

CHAPTER 4

RESULTS AND DISCUSSION

The descriptive study was designed to explore levels of self-care among Chinese women who had undergone mastectomy, and to determine the relationships between health state, types of health care system, adequacy of received information resources, and self-care. Orem's self-care theory of nursing was considered as a framework to guide this study. Ninety-five postmastectomy women from three hospitals in Beijing who met the criteria were selected as subjects for this study. They were interviewed by the investigator and two assistants. The statistical analysis system (SAS 8.0) was used for data analysis. The results and discussion are presented in 6 parts.

Part A: Demographic characteristics

Part B: Health state

Part C: Health care systems

Part D: Received information resources

Part E: Self-care of postmastectomy women

Part F: Relationships between health state, types of health care systems, adequacy of received information resources, and self-care.

Results

Part A: Demographic characteristics

Personal data

The characteristics of the 95 Chinese women in this study are presented in Table 1. The subjects' age ranged from 23-60 years ($\bar{X} = 46.90$, $SD = 8.29$). The most age range was between 41-50 years (45.2%). Most were Hans (95.8%), and non-religious (93.7%). The majority of them were married (95.8%). The education level was mainly senior high school and higher education (80.0%). Most of them (43.2%) were government staff and had a monthly average income of between 501 - 1500 yuan, which is equal to approximately US \$ 60-180 (or equal to approximately 2500-7500 Baht). Regarding medical payment, approximately fifty five percent (54.7%) of subjects had medical insurance, and approximately thirty three percent (33.7%) had total reimbursement. In terms of the family, the majority (90.5%) of the subjects stayed at home with their nuclear family members. Among them, sixty-seven subjects (70.5%) stayed with 2 family members: husband and their child. For home location, sixty subjects (63.2%) lived in suburbs.

Table 1 The characteristics of subjects (N = 95).

Characteristics	Frequency (N)	Percentage (%)
Age ($\bar{X} = 46.90$; $SD = 8.29$; Range 23-60)		
21-30	1	1.1
31-40	20	21.1
41-50	43	45.2
51-60	31	32.7
Race		
Han	91	95.8
Others (including Man, Hui, etc.)	4	4.2

Table 1 (continued)

Characteristics	Frequency (N)	Percentage (%)
Religion		
Non-religious*	89	93.7
Religious	6	6.3
Marital status		
Single/Divorced/Widowed	4	4.2
Married	91	95.8
Education		
≤ Primary school	4	4.2
Junior high school	15	15.8
Senior high school (including vocational training)	24	25.3
Diploma/Associate	27	28.4
University or further	25	26.3
Occupation		
Government staff	41	43.2
Health personnel	5	5.3
Business person	10	10.5
Retirement	23	24.2
Housewife/Laid off	11	11.6
Labor/Farmer	5	5.3
Monthly average income (Yuan/month)		
< ¥ 500	9	9.5
¥ 501-1500	41	43.2
¥ 1501-3000	30	31.6
¥ 3001-5000	11	11.6
> ¥ 5000	4	4.2
Medical payment		
Wholly reimbursed	32	33.7
Medical insurance	52	54.7
Totally self-paid	11	11.6
Home location		
Urban	28	29.5
Suburban	60	63.2
Rural	7	7.4

*: Subjects have no religion. However, they sometimes have their own belief and practice at joss houses such as prayer, burning joss sticks, kowtow, etc.

Table 1 (continued)

Characteristics	Frequency (N)	Percentage (%)
Number of family members who stay with the patient ($\bar{X} = 2$; SD = 0.70; Range 0-4)		
0	2	2.1
1	15	15.8
2	67	70.5
> 2	11	11.6
Type of family		
Nuclear family	86	90.5
Extended family	9	9.5

2. Health and illness history

Health and illness histories of the subjects are presented in Table 2. Most of them had one-sided breast cancer (95.8%): forty-eight subjects (50.5%) right side and forty-three subjects (45.3%) left side. Most of them were stage II breast cancer (45.3%) and stage I (41.1%). More than forty seven percent (47.4%) of subjects had known of the disease 1-5 years prior to the time of interview. The postmastectomy period ranged from 15 days to 13 years ($\bar{X} = 29.02$ months, SD = 33.53). For medications taken after surgery, most subjects (74.7%) had used chemotherapy, followed by antibiotics (70.5%), vitamins (65.3%), antiemetic (27.4%), analgesic (22.1%), Chinese herbs (9.5%), and antipruritic (4.2%). For current use of medication, fifty-nine subjects (62.1%) use Chinese herb, fifty-one subjects (53.7%) used hormone therapy, such as Tamoxifen, and twenty-nine subjects (30.5%) used other medications such as Glucuro lactone, or medications related to other diseases, such as hypertension, heart disease, and diabetics mellitus, rather than those for breast cancer.

Table 2 Frequency and percentage of subjects (N = 95).

