

CHAPTER 4

FINDINGS AND DISCUSSION

A descriptive study was used to describe the needs of hepatectomy patient with pain and nurse responses as perceived by the patients, and to compare the difference between needs of hepatectomy patient with pain and nurse responses as perceived by the patients. Forty patients were recruited by purposive sampling.

The results of data are presented in this chapter. The presentation is divided into three parts. The first part is the demographic data. The second part is needs of hepatectomy patient with pain and nurse responses as perceived by the patients. The third part portrays comparison of needs of hepatectomy patient with pain and nurse responses as perceived by the patients.

Part A: Description of the demographic data

Forty hepatectomy patients participated in this study. The demographic data of the patients are presented in table 1, table 2, and table 3.

Table 1 Frequency, percentage of age, gender, marital status, educational level of hepatectomy patient with pain

Demographic Characteristics	Frequency (n=40)	Percentage (%)
Age (years)		
32 - 40	12	30.0
41 - 50	10	25.0
51 - 60	8	20.0
61 - 69	10	25.0
Gender		
Male	35	87.5
Female	5	12.5
Marital status		
Single	1	2.5
Married	39	97.5
Educational level		
Primary school	6	15.0
Middle school	10	25.0
High school	5	12.5
Diploma	6	15.0
Associate degree	9	22.5
Bachelor	4	10.0

Table 1 shows that most of the patients (87.5%) were male with the age ranged from 32 to 69 years old and about half of them (45.0%) were in middle adulthood. Most of the patients (97.5%) were married. Only one male (2.5%) was single. Educational level of the patients ranged from primary school to bachelor degree. The majority of them (60.0%) finished high school or higher education.

Table 2 Frequency, percentage of occupation, family income, and way of payment of hepatectomy patient with pain

Demographic Characteristics	Frequency (n=40)	Percentage (%)
Occupation		
Government service	19	47.5
Worker	9	22.5
Farmer	6	15.0
Private organization	6	15.0
Family income (yuan/month)		
300 - 1,000	14	35.0
> 1,000	26	65.0
Way of payment		
Total reimbursed/Insurance	3	7.5
Partial reimbursed	24	60.0
Total self paid	13	32.5

Table 2 shows that all patients had a job and nearly half of them (47.5%) worked as government service. Sixty five percent of them had family income more than 1,000 yuan per month. Three-fifth of the patients (60.0%) received partial reimbursed and 32.5% of them had to pay all the medical expenses by themselves.

Table 3 Frequency, percentage of treatment site, surgical incision, pain medication administration, and number of time received pain medication of hepatectomy patient with pain

Demographic Characteristics	Frequency (n=40)	Percentage (%)
Treatment site		
Affiliated Hospital	16	40.0
Cancer Center	24	60.0
Surgical incision		
Right subcostal incision	34	85.0
Midline incision	5	12.5
Right paramedian incision	1	2.5
Pain medication administration		
Morphine	1	2.5
Pethidine	31	77.5
Rotundine	1	2.5
Pethidine + Rotundine	7	17.5
Number of time received pain medication		
1	18	45.0
2	17	42.5
3	5	12.5

Table 3 shows that the two-fifth (40.0%) of the patients admitted at the First Affiliated Hospital of SUMS, and sixty percent of them admitted at Cancer Center of SUMS. The majority of the patients (85.0%) had right subcostal incision, five patients (12.5%) had midline incision, and only one (2.5%) had right paramedian incision. All patients received pain control medication during the first 48 hours after operation ranged from 1 to 3 times. Most of the medication given (77.5%) was Pethidine.

