CHAPTER 4

FINDINGS AND DISCUSSION

This descriptive research design was conducted to describe demographic data and quality of life(overall and each dimensions)among traumatic amputees.

Findings

The findings from this study are presented in two parts:

Part I Demographic data

Part II Quality of life (overall, each dimensions: life satisfaction, self-concept, health and functioning and socio-economic factors)

Part I Demographic data

Eighty-three Chinese amputees were recruited from the Out-Patient Departments of three teaching hospitals of China Medical University and from their homes in Shenyang, People's Republic of China. The detailed demographic characteristics of the subjects are presented in Table 1-4.

Table 2

Frequency and percentage of subjects grouped by sex, age, marital status, and educational level

Characteristics	Frequency (N=83)	Percentage (%)
Sex		
Male	63	76.0
Female	20	24.0
Age (Mean 37.6, S.D. 13.5)		
15-20	8	9.6
21-30	18	21.7
31-40	24	28.9
41-50	14	16.9
51-60	12	14.5
61 and above	7	8.4
Marital status		
Single	15	18.0
Married	59	71.0
Widow/Divorced	9	11.0
Educational Level (year)		
No education	3	3.6
Primary (6 years)	14	17.0
Junior (9 years)	39	47.0
Senior (12 years)	17	20.4
College/Univ.(>13 years)	10	12.0

Table 2 revealed that more than half of the subjects (n = 63, 76%) were male. Twenty-four (28.9%) subjects were mostly found in the age range of 31 to 40 years and only seven subjects were above 60. The average age is 37.6 years. Most Subjects were married (71%). Almost half of the subjects (n = 39, 47%)were educated to a junior high school level. 10 subjects (12%) received university or above education.

Table 3

Frequency and percentage of subjects grouped by occupation, average income, income resource, adequate income, family status and treatment payment

Characteristics	Frequency (N=83)	Percentage (%)
Occupation		
Worker	40	48.4
Teacher	2	2.4
Office staff	5	6.0
Government staff	10	12.0
Businessman	4	4.8
Soldier	1	1.2
House wife	2	2.4
Farmer	5	6.0
Unemployment	13	15.6
Student	1	1.2
Average income		
Less than 250	19	22.9
250-499	41	49.4
500-1000	19	22.9
more than 1000	4	4.8
Income resource		
By self	67	80.7
Received from others	16	19.3
Adequate income		
Enough	23	27.8
Fair	41	49.3
Not enough	19	22.9
Family status		
Leader of the family	61	73.5
Member of the family	22	26.5
Treatment payment		
Total reimbursed	23	27.7
Partial reimbursed	29	35.0
Total self-paid	31	37.3

Table 3 revealed that almost half of the subjects were workers (n = 40, 48.2%). Most of the subjects (n = 60, 72.3%) had less than 500 Yuan per month income. Most of the subjects (n = 67, 80.7%) earned their income by themselves. Forty-one subjects (49.3)had a fair living, while nineteen subjects (22.9%) found that their income was insufficient. The majority of the subjects (73.5%) were leaders of their families. Only twenty-three subjects (27.7%) had total reimbursement for their medical treatment.

Table 4

Frequency and percentage of the subjects grouped by cause of traumatic amputation, underlying diseases and duration of amputation

Characteristics	Frequency (N=83)	Percentage (%)
Cause of traumatic amputation		
Motor vehicle accident	20	24.2
Work-related accident	47	56.6
Others	16	19.2
Underlying Diseases		
Heart diseases	5	6.0
Lung diseases	3	3.6
Others	4	4.8
None	71	85.6
Duration of amputation		
Less than 12 months	14	16.9
13 - 24 months	10	12.1
25 - 36 months	12	14.5
more than 36 months	47	56.5

Table 4 revealed that half of the subjects (n = 47, 56.6%) were amputated because of work-related accidents and twenty subjects (24.2%) were amputated because of traffic accidents. Most subjects (n = 71, 85.6%) had no underlying diseases.A few cases had heart (n = 5, 6%) and lung (n = 3, 3.6%) diseases. Over half of the subjects (n = 47, 56.5%) had had their amputation more than 36 months.

