 5

Range, mean and standard deviation of social support among the subjects (N=60)

Variable	Range	Mean	SD
Score of social support	57-112	92.98	9.55

Table 5 showed the total score of social support ranged from 57 to 112. The mean value was 92.98 and the standard deviation was 9.55.

Table 6

Level of social support among the subjects (N = 60)

Level of support	Frequency	Percentage
Low	1	1.66
Moderate	22	36.67
High	37	61.67

Table 6 indicated that the total social support score was categorized into low, moderate, and high levels. More than half of subjects (61.67%) perceived high level and only one subject rated low level of social support.

Part III Quality of life of the subjects

To describe the perceived quality of life among the renal transplant patients, the score of the quality of life were obtained from the subjects' response by using Ferrans and Powers Quality of Life Index-Kidney Transplant Version. The results were shown in table 7 and 8.

Table 7

Range, mean, and standard deviation of subjects grouped by overall QLI and subscales (N=60)

Variable	Range	Mean	SD
Overall QLI	**10.85-28.39**	**19.59**	**3.22**
Health & functioning	8.42-29.42	19.62	4.00
Psychological/spiritual	8.21-28.79	19.24	3.80
Socioeconomic	10.78-27.67	19.70	3.38
Family	12.38-30.00	23.58	4.01

Table 7 showed the range of overall quality of life was between 10.85 to 28.39 with a mean value of 19.59 and standard deviation of 3.22. Among the subscales, family domain had the highest score with a mean of 23.58 and standard deviation of 4.01, while psychological/spiritual domain obtained the lowest score with a mean of 19.24 and standard deviation of 3.80.

Table 8

Level of quality of life of subjects

Level of QOL	Frequency	Percentage
Low level	-	-
Moderate level	36	60
High level	24	40

Table 8 showed the subjects, the greatest percentage (60%), perceived that quality of life was at the moderate level and 40% fall in the high level.

Part IV Relationship between social support and quality of life of the subject

To examine the relationship between social support and quality of life among renal transplant patients, the Pearson product-moment correlation coefficient was used and the results were shown in table 9.

Table 9

Pearson product-moment correlation coefficients among QOL and social support (N=60)

	PRQ	QOL	D1	D2	D3	D4
PRQ	1.000					
QOL	.577**	1.000				
D1	.405**	.900**	1.000			
D2	.470**	.880**	.721**	1.000		
D3	.499**	.801**	.587**	.691**	1.000	
D4	.319*	.540**	.342**	.349**	.594**	1.000

* $p < .05$; ** $p < .01$

PRQ = social support score
QOL = overall score of quality of life
D1 = health and functioning domain
D2 = psychological/spiritual domain
D3 = socioeconomic domain
D4 = family domain

Table 9 demonstrated that social support was significantly and positively associated with the quality of life (r =.577, p <.01). It suggested that the higher the subjects perceived social support, the higher quality of life they had. The relationships between social support and four domains of quality of life also positively associated with health and functioning, psychological/spiritual, socioeconomic, and family domains at different moderate levels (r =.405, p <.01; r =.470, p <.01; r =.499, p <.01; and r =.319, p <.05, respectively.

Discussion

The discussion of this study was organized into four parts according to the study objectives.

Part I Demographic characteristics

Sixty renal transplant patients participated in this study. The average age of the subjects was 40.98 (SD=11.82) years old. Majority of them were in the age ranged between 31 to 50 years. More than two third of the subjects (70%) were male and 30% were female. These demographic characteristics were congruent with the incidence trend of ESRD (Chen, 1997). It has been considered that a strong feature of ESRD is that it occurs in young adulthood during peak years of education, career development, family life, and when individuals are assuming many social and economic responsibilities (Chen, 1997).

Majority of the subjects (75%) were married and lived with spouses and children (66.67%). Most of them (85%) reported they had good relationship in their families. All of these were conformed with the family and marriage model in the Chinese culture. Nearly half of subjects (48.33%) finished high school level and 25% of subjects had university education or higher. This educational status was higher than that of general population (Zhong, 1996). It might be explained that there were more male than female subjects in the present study subjects since according to Zhong (1996), the average educational status of man is higher than that of woman in China.