Part B: Needs of hepatectomy patient with pain and nurse responses as perceived by the patients

Table 4 Mean, standard deviation and rank of needs of hepatectomy patient with pain as perceived by the patients

Rank	Statement	Mean	SD
1	21. Nurses give medicine for pain relief to me immediately after I ask for	2.98	0.16
2	14. Nurses dress/clean my wound gently and carefully	2.95	0.22
3	4. Nurses suggest me the way to support wound during coughing and/or engaging in daily activities	2.85	0.53
4	22. Nurses evaluate the result of pain relief activities regularly	2.85	0.36
5	15. Nurses help me position myself until I am comfortable	2.83	0.38
6	12. Nurses help me have normal sleep when I feel pain	2.70	0.52
7	18. Nurses inform and encourage me to take a deep breath from my chest	2.67	0.62
8	11. Nurses understand my expression regarding pain	2.63	0.49
9	5. Nurses regularly assess my hepatectomy pain	2.62	0.54

Table 4 Mean, standard deviation and rank of needs of hepatectomy patient with pain as perceived by the patients (cont'd)

Rank	Statement	Mean	SD
10	16. Nurses help me reposition myself gently and regularly	2.62	0.59
11	9. Nurses give me emotional support when I am in pain	2.58	0.75
12	1. Nurses inform about the nature and duration of hepatectomy pain	2.55	0.75
13	6. Nurses listen to me attentively when I am complaining about pain	2.53	0.55
14	3. Nurses inform that I can ask for pain medication at any time	2.50	0.88
15	17. Nurses gradually encourage me to engage in activities of daily living by myself	2.37	0.87
16	2. Nurses inform that I can notify the nurses when I have pain	2.37	0.87
17	13. Nurses place all necessary things nearby so I can reach them easily	2.35	0.77
18	20. Nurses provide the information regarding imagination and encourage me to use it for relaxation	2.28	0.55
19	10. Nurses help me with activities of daily living during these two days	2.27	0.75

Table 4 Mean, standard deviation and rank of needs of hepatectomy patient with pain as perceived by the patients (cont'd)

Rank	Statement	Mean	SD
20	19. Nurses find out my recreational activities and encourage me to use them	2.23	0.62
21	8. Nurses are always be there with me when I am in pain	2.10	1.01
22	7. Nurses touch or hold my hand or my arm when they are with me	1.75	1.06

Table 4 shows mean, standard deviation and rank of needs of hepatectomy patient with pain as perceived by the patients. The top rank of the patients needs was, "nurses give medicine for pain relief to me immediately after I ask for", with mean score of 2.98 and the standard deviation of 0.16. "Nurses touch or hold my hand or my arm when they are with me" was least needs with mean of 1.75 and standard deviation of 1.06.

Table 5 Mean, standard deviation and rank of nurse responses to needs of hepatectomy patient with pain as perceived by the patients

Rank	Statement	Mean	SD
1	4. Nurses suggest me the way to support wound during coughing and/or engaging in daily activities	2.90	0.30
2	14. Nurses dress/clean my wound gently and carefully	2.88	0.33
3	21. Nurses give medicine for pain relief to me immediately after I ask for	2.80	0.56
4	22. Nurses evaluate the result of pain relief activities regularly	2.77	0.42
5	1. Nurses inform about the nature and duration of hepatectomy pain	2.73	0.51
6	18. Nurses inform and encourage me to take a deep breath from my chest	2.65	0.58
7	5. Nurses regularly assess my hepatectomy pain	2.60	0.55
8	12. Nurses help me have normal sleep when I feel pain	2.55	0.60
9	16. Nurses help me reposition myself gently and regularly	2.53	0.55
10	11. Nurses understand my expression regarding pain	2.52	0.64

Table 5 Mean, standard deviation and rank of nurse responses to needs of hepatectomy patient with pain as perceived by the patients (cont'd)

Rank	Statement	Mean	SD
11	9. Nurses give me emotional support when I am in pain	2.50	0.60
12	2. Nurses inform that I can notify the nurses when I have pain	2.47	0.68
13	6. Nurses listen to me attentively when I am complaining about pain	2.40	0.59
14	17. Nurses gradually encourage me to engage in activities of daily living by myself	2.40	0.63
15	15. Nurses help me position myself until I am comfortable	2.35	0.58
16	19. Nurses find out my recreational activities and encourage me to use them	2.15	0.74
17	3. Nurses inform that I can ask for pain medication at any time	2.03	0.95
18	10. Nurses help me with activities of daily living during these two days	2.03	0.77
19	20. Nurses provide the information regarding imagination and encourage me to use it for relaxation	1.92	0.66
20	8. Nurses are always be there with me when I am in pain	1.85	0.66
21	13. Nurses place all necessary things nearby so I can reach them easily	1.78	0.97
22	7. Nurses touch or hold my hand or my arm when they are with me	1.53	1.04