Table 5

Frequency and percentage of the subjects grouped by level of amputation,dominant arm function and prostheses devices

Characteristics	Frequency (N=83)	Percentage (%)
Level of amputation		
One leg	43	52.0
Below knee	13	15.7
Above knee	24	28.9
Hip disarticulation	6	7.2
One arm	31	37.2
Below elbow	16	19.3
Above elbow	8	9.7
Shoulder disarticulation	7	8.4
Two legs	6	7.2
Below knee	3	3.6
Above knee	3	3.6
Two arms	1	1.2
Two legs and one arm	1	1.2
One leg and one arm	1	1.2
Dominant arm function		
Total amputated arms	34	
None dominant arm	12	35.0
Dominant arms	22	65.0
Prosthesis devices		
Arm		
Above elbow	6	7.2
Below elbow	4	4.8
Leg		
Above knee	17	20.5
Below knee	10	13.0

Table 5 showed that over half of the subjects (n = 43, 51.8%) had only one leg amputated and thirty-one subjects(37.4%) had one arm amputation.

Over half of the subjects (n = 46, 54.5%) had no prosthesis devices whereas thirty-seven subjects (45.5%) had replaced their limbs with prostheses. Among the thirty-four arm amputated subjects,twenty-two subjects (65%) had lost their dominant arm function.

Table 6

Range, mean, standard deviation, and level of quality of life among traumatic amputees (N= 83)

Category/Subcatagory	Range	Mean	S.D.	Level
Total AQLQ	81-220	135.3	32.60	Moderate
Life satisfaction	15-40	34.0	8.29	Moderate
Self-concept	19-61	36.7	11.28	Low
Health and functioning	23-72	35.2	11.28	Low
Socio-economic factors	16-39	26.0	7.80	Moderate

Table 6 showed the mean score of overall and each dimension of quality of life: life satisfaction, self-concept, health and functioning and socio-economic factors were 135.3(SD = 32.6), 34(SD = 8.29), 36.7(SD = 11.28), 35.2 (SD = 11.28) and 26(SD=7.8) respectively. It also showed the range of each dimension. The overall and the dimension of life satisfaction and socio-economic factors were at a moderate level, and the dimension of self-concept and health and functioning were at a low level.

Table 7

Frequency and percentage of level of overall quality of life

Level of overall quality of life	Frequency (n=83)	Percentage (%)
Low	37	44.5
Moderate	40	48.3
High	6	7.2

Table 7 showed that nearly half of the subjects (n=40,48.3%)were at a moderate level of overall quality of life and 44.5 percent of them were at a low level.

Table 8

Frequency and percentage of level of life satisfaction dimension.

Level of life satisfaction dimension	Frequency (n=83)	Percentage (%)
Low	33	39.8
Moderate	44	53.0
High	6	7.2

Table 8 showed that over half of the subjects (n = 44,53.0%) were at a moderate level of life satisfaction dimension and 39.8 percentage of them were at a low level.

Table 9

Frequency and percentage of level of self-concept dimension

Level of self-concept dimension	Frequency (n=83)	Percentage (%)
Low	50	60.2
Moderate	33	39.8
High	0	0

Table 9 showed that over half of the subjects (n = 50, 60.2%) were at a low level of self-concept dimension and 39.8 percentage of them were at a moderate level.

Table 10

Frequency and percentage of level of health and functioning dimension

Level of health and functioning dimension	Frequency (n=83)	Percentage (%)
Low	59	71.1
Moderate	24	28.9
High	0	0

Table 10 showed that most subjects (n = 59,71.1%) were at a low level of health and functioning and 28.9 percentage of them were at a moderate level.

Table 11

Frequency and percentage of level of socio-economic factors dimension

Level of socio-economic factors dimension	Frequency (n=83)	Percentage (%)
Low	35	42.2
Moderate	43	51.8
High	5	6.0

Table 11 showed that forty-three subjects (51.8%), were at a moderate level of socio-economic factors dimension and 42.2 percentage of them were at a low level.

Discussion

The discussion is presented in the following two parts, demographic data and quality of life (overall and each dimensions: life satisfaction, self-concept, health and functioning and socio-economic factors).