After receiving transplantation, the unemployment rate increased from 3.33% up to 28.33%. This could be reasonably explained that the unemployment rate has dramatically increased in China within recent years due to economic problem. Most working units or agencies are likely to avoid employing the " sick employees" (Shao, 1999). More than half of subjects (68.34%) partially received reimbursement about seventy to eighty percent of their medical fee , while 28.33% of subjects were totally paid by themselves, and only 3.33% had total reimbursement.

As posttransplantation time went on, the percentage of subjects become less that 50% subjects were between three months to one year, 23.33% and 16.67% were between one to two and two to three years, respectively, only 10% subjects were more than three years. This was congruent with the practical follow-up order in this transplantation center that transplant recipients should come to the hospital outpatient department for follow-up once a month, then within the first year of posttransplantation, would be one time in two months and be scheduled at longer than two months for more than one year recipients. The long-time survivors also become less with time going on because 3-year and 5-year survival rate were only 85% and 75%, respectively (Xue, 1997).

Part II Social support of renal transplant patients

The result of the study indicated that the subjects perceived their social support with a mean score of 92.98 (Table 5), which more than half of subjects (61.67%) perceived high level and 36.67% of subjects rated moderate level of social support. Regarding the sample characteristics, majority of subjects (70%) was male and 75% subjects were married. Most of them (85%) reported that they had good family relationship. Primomo, Yates and Woods (1990) reported that spouse was the most important group in providing social support. The result indicating a high level of social support in this study was consistent with Gulick's (1994) study that men, compared to women, are more likely to identify spouses than other persons as their confidant and sources of social support. From the other points of view, most subjects (31.67%) age ranged from 41 to 50 and 28.33% from 31 to 40 years old. During this period of life, most people usually have many and broad social network besides colleagues, spouses, children and parents they might also have living sibling sisters or brothers. Also, in China, men at this age group are usually considered the householders or key persons in the family who always receive more support from their family members (Li, 1997).

Thirty subjects (68.34%) received reimbursenent about 70 to 80 percent of their medical fee, two subjects (3.33%) had totally reimbursement and only 28.33% subjects totally paid the medical fee by themselves. Therefore, the tangible support was quite high in this group of subjects. This finding was contrasted to the findings of Cox and Verdieck (1994). It might be because there was a national regulation in China that all employers including both government and private should reimburse the medical fee for their employees although they were unemployed currently.

The majority of subjects received transplantation for less three years and only 10% of them were more than three years (Table 4). This was another convincing data to support the highly perceived social support among this group of subjects because O'Brien (1993) described that subjects with longer period of illness in years perceived less social support than those subjects with shorter period of illness. This was also supported by the notice of the researcher when contacted with subjects for data collection that almost all subjects were accompanied by their either family members or relatives. Friedman (1993) stated that both emotional and tangible support from family members was related to more satisfaction with life than from nonfamily sources.

However, there were 36.67% of subjects perceived their social support at moderate level. To some extent, this might be explained by one characteristic of these subjects that the unemployment rate obviously increased from 3.33% before transplantation to 28.33% after transplantation. O'Brien (1993) stated that subjects who were employed reported more perceived social support than did subjects who were not employed. This might be resulted from the absence or disruption of attachment and social integration of them.

One subject, a 19 years old undergraduate university student, rated his social support at a very low level. Melzer and colleagues (1989) found the adolescent renal transplant patients identified significantly fewer people in their total social networks and their perceived social support obviously decreased. It can be explained by the possible reasons that the adolescent recipients are more sensitive to their altered appearance and tend to change perceptions about themselves. Especially they are unsure about their sexual attractiveness or desirability, therefore, are likely to isolate themselves from the society (Beer, 1995).