Table 5 shows mean, standard deviation and rank of nurse responses to needs of hepatectomy patient with pain as perceived by the patients. The top rank was, "nurses suggest me the way to support wound during coughing and/or engaging in daily activities" with mean of 2.90 and standard deviation of 0.30. The lowest rank was, "nurses touch or hold my hand or my arm when they are with me" with mean score of 1.53 and standard deviation of 1.04.

Part C: Difference of mean rank and sum of ranks between needs of hepatectomy patient with pain and nurse responses as perceived by the patients

Table 6 Difference of mean rank and sum of ranks between overall of needs of hepatectomy patients with pain and nurse responses as perceived by the patients

Statement	Mean Rank	Sum of Ranks	Z	p
Total needs of patient-				
Total nurse responses				
Negative Ranks	14.05	140.50	-3.183	0.001**
Positive Ranks	20.83	62.50		

Table 6 shows that there was statistically significant difference between mean rank and sum of ranks between overall needs of hepatectomy patient with pain and overall nurse responses as perceived by the patients as tested by Wilcoxon Matched-Pairs Signed Ranks Test at $p = 0.001$.

Table 7 Difference of mean rank and sum of ranks between each statement of needs of hepatectomy patient with pain and nurse responses as perceived by the patients

Statement	Mean Rank	Sum of Ranks	Z	P
15. Nurses help me position myself until I am comfortable				
Negative Ranks	10.53	200.00	-3.962	0.000***
Positive Ranks	10.00	10.00		
20. Nurses provide the information regarding imagination and encourage me to use it for relaxation				
Negative Ranks	7.50	105.00	-3.742	0.000***
Positive Ranks	0.00	0.00		
13. Nurses place all necessary things nearby so I can reach them easily				
Negative Ranks	10.76	183.00	-2.985	0.003**
Positive Ranks	9.00	27.00		

Table 7 Difference between rank of each statement of needs of hepatectomy patient with pain and rank of nurse responses as perceived by the patients (cont'd)

Statement	Mean Rank	Sum of Ranks	Z	p
3. Nurses inform that I can ask for pain medication at any time				
Negative Ranks	11.14	200.50	-2.472	0.013*
Positive Ranks	13.13	52.50		
10. Nurses help me with activities of daily living during these two days				
Negative Ranks	8.83	106.00	-2.134	0.033*
Positive Ranks	7.50	30.00		

Table 7 Difference between rank of each statement of needs of hepatectomy patient with pain and rank of nurse responses as perceived by the patients (cont'd)

Statement	Mean Rank	Sum of Ranks	Z	p
21. Nurses give medicine for pain relief to me immediately after I ask for				
Negative Ranks	3.00	15.00	-2.121	0.034*
Positive Ranks	0.00	0.00		
8. Nurses are always be there with me when I am in pain				
Negative Ranks	9.86	138.00	-1.864	0.062
Positive Ranks	10.40	52.00		
7. Nurses touch or hold my hand or my arm when they are with me				
Negative Ranks	9.79	137.00	-1.820	0.069
Positive Ranks	10.60	53.00		

Table 7 Difference between rank of each statement of needs of hepatectomy patient with pain and rank of nurse responses as perceived by the patients (cont'd)

Statement	Mean Rank	Sum of Ranks	Z	p
14. Nurses dress/clean my wound gently and carefully				
Negative Ranks	2.00	6.00	-1.732	0.083
Positive Ranks	0.00	0.00		
22. Nurses evaluate the result of pain relief activities regularly				
Negative Ranks	2.00	6.00	-1.732	0.083
Positive Ranks	0.00	0.00		
12. Nurses help me have normal sleep when I feel pain				
Negative Ranks	8.25	82.50	-1.414	0.157
Positive Ranks	7.50	37.50		