Part I Demographic data

There were 83 amputees in this study. The majority of the subjects were males (n=63, 76%). This was congruent with Verdell's report (1992) that amputation in men was frequently due to trauma. The average age of the subjects was 37.6 years old (SD=13.5). The largest age group was 31 to 40 years old (n=24, 28.9%) (Table 2). Approximate half of

the subjects (n=40, 48.4%) were workers,and thirteen-subjects (15.6%) had no job. About half of the subjects (n=39, 47%) received junior school education (9 years of school).That was the general requirement educational level in China. Only ten subjects (12%) were educated at a university level.The majority of the subjects (n= 47, 56.6%) were amputated due to work related accidents and twenty subjects (24.2%) were amputated because of motor vehicle accidents. According to Danaidutsadeekul's report (1999), accidents resulted from a lack of security knowledge and protection regulation, carelessness and low education. This result was consistent with Ignatavicious, Workman and Mishler (1995) that the largest group having traumatic amputation consisted of young men who experienced motorcycle or other vehicular accidents or who were injured at work by industrial equipment.

For the average income, nearly half of the subjects (n=41, 49.4%) had 250 to 500 Yuan income per month,and their earned money was supported their livings. Only nineteen subjects had less than 250 Yuan income per month and they faced economic problems. This could be explained by the fact that in China, a person's monthly income depended on their salary and bonus. For the amputees, even though their amputation was caused by work-related accidents, when they could not go back to work, they could just get their salary without the payment of the bonus. In this way their income was unavoidably reduced.

Most of the subjects in this study (n=59, 71%) were married which is in accordance with the traditionally and

culturally defined family type and family relationship in China. Most of the unmarried among the 18% unmarried were under the marriageable age. Amputation is not a major reason for remaining unmarried or for divorce.

The majority of the subjects (n=61, 73.5%) were leaders of their families who had multiple roles of high responsibility and heavy work loads due to taking care of older and younger ones at the same time because the majority of the subjects were in their young or middle adulthood. That means that their family income mainly depended on them,and they were the bread providers. For a leader of the family, if they have no enough income for the family, the problem of poverty makes living more difficult for their whole family. (Danaidutsadekul, 1999). This result can further explain why 49.3% of subjects had a fair living and 22.9% of subjects had an insufficient living.

Also only twenty-three subjects (27.7%) had total reimbursement of medical fees. So medical expenses had become a problem for most of the amputees. Most of the subjects (n=71, 85.6%) reported that they had no underlying diseases. This can be explained by the fact that they were healthy besides the amputations by the accidents.

For the level of the amputation, nearly half of the subjects had only one leg amputated (n=43, 52%) and thirty-one subjects had arm amputation (37.2%), whereas those (n=9) who had more than 1 arm or 1 leg amputated form approximately 10.8%. The number of leg amputations was more than that of the arm amputations. Work-related accidents and traffic accidents caused all of the arm-amputated subjects.

All such results were similar with that of Verdell (1992) that amputation of the lower extremities were performed more frequently than amputation of the upper extremities and that the most common indication for amputation of the upper extremities was the severe trauma (Luckmann and Sorensen, 1980) and those who had more than one arm or leg amputated were caused by electrical short circuits (Danaidutsadeekul, 1999).

Among the thirty-four arm amputated subjects, twenty-two subjects (65%) lost their dominant function arms due to the traumatic amputation.This result was consistent with Danaidutsadeekul's (1999) that over half of the subjects lost their dominant functional limbs due to accidents.

Part II Quality of life of amputees

Overall quality of life

The result of this study showed that the total mean score of overall quality of life was 135.3 (S.D.=32.60).Forty subjects (48.3%) were at a moderate level, and 44.5 percentage of them were at a low level. The mean score of this study compared with other studies seemed to be lower. This might be explained by the fact that amputees had to face more physical, psychological and social problems than other patients. A traumatic amputation has been perceived as a crisis of life (smitherman, 1981). Amputees suffer a more acute state of crisis in reaction to an obvious loss of body part,and body functioning. Losing an

extremity at any level is similar to experiencing the death of a loved one (Patkes, 1975).

It can also be further explained by the fact that firstly, the average age of the subjects was 37.6 years' old which is in the young adulthood,sixty-three of the subjects were male, and fifty-nine subjects were married. This indicated that most of the subjects took more responsibility for the family and they were more active in social, recreational, and some other activities to meet their needs.However their limited physical capacity restricted their participation in many activities they gave them up entirely because they lacked the limbs to help them to keep balance.