Health and illness history	Frequency (N)	Percentage (%)
Diagnosis		
Left breast cancer	43	45.3
Right breast cancer	48	50.5
Bilateral breast cancer	4	4.2
Stage of breast cancer		
Stage I	39	41.1
Stage II	43	45.3
Stage III	13	13.7
Time period after surgery / mastectomy (\bar{X} =29.02 months, SD=33.53, Range 15 days - 13 years)		
≤ 1 month	1	1.1
1-3 months (involves the 3 rd month)	9	9.5
3-6 months (involves the 6 th month)		
6-12 months (involves the 12 th month)	18	19.0
1-5 years (involves the 5 th year)	45	47.4
> 5 years	14	14.7
Medications taken after mastectomy		
Chemotherapy	71	74.7
Antibiotics	67	70.5
Vitamin	62	65.3
Antiemetic	26	27.4
Analgesic	21	22.1
Antipruritic	4	4.2
Herb	9	9.5
Medications currently used		
Herb	59	62.1
Hormone therapy	51	53.7
Vitamin	2	2.1
Others	29	30.5

Part B: Levels of health states

Regarding health states, it was assessed respectively by patients and by professionals during interview. The total score of health states described by the patients represents the patients' perception of their best health states. The health states assessed by professionals involved 13 characteristics such as: physical symptoms, psychological problems, social activities, and other discomforts and feelings as presented in Appendix D. Levels of health states were identified by using criteria, which was considered greater than $\bar{X} + SD$, between $\bar{X} \pm SD$, and less than $\bar{X} - SD$ as high, moderate, and low levels respectively.

Table 3 shows that the subjects' perception of their own health state ranged from 2-10 with a mean score of 7.07 (SD = 1.54). Scores of the subjects' health states assessed by professionals, ranged from 8-24 with a mean score of 18.27 (SD = 3.58). By assessing the health states, the majority of subjects were at a moderate level, as shown in Table 3.

Table 3 Mean, standard deviation, and level of health state (N = 95).

Characteristics	Range of score		Mean	SD	Level
	Possible score	Actual score			
Health states perceived by patients	0-10	2-10	7.07	1.54	Moderate
Health states assessed by professionals	0-24	8-24	18.27	3.58	Moderate

Part C: Types of health care systems

In reference to Table 4, types of health care systems were composed of three types: biomedical health care system, alternative health care system, and combination of biomedical and alternative health care systems. The number of subjects generally using biomedical health care system was the same as those using the combination (38.9%). After mastectomy, only sixteen subjects (16.8%) used biomedical health care system, the majority of subjects (83.2%) used the combination, especially used a combined traditional Chinese medicine (TCM) with biomedicine. The TCM was mainly herb (71.6%), Qigong (20%), and massage (13.7%).

Table 4 Frequency and percentage of subjects who used several types of health care systems in general and after mastectomy (N = 95).

Type of health care system		Frequency (N)	Percentage (%)
In general*	Biomedical health care only	37	38.9
	Alternative health care only	4	4.2
	Combination	37	38.9
After mastectomy	Biomedical health care only	16	16.8
	Combination	79	83.2
	- Traditional herb medicine with biomedicine	68	71.6
	- Qigong with biomedicine	19	20.0
	- Traditional massage with biomedicine	13	13.68

*: In general, seventeen subjects (18.0%) did not use any health care system since they thought that they were healthy and less likely to see the physicians or need any health care.

Part D: Levels of adequacy and types of received information resources

Table 5 shows that possible scores of each type of received information

resources in terms of adequacy ranged from 0 to 2. The meaning of the score is that the higher the score, the greater the adequacy of received information resources. From the table, it can be interpreted that the subjects' total score of received information resources ranged from 2 to 20 with a total mean score of 13.32 (SD = 4.53). The highest mean score in types of received information resources was "type and the possible side effects of conventional treatment" ($\bar{X} = 1.52$, SD = 0.56), and was followed by "the process and duration of cure" ($\bar{X} = 1.51$, SD = 0.58). The lowest score was "effect of treatment on family and friend" ($\bar{X} = 0.89$, SD = 0.87). This means that the subjects received adequate information about types and side effects, process and duration of treatment, but less information regarding effects of treatment on psychological and family/friend aspects.

Table 5 Mean and standard deviation of the adequacy of information resources regarding each item (N = 95).

Information item	Mean	SD
1. Type and all the possible side-effects of conventional treatment	1.52	0.56
2. The process and duration of cure	1.51	0.58
3. The chances of cure and prognosis	1.47	0.56
4. The extent of the disease	1.46	0.60
5. Ways to maintain adequate nutrition	1.43	0.60
6. Examples of cases who had experience about the illness	1.42	0.72
7. Ways to care for herself in early detection of recurrence of cancer	1.32	0.67
8. Type and effect of alternative therapy	1.27	0.66
9. Psychological effect of treatment	1.02	0.79
10. Effect of treatment on family/friend	0.89	0.87
Total score (range from 2-20)	13.32	4.53

Table 6 (p. 64) shows various sources of information were sought, received and ranked by subjects. Seventy eight subjects (82.1%) considered physicians as the most important source for their health care, twenty four subjects (25.3%) and twenty three subjects (24.2%) thought nurses and relatives/friends as the second important sources, twenty three (24.2%) viewed TV programs as the third important sources of information. Concerning received information sources for their health, the most number of subjects (97.9%) selected physicians, then TV programs (75.8%), and friends/relatives (73.7%).