Table 7 Difference between rank of each statement of needs of hepatectomy patient with pain and rank of nurse responses as perceived by the patient (cont'd)

Statement	Mean Rank	Sum of Ranks	Z	p
19. Nurses find out my recreational activities and encourage me to use them				
Negative Ranks	3.00	12.00	-1.342	0.180
Positive Ranks	3.00	3.00		
1. Nurses inform about the nature and duration of hepatectomy pain				
Negative Ranks	5.00	15.00	-1.308	0.191
Positive Ranks	5.71	40.00		
6. Nurses listen to me attentively when I am complaining about pain				
Negative Ranks	8.83	16.00	-1.291	0.197
Positive Ranks	7.50	30.00		

Table 7 Difference between rank of each statement of needs of hepatectomy patient with pain and rank of nurse responses as perceived by the patients (cont'd)

Statement	Mean Rank	Sum of Ranks	Z	p
11. Nurses understand my expression regarding pain				
Negative Ranks	4.20	21.00	-1.265	0.206
Positive Ranks	3.50	7.00		
16. Nurses help me reposition myself gently and regularly				
Negative Ranks	7.31	58.50	-1.000	0.317
Positive Ranks	6.50	32.50		
9. Nurses give me emotional support when I am in pain				
Negative Ranks	6.00	42.00	-0.905	0.366
Positive Ranks	6.00	24.00		

Table 7 Difference between rank of each statement of needs of hepatectomy patient with pain and rank of nurse responses as perceived by the patients (cont'd)

Statement	Mean Rank	Sum of Ranks	Z	p
2. Nurses inform that I can notify the nurses when I have pain				
Negative Ranks	5.00	30.00	-0.741	0.458
Positive Ranks	8.00	48.00		
17. Nurses gradually encourage me to engage in activities of daily living by myself				
Negative Ranks	6.42	38.50	-0.535	0.593
Positive Ranks	5.50	27.50		
18. Nurses inform and encourage me to take a deep breath from my chest				
Negative Ranks	4.20	21.00	-0.439	0.660
Positive Ranks	5.00	15.00		

Table 7 Difference between rank of each statement of needs of hepatectomy patient with pain and rank of nurse responses as perceived by the patients (cont'd)

Statement	Mean Rank	Sum of Ranks	Z	p
4. Nurses suggest me the way to support wound during coughing and/or engaging in daily activities				
Negative Ranks	2.00	4.00	-0.378	0.705
Positive Ranks	3.00	6.00		
5. Nurses regularly assess my hepatectomy pain				
Negative Ranks	5.00	25.00	-0.333	0.739
Positive Ranks	5.00	20.00		

Table 7 shows that there were six statistically difference between mean rank and sum of ranks of statement between needs of hepatectomy patient with pain and nurse responses as perceived by the patients. These statement were as followings: nurses inform that I can ask for pain medication at any time; nurses help me with activities of daily living during these two days; nurses place all necessary things nearby so I can reach them easily; nurses help me position myself until I am comfortable; nurses provide the information regarding imagination and encourage me to use it for relaxation; and nurses give medicine for pain relief to me immediately after I ask for.

Table 8 Difference between rank of each statements of needs of hepatectomy patient with pain and rank of nurse responses as perceived by the patients

Statement	Needs of Patient Rank	Nurse Responses Rank
1. Nurses inform about the nature and duration of hepatectomy pain	12	5
2. Nurses inform that I can notify the nurses when I have pain	16	12
3. Nurses inform that I can ask for Pain medication at any time	14	17
4. Nurses suggest me the way to support wound during coughing and/or engaging in daily Activities	3	1
5. Nurses regularly assess my hepatectomy pain	9	7
6. Nurses listen to me attentively when I am complaining about pain	13	13
7. Nurses touch or hold my hand or my arm when they are with me	22	22