Part III Quality of life of renal transplant patients

The perceived quality of life of renal transplant patients (N=60) was measured by the instrument of Ferrans and Powers Quality of Life Index-Kidney Transplant Version in this study. The results of overall quality of life and its subscales were discussed as follows.

Overall quality of life

The results showed that the subjects rated their overall quality of life at moderate to high level (table 8) with the mean score of 19.59 and standard deviation of 3.22 (Table 7), more than half of subjects (60%) rated their overall quality of life at a moderate level, and 40% of subjects rated at a high level. This finding was consistent with other researches which examined the quality of life of ESRD patients in relation to the treatment modality. For instance, the quality of life was higher for transplant recipients than for those receiving other treatment modalities (Molzahn, 1991; Evans et. al., 1985; Johnson, McCauley & Bopely, 1982; Simmons, Anderson, & Kamstra, 1984).

The majority of renal transplant patients (60%) in this study indicated that they enjoyed a moderately acceptable quality of life. This finding suggested that the recipients underwent a period of adjustment and adaptation that was influenced by their experiences with a life-threatening illness. During this period, a reappraisal or reassessment of life values occurred which positively affected their perception of the quality of life (Belec, 1992).

This result also could be explained that ESRD and its treatment were known to cause major changes in patients' lives, nevertheless, the quality of live scores might reflect long-term adjustment to live with ESRD. It was found that 63% of patients changed their life goals after starting dialysis treatment. Their goals changed in the following ways: (a) career and monetary goals decreased, (b) goals related to personal independence decreased, (c) family relationship goals increased, and (d) goals changed to focus on living for today (Ferrans and Powers, 1993).

When compared with other studies, the mean score of overall quality of life was slightly lower, and more than half (60%) fall in the range of moderate level of overall quality of life. The mean score of quality of life reported in Ferrans and Powers' study (1993) in 349 hemodialysis and transplant patients by using subjective measure of other instruments found that renal transplant recipients had a normal quality of life when compared to quality of life of a general American population. It was not surprised about these differences since the previous studies were conducted in Western countries, while this study was done in China.

The different social demographic characteristics and different culture could dramatically cause difference in perception of quality of life.

Quality of life in the four domains

In this study, the subjects rated the family domain with the highest mean score, then followed by socioeconomic, health and functioning, and psychological/spiritual domains (Table 7). Almost all of the items of the family subscales were within the top five and six rankings for both satisfaction and importance. This finding was consistent with Ferrans and Powers' study (1993) that hemodialysis patients were more satisfied with the things they valued in the family domain than in the other three domains.

Regarding health and functioning domain, some patients complained that their physical health were not satisfactory, however, the mean score (M = 19.62) was at a moderate level. This could be partially reasoned by the dramatic improvement in health experienced by persons who were very ill prior to transplantation. The perception of average to excellent health status may reflect a process of redefining normal in which patients recognize and accept the realistic of a different life and evaluate their health status based on different expectations (Hicks, Larson, & Ferrans, 1992).

In reviewing score of socioeconomic domain, it was found that the recipients rated their socioeconomic scores at a relatively higher level than health and functioning, and psychological/spiritual domains. The possible reasons for this finding were that most of subjects in this study could partially or totally receive reimbursement for their medical fee, and that 90% of subjects were within 3 years after transplantation. Regarding the same finding, Belec (1992) explained that soon after the transplant, recipients might place greater emphasis on their physical recovery. Later on, socioeconomic or other issues might become more important, and many recipients might dissatisfy with these. Another explanation was that, in China, ESRD patients commonly chose the transplantation as treatment modality according to their basic economic status. Only those patients who thought they could be able to bear the expense chose as transplantation. This point was further supported by the data of family income among this study subjects.