Part E: Self-care of postmastectomy women

Self-care of postmastectomy women consists of 5 specific self-care dimensions is presented in Table 7. Mean scores of the five specific self-care dimensions were all in moderate levels. To determine the level of self-care of postmastectomy women, it was found that the total score of self-care ranged from 25 to 71 with a total mean score of 53.82 (SD = 9.10). Comparison to means of each dimension and each item is shown in Appendix G, and indicates that the highest score of specific self-care dimensions was score of modifying self-concept (and self-image) in accepting herself after mastectomy ($\bar{X} = 14.81$, SD = 3.07), and the highest score of self-care items was score of following-up postmastectomy ($\bar{X} = 2.97$, SD = .23); the least performed self-care dimension was learning to live with effects of breast cancer and mastectomy and related medical measures ($\bar{X} = 8.51$, SD = 3.15), and the least performed self-care item was breast self-examination ($\bar{X} = 1.64$, SD = .98).

Table 6 Sources of information

Table 7 Mean and standard deviation of self-care scores in postmastectomy women
(N = 95).

Self-care dimension	Range of score		Mean	SD	Level
	Possible score	Actual score			
1. Seeking appropriate medical assistance	0-12	4-12	9.15	2.33	moderate
2. Being aware of and attending to the effects and results of mastectomy	0-18	6-18	12.72	2.95	moderate
3. Choosing medically prescribed therapies and management for side effects	0-12	5-12	8.64	1.92	moderate
4. Modifying self-concept (and self-image) in accepting herself after mastectomy	0-18	4-18	14.81	3.07	moderate
5. Learning to live with effects of breast cancer and mastectomy and related medical measures	0-15	1-15	8.51	3.15	moderate
Total	0-75	25-71	53.82	9.10	moderate

Part F: Relationships between health state, types of health care systems, adequacy of received information resources, and self-care

Pearson's product moment correlation coefficients between self-care and factors comprising health state perceived by patients, health state assessed by professionals, types of health care systems, and adequacy of received information resources were calculated. Considering the results as shown in Table 8, it was found that:

(1) Health states perceived by patients were not correlated with total self-care and five specific self-care activities. This means that self-care at any level was not correlated with health state perceived by postmastectomy women.

(2) Health state assessed by professionals was correlated positively and significantly with total self-care ($r = .43, p < .01$) and other dimensions of self-care such as seeking appropriate medical assistance, being aware of and attending to the effects and results of mastectomy, and modifying self-concept (and self-image) in accepting herself after mastectomy ($r = .27, p < .01$; $r = .29, p < .01$; $r = .57, p < .01$, respectively) except choosing medically prescribed therapies and management for side effects ($r = .09, p > .05$), and learning to live with effects of breast cancer and mastectomy and related medical measures ($r = .16, p > .05$). It could be interpreted that women who had the higher score of health states performed better self-care, particularly in self-care activities of seeking appropriate medical assistance, being aware of and attending to the effects and results of mastectomy, and modifying self-concept (and self-image) in accepting herself after mastectomy.

(3) Types of health care systems were also correlated positively and significantly with total self-care of the subjects ($r = .27, p < .01$), self-care in modifying self-concept (and self-image) in accepting herself after mastectomy ($r = .29, p < .01$) and in learning to live with the effects of breast cancer and mastectomy and related medical measures ($r = .26, p < .01$). The remainder showed no correlation between types of health care systems and specific self-care activities. The results indicated that women who selected the combination might perform more activities of self-care, especially the activities in modifying self-concept (and self-image) in

accepting herself after mastectomy, and in learning to live with the effects of breast cancer and mastectomy and related medical measures.

(4) Adequacy of received information resources were found to be not correlated with total self-care and each specific self-care activity of the subjects except for self-care in modifying self-concept (and self-image) in accepting herself after mastectomy, which was significant correlated ($r = .23, p < .05$).

Table 8 Pearson's product moment correlation coefficients (statistical significance) between health states perceived by patients, health states assessed by professionals, types of health care systems, adequacy of received information resources, and self-care

Variable	Self care	D 1	D 2	D 3	D 4	D 5
Health states perceived by patients	.15 (.15)	.09 (.40)	.09 (.39)	-.12 (.23)	.19 (.06)	.17 (.11)
Health states assessed by professionals	.43 (.00)	.27 (.01)	.29 (.01)	.09 (.39)	.57 (.00)	.16 (.13)
Types of health care systems	.27 (.01)	.13 (.23)	.10 (.33)	.09 (.37)	.29 (.01)	.26 (.01)
Adequacy of received information resources	.16 (.13)	.00 (.98)	.12 (.24)	.04 (.71)	.23 (.03)	.09 (.41)

Note: (1) The first row of each correlated variable in the table indicates correlation coefficient; the second row of each correlated variable indicated the level of significance of correlation.

(2) D1-5 = Self-care dimension 1, Self-care dimension 2, Self-care dimension 3, Self-care dimension 4, & Self-care dimension 5.

Discussion

The discussion of the results is presented as the following sequence: demographic characteristics of subjects including health and illness history, levels of health states, types of health care systems, level of adequacy and types of received information resources, self-care of Chinese women postmastectomy. The relationships between those related factors among Chinese women postmastectomy and self-care are also discussed.