Table 8 Difference between rank of each statements of needs of hepatectomy patient with pain and rank of nurse responses as perceived by the patients (cont'd)

Statement	Needs of Patient Rank	Nurse Responses Rank
8. Nurses are always be there with me when I am in pain	21	20
9. Nurses give me emotional support when I am in pain	11	11
10. Nurses help me with activities of daily living during these two days	19	18
11. Nurses understand my expression regarding pain	8	10
12. Nurses help me have normal sleep when I feel pain	6	8
13. Nurses place all necessary things nearby so I can reach them easily	17	21
14. Nurses dress/clean my wound gently and carefully	2	2

Table 8 Difference between rank of each statements of needs of hepatectomy patient with pain and rank of nurse responses as perceived by the patients (cont'd)

Statement	Needs of Patient Rank	Nurse Responses Rank
15. Nurses help me position myself until I am comfortable	5	15
16. Nurses help me reposition myself gently and regularly	10	9
17. Nurses gradually encourage me to engage in activities of daily living by myself	15	14
18. Nurses inform and encourage me to take a deep breath from my chest	7	6
19. Nurses find out my recreational activities and encourage me to use them	20	16
20. Nurses provide the information regarding imagination and encourage me to use it for relaxation	18	19

Table 8 Difference between rank of each statements of needs of hepatectomy patient with pain and rank of nurse responses as perceived by the patients (cont'd)

Statement	Needs of Patient Rank	Nurse Responses Rank
21. Nurses give medicine for pain relief to me immediately after I ask for	1	3
22. Nurses evaluate the result of pain relief activities regularly	4	4

Table 8 illustrates the difference between rank of each statement of needs of hepatectomy patient with pain and nurse response as perceived by the patient.

Discussion

Demographic data

Forty hepatectomy patients participated in this study. The majority of them (87.5%) were male with the age ranged from 32 to 69 years old. About half of them (45.0%) were in middle adulthood with 22 (55.0%) which was 50 years of age or less. These findings were partly consistent with the study of Tang (1995) and Wu (1992) who both found that the rate of HCC men to women is 6 to 1 and the majority of the group was under 50 years of age. Their educational level ranged from primary school to bachelor degree, the majority of them (60.0%) finished high school or higher. This was not congruent with urban Chinese resident's education background, which only 57.7% of them finished high school education (China Health Ministry Statistics, 1998). Moreover, nearly half of the patients (47.5%) in this study worked as government service. In China, the mean of per capita income of urban resident was 362 yuan per month, while the mean of rural resident's per capita income was 151 yuan per month (China Health Ministry Statistics, 1998). Considering that majority of the patients were urban residents and most of urban family composes of 3 persons. The finding from this study indicated that the family income of the most of patients (65.0%) were higher than the average

of family income which is around 1,000 yuan. It reflected that the patients in this study had higher economic status when compared to the Chinese population.

Research objective 1: to describe the needs of hepatectomy patient with pain as perceived by the patients.

From the findings of this study, 85 percent of the patients undergone hepatectomy with right subcostal incision and all of the patients asked for pain medication during the first 48 hours after operation ranged from 1 to 3 times, and most of them (77.5%) received Pethidine. In addition, 21 patient (95%) needs of hepatectomy patient with pain were considered by the patients themselves to be quite high from moderate to tremendous needs. Only one (5.0%) was considered to be little to moderate needs (Table 4). The overall mean of needs of hepatectomy patient with pain was 2.53 (SD = 0.29) while the possible score was 0 to 3. This result reflected that the hepatectomy patients experienced pain and generated moderate to tremendous needs regarding pain within the first 48 hours after operation.

Moreover, the patients ranked, "nurses give medicine for pain relief to me immediately after I ask for", "nurses dress/clean my wound gently and carefully", and "nurses suggest me the way to support wound during coughing and/or engaging in daily activities" as the first top three

priority of needs regarding hepatectomy pain within the first 48 hours after operation (Table 4).