Secondly, all the subjects were amputated because of traumatic reasons. This kind of amputees had more problems and needed more time to adjust to their situations.According to the study of psychological effects on amputation caused by cancer and trauma of Boyle, Tebbi, Mindell,and Mettlin (1982), the patients with amputations due to cancer differed from traumatic amputees in their adjustment to amputation. The majority of cancer amputees adjust better to their circumstance and lead fuller and more productive lives than traumatic amputees. Their quality of life was reduced mainly secondary to the poor adjustment to amputation.

Third, twenty-two subjects (65.0%) among thirty-four arm amputees lost their dominant arm function. This indicated that it would affect their lives extremely as they could not do their previous job or need more time to adjust

or rehabilitate and indicated that the disability was more serious (Danaidutsadueel, 1999).

Fourth,twenty-four subjects had above-knee amputation which was the significant part.This was consistent with Medhat's study (1990) that the persons with above knee amputation showed more problems in daily living, social participation, sexual functioning and athletic participation than persons with below knee amputation which lowered their quality of life.

Fifth, although most subjects were amputated due to work-related accidents, they would not lose their job based on China government policy. However,if they could not return to their previous jobs, or take sick leave, they would just get a salary without a bonus which is a major part of income for the Chinese working class (Yang & Wang, 1999).Also, actual income for the majority of the subjects was reduced, forty-one subjects(49.4%) got 250 to 499 Yuan income per month, and nineteen subjects (22.9%)had less than 250 Yuan income per month.So for the sixty-one family leaders, their living could be just maintained at a fair level which lowered their quality of life. All these facts helped to explain why the overall of quality of life was at a moderate level.

Dimensions of quality of life

Life satisfaction dimension

The mean score of life satisfaction in this study was 34.0 (S.D.= 8.29) which was at a moderate level. This can be explained that although firstly, family care plays a

major role in increasing subjects' life satisfaction, such as the receiving family care after amputation, getting love and care from the family, having a warm family, and feeling happiness with the family. The love, care and support from the family members could help them overcome these obstacles in their life. Secondly this could be explained by the fact that Chinese people are affected by the traditional Chinese culture in which family members should help and support their members when they become ill. Thirdly, Chinese family relationship are very close, and in some families people from four generations live together.

Nevertheless, due to the loss of a body part, loss of body function, experiencing the changes of life style, the changes of individual roles in family and society, and the changes of socio-economic status, the subjects were not satisfied with their present life, did not feel safe and secure, felt much suffering, faced many obstacles in their life, and could not receive everything they wished for because of their physical inability. All these explained why their life satisfaction was at a moderate level.

Self-concept

In self-concept dimension, the mean score was 36.7 (S.D.=11.28)and majority of the subjects(n=50,60.2%) were at a low level (see Table 9). The result was similar with the study of Cheng Yun(1998) that body image of the majority of the post-operative hand injury patients was lower.

This could be explained that although amputees felt better, expected to live normal lives with amputation, had more hope as time goes by after the amputation, and they

were not a burden for their families, they felt important for their families, because most amputees were men (76%). This was consistent with traditional Chinese families that most men were the householders who were leaders of their family. However the mean score of self-concept was still at a low level for the following reasons: First, subjects reported the lowest mean score in the area of being religious persons. This may be because the majority of Chinese people do not hold any religious beliefs. They do not perform any religious rites or pray, because they do not think that it is useful or helpful. So they had not a spiritual belief that God would bless them.

Second, traumatic amputees were not satisfied with their appearance due to amputation. The reasons for this result might be that amputation is perceived, in most cultures and countries, not only as loss of the body part, loss of body function, loss of health, but as disfigurement and disgrace (Smithermann, 1990). Moreover physical attractiveness is almost essential for living in a competitive world. The youthful, beautiful, intact body is upheld as the ideal to the public (Luckmann and Sorensen, 1990). So amputation could affect the amputees' satisfaction with their physical appearance, and furthermore impair their body image, and ultimately lead to low self-esteem.

Third, traumatic amputees did not feel valuable and useful to society and to their roles. This could be explained by the fact that amputees could be classified as disabled and they became dependent in some activities of daily living. This state of dependence is in conflict with a

persons'drive for self-direction and self-reliance (Medhat, 1990). When dependence affects significant life processes, it can result in varying degrees of negativism. This could also be explained by the fact that amputation had a strong impact on social well-being, which were the changes of life style, changes of the individual role in the family and society.Expected roles both in family and society must be adapted so that they can be performed with less difficulty (Danaidutdeekul, 1999).