1. Demographic characteristics

Regarding the results of the data collection of this study. The age of postmastectomy women ranged from 21 to 60 with a mean age of 46.9 years (SD = 8.29). Most women were aged between 41-50 years. This is consistent with the age distribution of breast cancer in China (Chen, 1997), and also congruent with a pervious study of Chinese women with breast cancer, which had a mean age of 46.59 years and the most between 40-49 years (Zhang, 1997). The majority of the subjects were Han ethnic group, non-religious, and married. They were relatively educated, had mainly (80.0%) finished senior high school, diploma/associate and university or further education. These data were similar to the result of the fifth Chinese census reported by National Bureau of Statistics of China in 2000. Among the subjects, 43.2% were government employees, and 24.21% were retired. Monthly average income was mainly (71.0%) between 501-3000 yuan. However, 52% of the subjects had medical insurance, and 33.7% still required full reimbursement. China's medical insurance system adopts the model of combining social pooling with individual accounts. At present, about 6 percent of the wage bill of employing units and 2

percent of personal wages should be paid as part of the medical insurance premiums. The two parts are used to pay for different types of medical costs. The individual account fund is mainly for general outpatient services. To ensure the employees participate in the basic medical insurance program, and enjoy basic medical service, the Chinese government has strengthened its administration of medical services and controls the medical expenditure (Jun, 2004). Thus most of the subjects were able to acquire basic medical service such as described medicine, therapies, and physical examination.

Concerning home location, the majority of families lived in suburbs (63.2%), urban areas (29.5%), and rural areas (7.4%). In 1979, China's population growth rate was dangerous high, the Chinese government announced that each family should have only one child, and clearly incorporated it in the Constitution of the People's Republic of China, Since then, the policy has, for the most part, been stringently enforced throughout the country. Therefore, most of the subjects lived with two family members, wife, husband and their child. They could also receive adequate care and emotional support from their family members directly. The finding was consistent with a study found that husband and close family members were primary sources of support of breast cancer patients. Assistance in daily life activities, love, understanding, and concern from husbands and children contribute to the patient's perception of being supported (Northouse, 1989). Another study indicated that most of Chinese patients are cared for by family members if not hospitalized, and they perceived a greater level of support from family members (Zhang, 1997). Regarding health and illness history, near ninety six percent (95.8%) of the subjects suffered from one-sided breast cancer, 50.5% of them had symptoms at right side rather than

left side. Most of them were detected as breast cancer in stage II rather than in stage I. Forty seven point four percent had known of diagnosis for 1-5 years until the time of interview. Most of them used prescribed medication after surgery, such as antibiotics (70.5%), vitamin (65.3%), antiemetic (27.4%), analgesic (22.1%). Chemotherapy was also mainly used for cure. After surgery, medications were primarily used for the prevention of wound infection, chemotherapy, treating side effects, such as vomiting, nausea during chemotherapy. While medications used currently were Chinese herbs (62.1%), hormonal therapy (53.7%), and other medications for protection of liver function, increasing immune ability, and treatment of cancer or other chronic diseases such as heart disease and diabetics mellitus. These prescribed medication or therapies used after surgery or currently also applied in other medical settings. Studies in the U.S. reported that chemotherapy and hormone therapy as treatments used for breast cancer. The adjuvant therapy followed by breast cancer surgery might be prescribed for patients to boost the effects of their surgical treatment by destroying any cancer cells that remain in the body (Nayfield, Bongiovanni, Alciati, Fischer, & Bergner, 1994). However, taking medications (either prescription or over-the-counter) was the most frequent self-care activity of the more commonly occurring side effects of chemotherapy (Dodd, 1997); most of the cancer pain could be adequately relieved by analgesic (Braddom et al., 2000). Antibiotic prophylaxis may be used for patients undergoing breast surgery (Hall, & Hall, 2000), and selected vitamins and minerals were essential components for support of a competent immune system and cell regeneration (Wood, Spark, & Spark, 2003). In China, those patients for whom it is deemed necessary receive Western medical drugs and surgical procedures also consider traditional Chinese medicine as their health care modalities (Roger, 1993).

2. Levels of health states

Health state in this study was described from two perspectives. One was from the patient according to their perception of health state, measured by a rating scale from 0-10. Another one was described by professionals based on a health state questionnaire, which involved 24 items including physical symptoms, psychological problems, and social activity aspects. Comparison to the two measurements, the first one was a general and a subjective description for their health states, and the second one was more detailed and objective.

The mean scores of the two measurements were respectively 7.07 (SD = 1.54) and 18.27 (SD = 3.58). Comparison between the two scores indicated that they were at similar levels in each measurement. It meant that the subjects were able to assess themselves objectively. Moreover, the results presented in Appendix G show that health states described by patients correlated significantly with health states assessed by professionals ($r = .40$, $p < .01$). Concerning the results shown in Table 3, the subject's health state, with mean time of 29.02 months after mastectomy, was mostly at moderate level. Similarly, Hoskins (1997) compared health states of patients with breast cancer at three months, six months, and one year postmastectomy, and found that the patient had a decline in health problems one year postmastectomy, and perceived a better health status. In terms of current health problems, the primary complaints were restlessness or agitation (53.7%), fatigue (52.6%), hot flashes (48.4%), and stress or anxiety about illness and treatment (41.1%). These results were also similar to Hoskins (1997) study, which reported that fatigue and emotional distress were the most prominent side effects of treatments of breast cancer and this can directly affect the health state.