In comparison between psychological/spiritual domain and others, subjects rated this domain at the lowest level among four domains with a mean score of 19.24, and standard deviation of 3.8. This indicated that the general perception of the psychological/spiritual domain is relatively low. It could be explained by combining the social demographic characteristics and negative side of transplantation modality. Firstly, in general, the average educational background of this group of subjects was higher than that of general population. As Ferrans and Powers (1985) found that highly educated dialysis patients felt dissatisfaction about their lives because they had invested heavily in their education and may have been hindered in achieving their goals, due to the hours spent on outpatient department follow-up and management of complex regimen. Secondly, obvious increase in the unemployment rate was also a reason to explain the dissatisfaction in psychological aspect. Campbell (1981) suggested that the psychological trauma of being without a job and the diminished sense of control over life always accompanied the unemployed individuals. Moreover, Ferrans and Powers (1993) stated that psychologically dissatisfied people usually anticipate the spiritual dissatisfactory.

Part IV Relationship between social support and quality of life among renal transplant patients

The hypothesis in present study was that there was a positive relationship between social support and quality of life among renal transplant patients. Using Pearson product-moment correlation coefficient statistically tested this hypothesis, the result showed that there was a significantly positive relationship between social support and quality of life (r =.577, p <.01). It indicated that the subjects perceived slightly high level of social support, they rated high level of quality of life. It was in further separately to analyze the relationship between social support and four domains of quality of life. The results showed social support at moderate level was positively associated with health and functioning, psychological/spiritual, socioeconomic, and family domains of quality of life, respectively.

Weinert and Tilden (1990) proposed that three hypotheses were related to the action of social support: a) social support may prevent stress, b) social support buffers or cushions stress, and c) social support may have a direct positive effect on health and other aspects of life. The social network may influence health outcomes directly by providing access to information or by enhancing motivation to engage in adaptive behaviors. Cohen and Wills (1985, cited in Cohen, 1988) stated that social support is important to individual's well-being resources throughout the life course. Social support may promote patient's self-care ability and improve psychophysiological well-being.

The finding of this study was consistent with the study among 74 Chinese COPD patients by Yan (1997) in which there was a moderately positive relationship between social support as measured by PRQ-85 Part 2 (Weinert & Brandt, 1987) and quality of life (r =.467, p <.001) measured by Quality of Life Index (Padilla & Grant, 1985). Another study of relationship between social support measured by Norbeck Social Support Questionnaire and health related quality of life among 256 dialysis patients by Tell and associates (1995) also revealed that the higher the perceived social support, the better the reported and observed functional level; good social support was associated with less limitations in leisure time activities, with better feelings about life and with better life satisfaction.

The findings of present study were also accordance with other previous studies (Johnson, 1996; Primomo, Yates, & Woods, 1990). In Johnson's study (1996) of 82 older rural adults found a strong positive correlation existed between the number of people providing social support and the perception of good physical health (r =.83, p <.001), and between level of social support and good health (r =.81, p <.001). The more people in the social network and the higher the level of social support, the better the perception of one's health. Further analysis revealed that those who were married indicated better health with more social support than those who were not married with the same level of support (r =.81, p <.001). In a study of 125 chronic illness women, Primomo, Yates, and Woods (1990) noted that the subjects received more support from partners and family also felt less depression and had higher marital quality.

Above findings further supported the study conducted by Friedman (1993) who found that women with heart disease who received support from family members were more satisfied with life than those who received support from nonfamily members. Majority of subjects in this study were married and had good relationship with their family members. As Johnson (1996) stated that spouses often provided needed assistance with activities of daily living, emotional support, and nurturance that mediated the various stressful influences on patients.

Courtens, Stevens, Crebolder, and Philipsen (1996) explained that the perception of being cared for or loved and appreciated could contribute to a positive feeling of health. On the other hand, it was possible that a better quality of life led to more social support. It might be easier for network members to deal with a patient who was getting better.

Therefore, the finding of a slightly high positive relationship between social support and quality of life in the present study was consistent with a number of previous studies. The also added to the growing literature suggesting that social support meaningfully influenced not only the experience and course of disease but also global quality of life.

Further considerations of the relationship between social support and different domains of quality of life showed that social support was positively correlated with all domains of quality of life at different moderate levels. Schaefer, Coyne and Lazarus (1981) proposed that social environment as a resource mediates the relationship between stress and health; conversely, lack of social support contributes to physical illness and psychopathology.