So being not satisfied with their appearance, feeling not valuable and useful for society and their roles, feeling irritated and receiving bad luck since receiving amputation explained that their self-concept was at a low level.

Health and functioning dimension

The mean score of health and functioning was 35.2 (S.D.=11.28).That was at a low level. The result was consistent with Zhang's study that hemodialysis patients also perceived their health and functioning as the lowest level among the four dimensions.

Although the subjects reported that they complied with treatment and adhered to the physician's orders, most of the subjects had been educated at higher than primary school levels, and this could lead them to follow the treatment regimen that plays an important role in preventing complications and promoting rehabilitation after amputation. However, the following aspects could explain the reasons why health and functioning was at a low level:twenty-two subjects lost their dominant arm function that was necessary

for them to perform their work. They needed more time to adjust and rehabilitate to go back to work. Their limited physical function affected their economic status by changing their work role and career.The subjects had the lowest mean score in joining and meeting friends as usual. They often had to restrict their participation in many activities or give them up entirely because they lack the limbs to help them to keep balance for some activities. This is consitent with Campbell, Converse and Rodgers (1976) that poor health had the greatest impact on quality of life when it prevented people from doing what they wanted to do.

Subjects could not get on a bus or bicycle or function well in public places as usual. This can be explained by the fact that in public places,there is no convenient equipment for handicapped persons such as the parking lots,and equipment for getting on the bus, toilets etc. There are no special modes of transport for them. So it is very difficult for the amputees to ride regular bicycles which is the major mode of transport in China.

Subjects described that they were not able to work and study as usual. This result was the same as that of Livingston (1990) who stated that the rate of return to work was poor. Most persons with amputations do not resume a completely normal life. Amputees lost limbs that are the most important parts for activities of daily livings.

Having the ability to exercises was another reason which the subjects perceived as being low. This result was congruent with that of Medhat's study. He stated that all athletic activities were problematic for these subjects.

Because athletic activities need skills to balance. However the amputees lack the capacity to keep the body balanced, especially the lower extremity amputees.

Furthermore,the subjects had a low mean score in having normal sexual activities. This could be explained by two possible reasons. Firstly the expression of one's sexual life in China is not acceptable and sexual issues are very sensitive. Many Chinese people do not discuss or express their sexual feelings to the others. Secondly sexual function might be affected by the sex desire, sexual positioning, partner response because of the loss of extremity (Brow, 1992).

So this explains why the health and functioning dimension was at a low level.

Socio-economic factors

The socio-economic factors dimension was at a moderate level (mean=26.0,S.D.=7.80).

This result could be explained by the fact that although most of the traumatic amputees had no indebtedness since amputation and they did not worry about losing their job due to amputation because of government policy. However, the item of having enough income for living got the lowest score. This could be explained by the fact that most of the subjects belonged to a low socio-economic status,and 54% of the subjects were labors, 15.6% had no job and depended on their family. Almost half of the subjects (49.4%) had only 250 to 499 Yuan income per month. This result is congruent with that of Livingston's study. He stated that most

patients who returned to work received less salary than before. In China, Most people's income do not just only depend on the fixed salary, but also the bonus. If a person had an amputation, although it is a work related accident, the subjects could get a sick leave without a cut in their salary, but in fact he/she had less income because of having no bonus, so in fact the item of taking sick leave without a cut of pay had the lowest mean score. In Ferrans and Powers (1993) study, financial aspects of life were found to have a negative impact on quality of life. In patients' comments, lack of money to provide for basic needs caused severe suffering. Income showed a statistically significant relationship in respect to quality of life (Morgan, 1990).According to Wang, et al (1995)showed that patients receiving reimbursement had a higher quality of life than those who had to pay for the medical fees by themselves.For this study,only 23 subjects(27.7%) had total reimbursement or medical insurance.

Furthermore,most of the subjects perceived that they would be more successful if they had no amputation. This could be explained by the fact that their career and personal life were indeed affected by the amputation such as they had to end their work, or stop relationships with some significant others.

So all these explained why the socio-economic factor was at a moderate level.