3. Types of health care systems

The types of health care systems in this study are classified as; biomedical health care systems, alternative health care systems and a combination of biomedical and alternative health care systems. In general, 38.9% selected solely biomedical health care systems and 38.9% chose combined health care systems. After mastectomy, subjects who selected biomedical health care systems only accounted for 16.8%, while the choice of combined health care systems increased to 83.2%. This meant that after surgery most subjects selected biomedical and alternative health care equally. Traditional Chinese herb medicine, traditional massage, and Qigong (Guolin Qigong) were highly favorable. Herbal or botanical agents possess complex biological activities that can also affect many aspects of carcinogenesis such as cell growth and proliferation, host-tumor interactions, immune function and differentiation. Chinese herbal therapy was a treatment modality approach used by cancer patients. For instance, *Astragalus membranaceus*-*Ligustrum lucidum* tonic capsules, is a currently commonly used Chinese medicine. Herbal therapy can be combined with surgical operation, radiotherapy or chemotherapy and promote the recovery of normal functions (Cohen, Tagliaferri, & Tripathy, 2002).

Guolin Qigong created by Ms. Guo Lin, a late-stage cancer patient who recovered from cancer by practising Qigong by herself, is widely used in China. Guolin Qigong is natural movement, combining static qigong-sound qigong-1-2-3 step walking Qigong, producing states of expression and relaxation. Many cancer-recovery cases were reported by those who practised Guo-Lin Qigong, but most practitioners of Guo-Lin Qigong mainly used Qigong as a supplementary cancer therapy to conventional treatments or other therapies (Huang et al. 1996). Huang et

al. (1996) also reported that thousands of cancer patients who practised Guolin Qigong lived much longer than their doctors expected, and some reported complete remission. A pilot study regarding changes in cytokine production (key regulators of immunity), in healthy subjects practising Guolin Qigong, reported that cortisol was reduced by practising Qigong (Jones, 2001). Massage and other kinds of physical therapy may ease lymphedema (Harris, et al., 2001). In addition, special supplements and vitamins such as Amway products were also preferred to be used by the subjects. A previous research; "complementary and alternative medicine (CAM) use by women after completion of allopathic treatment for breast cancer", indicated that 66% of women in this study followed conventional treatment for breast cancer with one or more CAM therapies, which, they believed, could prevent cancer recurrence and /or improve their quality of life (Henderson & Donatelle, 2004). CAM use did not reflect negative attitudes towards conventional medical care, but rather an orientation to self-care in the optimization of their health and well being.

4. Levels of adequacy and types of received information resources

In terms of this section, if the mean score of each item was close to two, it means that the information received by the subjects was more adequate. The results shows that received information of women was generally adequate, such as information about treatment and disease, but some contents were not adequate such as information about psychosocial effects of treatment and its effects on family/friends.

On one side, the information about treatment and disease was the most important for them in their recovery from the disease. Thus, they could ask and

receive information about the effects, process and duration of cure, possible side effects of treatment, the extent of disease, and prognosis. The information about the possible side effects of treatment was the most adequate for the women. Because they could obtain them in many ways, such as professionals, patients who had experience, and written materials. A previous study explained that cancer patients desired information about disease and treatment to maintain their personal control and to improve their prediction of future, especially, it might increase the survival rates for the early diagnosed patients (Wardle & Rosemary, 1992).

On another side, the information about the effects of treatment on psychological and family/friend was found to be inadequate. Possible reasons included; some subjects neglected to understand and receive information about impacts of the effects of treatment on psychosocial and family/friend aspects. They did not require this information all of the time, because they did not want to endure great pain before or during treatments, and wanted to be confident to receive the treatments. On the other hand, patients might be in a bad mood when they received the information. Therefore, they could not remember what the professionals said to them. Some studies reported that cancer patients might not retain the information they had been given, possibly as a consequence of denial (Wiggers, Donovan, Redman, & Sanso-Fisher, 1990; Suominen et al., 1995); and some patients were unable to absorb any further information when information was particularly distressing for example when bad news is unexpected (Harris, 1997), or at a time when they were emotionally or psychologically unable to fully understand, attend to, or cope with it, i.e., postoperation (Hinman, 2001). In addition, shortage of information derived from professionals influences the subjects' reception, because the women considered

physicians as the most important resources of their received information based on the findings of this study. This reason might be from professionals' perception. The professionals did not want to always emphasize the side effects of treatment, especially on psychosocial and family/friend aspects, and to increase patients' psychological burden to the treatments so that aggravated their emotion. Nevertheless, sometimes, limited time or lack of knowledge in psychological area might become a barrier for the professionals to communicate with their patients. Studies also identified several reasons for deficits in information giving. For example, professionals might not have the education or training to provide the level of education required by patients (Firth, 1991 cited in Mills & Sullivan, 1999); staff do not have time to provide patients with the information they require since they were too busy to tell the patients (Luker, et al. 1996).