"Nurses give medicine for pain relief to me immediately after I ask for" was the most tremendous need indicated that the patients understood the advantage over disadvantage of using narcotics. It could be because the nurses and physicians provided the information about pain medication which was narcotics since before their operation. In addition, patients might have a good experience regarding the use of such pain medication from their own past pain experience as well as learned from other patients who undergone operation with pain. Therefore, they knew the usefulness of the narcotics. In these two departments where the data were collected, the patients had been told that they might be given narcotics to relieve hepatectomy pain. Also, professionals would let the patients know about the side effects of narcotics. However, the patients still prefer to use narcotics immediately probably because the pain was intense within the first 48 hours after operation. They overlooked the side effects of narcotics and just focused on controlling pain effectively during this time. This result was supported by Jurf and Nirschl (1993) who stated that narcotics were effective in relief of severe to moderate pain and lots of patients accept it. This was also the evidence in China.

According to Carr (1990), postoperative pain was typically caused by tissue injury and depended mostly on the stability of the incisional wound. All kinds of incisional wound manipulation and/or vibration might make pain become worse. Therefore, "nurses dressed or cleaned wound gently and carefully" was the second top rank of the patient's need. Moreover, "nurses suggest me the way to support wound during coughing and/or engaging in daily activities" was the most critical needs during the first 48 hours after operation. This result supported by Christoph (1994) who stated that surgical incision must be handled carefully in order to prevent pain. Also, Carr (1990) found that if the patient experienced pain when moving or taking a deep breath might result in immobility and inhibit coughing or deep breathing. Therefore, hepatectomy patient should receive adequate pain control in order to promote coughing and early ambulation.

On the other hand, the patients ranked, "nurses touch or hold my hand or my arm when they are with me", "nurses are always be there with me when I am in pain", and "nurses find out my recreational activities and encourage me to use them" as the three least needs regarding hepatectomy pain within the first 48 hours after operation (Table 4). According to McCaffery (1979), when the patient knew that the nurse was with him and ready to help him/her at any

time, unless his loneliness, anxiety or other negative affects associated with pain might be alleviated. Moreover, control of negative emotions would contribute to pain relief (McCaffery, 1979).

Chinese culture was far difference from that of the others. The people in China hold strong traditional belief in their culture that influenced their needs and way of expression deeply. In this country, as the saying goes in China, "no physical contact between man and woman are allowed except between husband and wife" was common belief of the norm. Professional touch and contact between nurses and patients of difference gender were not excluded.

Moreover, male expected to be strong and be able to have pain without any complaint. They might choose to be alone and keeping their feeling inside rather than drained the bad feelings out or kept others accompany. In this study, patients were considered the needs of touching or holding hand or arm and the needs of nurses be there for them as the two least needs. This finding supported by the notion stated by Craven and Hirnle (1996) who stated that culture influenced how people learn to react to and express pain. Pain tolerance was respected as a virtue among people of many cultures included Chinese.

Chinese traditional culture influenced male adult to be the one who endure hardships by themselves. Therefore,

most of the patients thought it was no benefit to use recreational activities to relieve pain. Thus, they didn't use it as means of pain relief and prioritize it as the second least need. This result differed from some previous studies that have been done in Western countries; for instance, the study of Good (1996), Weisenberg, Tepper and Schwarzwald (1995), and Jurf and Nirschl (1993). These studies found that the majority of patients used recreational activities as distraction technique to control pain. This probably because of the difference of experience and belief.

Research objective 2: to describe the nurse responses to needs of hepatectomy patient with pain as perceived by the patients.

Eighteen statements of nurse responses were rated as moderate to enough (81.8%) (Table 5). The mean of nurse responses to needs of hepatectomy patient with pain was 2.38 (SD = 0.38) while the possible score was 0 to 3. The result showed that nurses did an appropriate nursing activities to respond to the needs of the patients. However, for the four aspects of care: "nurses provide the information regarding imagination and encourage me to use it for relaxation", "nurses are always be there with me when I am in pain", "nurses place all necessary things nearby so I can reach

them easily", and "nurses touch or hold my hand or my arm when they are with me" were still rated as little to moderate nurse responses. It meant that nurses had done a little effort to meet the needs of patients in such aspects.