Firstly, social support was positively associated with the health and functioning domain ($r = .405$, $p < .01$). Several possible explanations might be accounted for this finding. Bloom (1990) stated that an important dimension of quality of life is physical health and functioning, which could be influenced by social support for example through encouraging the individuals to comply with treatment recommendations, to maintain health promoting behaviors such as exercise and proper nutrition. O'Brien (1980, cited in Tell et al., 1995) found that there was a relationship between higher social support and greater adherence to the treatment protocol; consequently, it promoted and improved health status. Dimond (1980, cited in Gurklis and Menke, 1995) reported that social support could enhance the morale of hemodialysis patients, therefore, these patients might positively assess their progresses in managing their physical health and functioning.

Secondly, social support was also at a moderate level to correlate with psychological/spiritual domain in this study. Ferrans and Powers (1985) identified that psychological/spiritual domain having concern about stress, usefulness to others, goal, self-esteem, personal appearance and peace of mind. Regarding these components, the finding of the current study was supported by Warren's study (1997) in which the depression, stressful life events and self-esteem were used as the indicators of psychological/spiritual well-being to examine the relationship between them and social support. The result showed that there was a negative relationship between social support and stressful life events and depression ($r = -.52$, $p < .01$). Many subjects in present study stated that when compared with the others patients who suffered from the failed transplantation, they are very lucky, and God blessed them. Therefore, spiritual support seems to be important in keeping peace of mind of these patients.

Thirdly, the result statistically indicated that social support was most correlated with socioeconomic dimension among four domains of quality of life (Table 9). This finding fits within the supporting typology of Cohen (1988) that certain types of social support affected life satisfaction only in situations where the type of support was particularly salient. As Frey (1990) reported that medical cost was one of the crucial problems faced by renal transplant patients. The medical payment of most subjects in the current study was totally or between 70 to 80 percent paid by agencies or work units. Undoubtedly, this tangible support could greatly improve patients' economic crises and reinforce their feelings of being actually supported; therefore, improved their quality of life from one aspect. The individual's integration into the social fabric of society was critical to his health and well-being. Persons without such integration were likely to experience a sense of isolation and loneliness (Bloom, 1990). Although there was a high unemployment rate after transplantation in this study, the patients might convert their social network from work units to other areas. As some patients described that they could be able to do what they want to do without the limitation of the work units.

Lastly, social support was also positively correlated with family domain in this study. This finding was congruent with many previous studies that family was the main resources of social support and most significant to patients (Friedman, 1993). Weinert and Tilden (1990) mentioned that social support has been demonstrated to relate to dimensions of family processes such as marital adjustment and family well-being.

Considering of the conceptual framework of this study, the concepts of social support derived from Brandt and Weinert (1981), and quality of life from Ferrans and Powers (1985) were used. As Brandt and Weinert stated that each dimension of social support provides different benefits to patients. Intimacy and social integration directly provide a set of identities and basis for a sense of being loved, accepted, comfortable and enjoyment. Opportunity for nurturant behavior and reassurance of worth provide a source of positive self evaluation and give sense of being needed and competence. Consequently, social support improved perception of patients about the quality of life from health and functioning, psychological/spiritual, socioeconomic and family aspects. The findings of this study showed a moderately positive relationship between social support and overall quality of life, and its four domains among renal transplant patients. This result supported the hypothesis and was accordance with the conceptual framework.

Summary of the results

In summary, the following results were obtained from this study. The renal transplant patients perceived a moderate to high level of social support. They also rated their quality of life at moderate to high level. Subjects perceived most support from family domain with gradually decrease to socioeconomic and health and functioning domains while psychological/ spiritual domain was perceived least, respectively. It was validated that there was a significantly positive relationship between social support and quality of life among renal transplant patients. Furthermore, social support was positively correlated with four domains of quality of life in a descending order as socioeconomic, psychological/spiritual, health and functioning, and family domains.