Subjects ranked their sources of information were mainly from physicians followed by nurses and relatives/friends, TV program, medical journals or textbooks, newspapers, popular science readings, Internet, brochures, and women's journals. This rank is a not different from a study in the U.S. about information needs, sources of information, and decisional roles in women with breast cancer. Bilodeau & Degner (1996) demonstrated that from the most to the least preferred; sources were from physicians, nurses, friends and relatives, brochures, medical journal or textbook, videotapes, television or radio programs, women's journals, and newspapers.

Subjects in this study considered professionals as the most important and absolute authoritative sources of information for their health. In addition, there are several health programs, currently on TV that they prefer, as they can stay at home to receive health care education. They also thought that their family members and/or

relatives frequently offered information to them. Nurses were not ranked as the first important source of information by these women. This may be because when postmastectomy women stayed at home, they had less opportunity to make contact with nurses for their disease. If they went to hospital for follow-ups, they could consult physicians directly. They would rather go home, and seldom had contact with a nurse. Another point was that women might have accessed information from various sources such as physicians, TV program, friends and relatives, newspapers, medical journal, popular science reading, etc. In addition, the nurses in outpatient departments were limited, and were always very busy with their work. Therefore, sometimes, the nurses could not give enough information to their patients. And also the nurses had the different perception from the patients' needs. Therefore, the patients might not receive relevant information. Studies have found that patients primarily expected information support, whereas nurses underlined the role of psychological support. Furthermore, patients felt that they did not receive the support that they needed, whereas nurses felt that they provided a great deal of support (Suominen et al., 1995).

5. Self-care of Chinese women postmastectomy

In this study, levels of self-care of postmastectomy women were mostly at a moderate level, and 19.0% of them had self-care at a high level. This seems to reflect that the majority of subjects had performed well in their self-care after mastectomy for two years (average time of 29 months). A basic reason was that most of them had moderate levels of health states, they had ability to perform self-care. Orem (2001) also said that self-care was performed based on self-care agency. Another reason was

that they could get health education, receive cultural effects, and support from various ways such as professionals, families/friends, self help group and media including TV program, newspapers, journals, textbooks, even Internet. They were educated, therefore, they could receive information based on their conditions from the various ways as much as possible. The results indicate that self-care activities based on Orem general theory of nursing (2001) were well performed by most of Chinese women postmastectomy. Therefore, the theory can be applied in Chinese women postmastectomy.

However, the subjects had limitations in respect of their health state, perception of self-care, professionals' knowledge and attitude, social orientation, and influence of surroundings. Thus most subjects had not reached high levels of self-care postmastectomy. Self-care in this study was made up of five dimensions covering twenty-four activities. There was some evidence presented in each dimension as follows.

The first dimension comprised four different methods of seeking appropriate medical assistance, showing a mean score of 9.15 (SD = 2.33). The highest self-care they performed was accepting help and support from families and friends in order to get through the illness and treatment (item 4) with mean score of 2.62 (SD = .64), the second was accepting help and support from professionals when the women got worse (item 3) ($\bar{X} = 2.39$, SD = .72), and then asking questions to professionals about illness and/or treatment (item 1) ($\bar{X} = 2.14$, SD = .78). Asking question if subjects did not understand when receiving information about self-care (item 2) was the lowest self-care they performed ($\bar{X} = 2.0$, SD = .84).

Most subjects reported that they could often ask questions if they did not understand when receiving information about self-care for this illness. Some of the subjects read medical textbooks, journals or searched for answers from the Internet. However, some (34.7%) of the subjects limited their questions to their physicians, nurses or other health care professionals, as sometimes the professionals were too busy, the patients did not want to consult with them for a long time. Therefore, the score of this activity (item 2) had the lowest score ($\bar{X} = 2.0$). A follow-up study in women with breast cancer also reported that the nurses were too busy to tell anything, they presumed the patients understood (Luker, et al., 1996). The subjects reported that they required medical assistance to learn of the new anti-cancer medicine effects, new methods of treatment, and knowledge about diet therapy, self-care, etc. A previous study; "self-care: ready or not!" found that cancer patients undergoing radiotherapy were more likely to ask for medical assistance from their physician (Dodd, 1997).

The second dimension of being aware of and attending to the effects and results of mastectomy, included six activities with a mean score of 12.72 (SD = 2.95); the highest mean score of the activities was seeing the doctor for follow-up (item 10) with a mean score of 2.97 (SD = .23), the second is observing carefully for any changes in symptoms (item 5) ($\bar{X} = 2.18$), and then arm exercises (item 8) ($\bar{X} = 2.08$), reporting changes in symptoms to the professionals (item 6) ($\bar{X} = 1.96$), avoiding carrying handbag or heavy objects with affected arm (item 7) ($\bar{X} = 1.88$), and self-examination performance (item 9) ($\bar{X} = 1.64$).

Almost all of the subjects regularly went to hospital and checked-up whether or not they had a recurrence of the disease, reported to physicians any changes or discomfort, therefore, the activity of seeing doctor for follow-up (item 10) was the best performed ($\bar{X} = 2.97$) in total self-care. However, self-examination (item 9), the simplest way to detect recurrence of breast cancer or metastatic disease after surgery, had the worst score ($\bar{X} = 1.64$) in this sector. Some (42.1%) of subjects seldom (27.4%) or never (14.7%) performed this activity. Some of them did not know how to perform it, some believed that their physician had already checked-up for them at the follow-up, and that they did not need to do it again. Another reason was that a few of them did not want to touch their chest in the area of their scar, as it may cause them to suffer. A study: "pattern of association over time of side-effects burden, self-help, and self-care in women with breast cancer", reported the two ways of check-up to discover their tumor, in which 56% of the women performed breast self-examination, and 69% reported that they sought a prompt follow up (Longman et al, 1997).