One reason for this might be the inadequate education of pain management among nurses. In China, the majority of nurses finished diploma degree and lacked of enough training in providing comprehensive pain control, especially inadequate clinical experience in applying knowledge about pain control. These might affect the appropriate use of nurses response to patients needs regarding pain. This finding was consistent with the findings of Field (1996), Slack & Faut-Callahan (1991). They found that nurses displayed inadequate response to patients needs regarding pain due to inadequate education on pain management.

Among the nurse responses to needs of hepatectomy patient with pain, the patients ranked, "nurses suggest me the way to support wound during coughing and/or engaging in daily activities", "nurses dress/clean my wound gently and carefully", and "nurses give medicine for pain relief to me immediately after I ask for" as the most frequently responses of nurse to the needs of hepatectomy patient with pain within the first 48 hours after operation (Table 5). These notions matched with the three most tremendous needs

of hepatectomy patient with pain as perceived by the patients. This finding showed that such nursing activities were appropriately given to the group of patients. It meant the top three of needs among the hepatectomy patients with pain were fulfilled.

Meanwhile, the patients ranked, "nurses touch or hold my hand or my arm when they are with me", "nurses place all necessary things nearby so I can reach them easily", and "nurses are always be there with me when I am in pain" as the least three nurse responses they received within first 48 hours after operation (Table 5). As it was mentioned above, Chinese traditional culture affect the people's thought and action. Nurses may feel embarrass and hesitate to touch patients who have different gender.

Another possible reason for least nurse responses might be that nurses were very busy most of the time. There was not enough ratio of nurses to patient in these two settings. At the First Affiliated Hospital of SUMS, the total number of nurses caring for 58 patients was 13, whereas at the Cancer Center of SUMS, the total number of nurses caring for 48 patients was 10. These nurses had to rotate to work during day shift, evening shift, night shift, and day off through of the day. Therefore, there were only two nurses on evening shift and only one nurse on night shift. According to ratio of nurse to patient, the standard

should be 1 to 4. However, even in day shift, the ratio of these two departments were only 1 to 6-7. Nurses had to take care too many patients at the same time. Therefore, it is impossible for them to stay with the patient in pain at any time.

Meanwhile, the patients ranked "nurses place all necessary things nearby so I can reach them easily" as the least nurse responses. Since these two hospitals were established for a long time, 90 years for the First Affiliated Hospital of SUMS, and 40 years for the Cancer Center. There was the limitation of the space inside these two departments. The rooms were not large and the facilities provided were limited. In addition, all furniture in the units were not allowed to be moved and/or rearranged. Side-bed table and chairs needed to be put in place. Things, for instance, tissue, towel, clothes should be put inside the drawers which were far of reach for most of the patients. Because of this limitation, nurses could do a few things to meet the needs of the patients in this study.

Research objective 3: to compare the needs of hepatectomy patients with pain and nurse responses as perceived by the patients.

There was statistically significant difference between needs of hepatectomy patient with pain and nurse

responses as perceived by the patients in all statements (Table 6). It reflected that even though the ranking was similar between some of the needs of patient and nurse responses (Table 8), there were still 6 pairs of them were found to be significantly different. It meant six needs of hepatectomy patient with pain were unmet (Table 7). This finding partly supported by the study of Lauri, Lepisto and Kappeli (1997) who found that nurses underestimated the needs of the patients. These six differences were discussed as follows.

First, the significant differences between needs of hepatectomy patient with pain and nurse responses on "nurses inform that I can ask for pain medication at any time", and "nurses give medicine for pain relief to me immediately after I ask for" (Table 6). These results showed that the needs of patient in these aspects were unmet after operation. The possible reasons might be the inadequate of knowledge of narcotics. Nurses were overconcern about possible side effects and narcotics addiction among the patients. This findings was consistent with many previous studies, such as Mackintosh (1994), Browne (1996), Dale (1993), Field (1996), Hekmat, Burke, and Howell, 1994; Loyd and McLauchlan, 1990; and Walding (1991) who all found that the knowledge deficit prevented the nurse from taking effective action for patients' pain relief. Therefore, it

might lead to inadequate nurse responses in such aspects.