The third dimension: choosing medically prescribed therapies and management for side effects incorporated four activities with a mean score of 8.64 (SD = 1.92). The highest score of these activities was complying with medications prescribed according to physician's direction (item 11) with a mean score of 2.60 (SD = .53), the sequence of scores of the activities were complying professionals' advice on managing side-effects of the medications and/or any therapy (item 13) ($\bar{X} = 2.57$, SD = .65), noting any effects of medications and/or therapy (item 12) ($\bar{X} = 2.18$, SD = .76), and accepting professionals advice on adopting alternative therapy (item 14) ($\bar{X} = 1.29$, SD = 1.14).

Subjects mostly complied with prescribed medications, especially if the side effects of the medications and /or any therapy had occurred. They attended the hospital to see their physician as soon as possible to comply with their professional advice. Nowadays, CAM are becoming increasingly popular in many medical situations, particularly among patients with cancer (Tagliaferri, Cohen, & Tripathy, 2001). Whereas the subjects might receive minimum advice on adopting alternative therapies from professionals; as physicians who work with western medicine, promote western medicine rather than alternative therapies, if they understand clearly about the effects of alternative therapies or drugs, the State Medical Administration Bureau allows them to prescribe Chinese medicine or physiotherapy. Another reason is that some physicians strongly believe that conventional therapies are mainstream treatment for cancer patients rather than alternative therapies. A previous study on frequency of use of CAM in women with breast cancer, indicated that some of physicians thought it was a waste of money to use CAM (Lengacher, Bennett, Kip, Keller, LaVance, Smith, et al., 2002). Therefore, this activity, regarding accepting professionals advice on adopting alternative therapy (item 14), was the lowest ($\bar{X} = 1.29$). In contrast, the activity in complying to medications prescribed for their illness according to physician's direction (item 11) was the highest ($\bar{X} = 2.60$).

The fourth dimension of modifying self-concept (and self-image) in accepting themselves after mastectomy was composed of six activities with a mean score of 14.81 (SD = 3.07). According to the sequence of mean scores of these activities, levels of changing their roles at home (item 19) and at work (item 20) after mastectomy had the highest scores of 2.84 (SD = .37) and 2.62 (SD = .69), then taking care of themselves (item 16) ($\bar{X} = 2.60$, SD = .51), ability of accepting

changes on body due to the illness and treatment (item 17) ($\bar{X} = 2.54$, $SD = .76$), frequency of wearing prosthesis when attending social activities (item 18) ($\bar{X} = 2.33$, $SD = 1.10$), and increasing understanding on women's life meaning and personal strength from the illness (item 15) ($\bar{X} = 1.88$, $SD = 1.07$).

The subjects reported that they used to be concerned with their work or looking after their family members before being diagnosed with breast cancer women, and rarely thought about their health. After they had suffered from this possibly fatal disease, attention to their health and life began. They considered how to manage their remaining years of life with the disease and thought about how to live well in the world afterwards. They took care of themselves more diligently than before and gradually were able to accept the impacts of the disease and the subsequent treatments. They usually went outside with prosthesis, as reported that the self-image of keeping up appearances of looking normal was achieved by wearing prosthesis and concealing the 'difference' when attending social activities (Bredin, 1999). Their roles and function changed at home and at work because they were taken care of by their family members or were unable to work after surgery. A study in quality of life of survivors of breast cancer reported that the women's families and friends rallied to provide needed emotional support and physical help (Ferrans, 1994). Another study found that postmastectomy women did not get bias from their colleagues (Hinman, 2001). In addition, they were asked to do less housework or to decrease workloads, through reduction of working time such as working for half day or changing their work. Thus, they could have time to do what they wanted to do, and enjoy their new life. These results showed that the self-care sector has the best performance, the scores of the activities of changing their roles at home (item 19) and

at work (item 20) after mastectomy, as well as taking care of themselves (item 16) were quite high ($\bar{X} = 2.84, 2.62, \text{ and } 2.60$ respectively), while the score in their understanding on life meaning and their personal strength, after they had the disease (item 15) was the lowest ($\bar{X} = 1.88$). The reasons might be that most subjects wished to maintain better quality of life, to not bother their family members or friends, and to do the best they could for others. However, they seldom thought about their life's real meaning and personal strength.

The last dimension is learning to live with effects of breast cancer and mastectomy and related medical measures with a mean score of 8.51 (SD = 3.15), which covered five actions of adjusting life style because of the illness (item 21) ($\bar{X} = 2.63, \text{ SD} = .57$), learning new things for taking care of themselves (item 22) ($\bar{X} = 2.32, \text{ SD} = .79$), contacting the women with similar surgery to relieve pain (item 23) ($\bar{X} = 1.62, \text{ SD} = .99$), thinking about the group help (item 25) ($\bar{X} = 1.18, \text{ SD} = 1.10$), and meeting cancer patients in any group or club to cope with the illness (item 24) ($\bar{X} = 0.76, \text{ SD} = 1.08$).