"Nurses help me with activities of daily living during these two days" was found to be different in term of need and nurse responses. Actually, in these two departments, the relatives of the patients were allowed to stay with patients during the first two or three days after operation. Moreover, there was not enough number of nurses, a lot of nursing assistants are responsible for simple nursing activities in these two departments to overcome the workload of nurses. Therefore, helping patients with daily living activities were not the priority for nurses. However, all of nursing assistants just had one month training of bedside care, for instance, helping patients with daily activities, doing bed bath, feeding meal, and making beds. Besides the information obtained from the questionnaire, the researcher informally asked the patients in this study for further information. It could be noted that caring provided by nurses was more gentle, careful, and understandable. They felt more comfort and safety. Therefore, they preferred nursing activities performed by nurses rather than nursing assistants.

In addition, "nurses place all necessary things nearby so I can reach them easily", was found statistically significant difference between needs of hepatectomy patient with pain and nurse responses (Table 7). As mentioned before,

this result might be related to the limitation of the hospitals condition and inflexible hospital physical environment. As a result, nurses could not place all necessary things such as tissue, towel, and clothes nearby the patients. So the patients had to use a lot of energy and effort to reach them. This might increase muscle tension and lead to incisional pain and fatigue. According to Christoph (1994), fatigue was found to decrease patients' pain tolerance. Hence, patients were not able to control pain. Significant difference between needs of hepatectomy patient with pain and nurse responses was found.

"Nurses help me position myself until I am comfortable" ranked the fifth needs of patient, but the fifteenth of nurse responses. There was statistically significant difference between the two. Compared to "nurses help me reposition myself gently and regularly", patients ranked needs of patient as the tenth, but nurse responses as the ninth (Table 8). Since there was a nursing routine in these two departments that all postoperative patients must be repositioned every two hours. However, this frequent was not enough. This findings supported by Craven and Hirnle (1996) who stated that pressure areas created by lying in one position too long could be painful and repositioning the patient help promote more comfort. This result reflected that there were many nurses in this study tried to get their

task done without considering the quality of the activities and did not adequately reassess them frequently. The possibility might be related to the overload of nurses in every shift. Nurses had a limited time to carry out all nursing care activities. Therefore, they had to prioritize their responsibilities and selected only some nursing activities that had the high priority.

Finally, the patients ranked "nurses provide the information regarding imagination and encourage me to use it for relaxation" as the eighteenth needs of patient and the nineteenth nurse responses (Table 5). There was significant difference between them. As Slack and Faut-Callahan (1991) stated, imagery often provided the patient with a sense of control, increased self-esteem, and confidence. This was consistent with the study of Daake and Guelder (1989, cited in Slack & Faut-Callahan, 1991) who found that using imagery reduced both amount of analgesics administered and the level of patient pain intensity. Therefore, hepatectomy patient with pain needed to use this effective strategy to relieve pain. However, the result of this study indicated that nurses did not realize the significance nor had enough experience of using imagination as pain relief strategy. In China, imagery has not been taught in professional education, and in hospitals. This might be a barrier for nurses to teach patients and encourage them to use

imagination.

In summary, there was statistically significant difference between total needs of hepatectomy patient with pain and nurse responses as perceived by the patients. Also, six needs of patient occurred significant difference from nurse responses. The study results suggested that nurses should pay more attention to aware of the needs of hepatectomy patient with pain. Nurses needed more comprehensive education on pain control strategies beside the use of narcotics. Moreover, hospital regulations should become more flexible. It would give more opportunities for nurses to meet the patients' needs regarding hepatectomy pain. As a result, nurses could understand patient's needs and take into consideration the appropriately and thoroughly nurse responses to fulfill their needs.