For this dimension, most women could adjust their life styles, had a positive attitude, kept busy, and encouraged hope in their child and/or family. Some subjects in this study used exercises such as walking, Qigong, acting in Beijing opera and dancing, as a form of self-care to adjust to life and improve their health. They were able to learn new activities for taking care of themselves. Previous studies also found that attitudes of living and exercises became life styles of women with breast cancer and then attitudes to life helped in their approach to mastectomy (Ferrans, 1994; Young-McCaughan & Sexton, 1991; & Northouse, 1989). Thus, the activity of

adjusting life because of the illness had the highest score in this dimension. Some women preferred to communicate with other cancer patients (82.1%), especially sharing their experience with women with breast cancer who had similar experience, or participating in anti-cancer clubs or groups (37.8%), for coping with their disease. Mostly, the clubs or groups are under the aegis of the Anti-Cancer Association (ACA) in Beijing and in several places, in hospitals or in Beijing parks. The ACA is a self-help group, formed to help women in their fight against the malignant disease. There are currently 5000 members and dozens of subgroups at different parks in Beijing. The central work of ACA is to teach Guolin Qigong and acts as a living proof that the most effective anticancer measure consists of a combination of Western medicine, Chinese medicine, Guolin Qigong, psychotherapy, and diet. The ACA invites experts of Western and Chinese medicine for lectures, organizes Qigong seminars, calls for cancer-rehab meetings for exchanging experience, and publishes ACA magazines. As a result of hard work and diligence, ACA's public anticancer model has spread rapidly in China and around the world, attracting thousands of cancer patients to learn the exercise. With an open mind and renewed spirit, they come together to learn Guolin Qigong, exchange anticancer experiences, explore treatment plans. Many find their way back to health from the deadly diseases. The Life Oasis of Beijing Yuyuantan Park, is the birthplace of Guolin Qigong, with nearly 1000 members. Women who did not attend (62.1%) gave the following reasons: busy with business, rejected the idea of listening to sad "stories" from other women who were various cancer patients, were afraid that emotional stability would not be maintained. Therefore, the activity of meeting cancer patients in any group or club to cope with the illness had the lowest score in total self-care.

6. Relationships between health state, types of health care systems, and adequacy of received information resources, and self-care

The results show that health state, types of health care systems, and adequacy of received information resources had a relationship with self-care in different levels. This is discussed below.

6.1 Relationships between health states and self-care

Concerning the relationship between self-care in general and a health state perceived by patient, there was no correlation ($r = .148$, $p > 0.5$). It could be explained that the self-care level postmastectomy women performed did not depend on the levels of health states perceived by the patient. The patients might perform their self-care no matter what levels of health states they had perceived. On the other hand, health states assessed by professionals, which were measured by a more detailed and objective questionnaire, had significant positive correlation with total self-care and specific self-care activities in terms of seeking appropriate medical assistance (Self-care dimension 1), being aware of and attending to the effects and results of mastectomy (Self-care dimension 2), and modifying self-concept (and self-image) in accepting herself after mastectomy (Self-care dimension 4). This indicates that if the subjects had better health states, they would have more energy, or power and capability, which were named as self-care agencies in Orem's theory of self-care (2001), to engage in more self-care and take care of themselves well. This conforms with the postulate that self-care is performed based on self-care agency and therapeutic self-care demand (Orem, 2001). Therefore, health states were related to self-care, similar to the findings of Dodd & Dibble (1993), who found that health states might affect patients' abilities to perform self-care. In Moore & Pichler's study

(2000), they discovered that health states had a significant relationship with universal self-care requisites, self-care agency, self-care performance, or perceived health status. Orem (2001) stated that health state determined the kind and amount of self-care required by the patient.

6.2 Relationships between types of health care systems and self-care

It was found that types of health care systems correlated positively and significantly with total self-care ($r = .271, p < .01$). This factor had also significant correlation with specific self-care in modifying self-concept (and self-image) in accepting herself after mastectomy (Self-care dimension 4), and in learning to live with effects of breast cancer and mastectomy and the related medical measures (Self-care dimension 5). It meant that women who sought more than one health care system, would require to adjust and learn more to take care of themselves. Orem (2001) presented the concept that medical therapy might adjust self-care. It might guide postmastectomy women in choices of treatment alternatives and improve their skills of self-care in order to better cope with the illness (Gustafson, Hawkins, Boberg et al., 1999).

6.3 Relationships between adequacy of received information resources and self-care

It was found that there was no correlation between adequacy of received information resources and total self-care ($r = .156, p > .05$). This meant that self-care can be performed with or without adequacy of the information mentioned in the IRQ, because except for this information, they could get other information required when they performed self-care by various ways. However, in a sector of self-care of modifying self-concept (and self-image) in accepting herself after mastectomy (Self-

care dimension 4), there was a positive relationship ($r = .23, p < .05$). These results mean that women could modify their self-concept or self-image to be able to accept them, to adapt to their surroundings, and take care of themselves better after they received adequate information mentioned in IRQ. Previous studies indicated that effective information giving is an essential component of effective care, and may motivate a patient to choose healthy behaviors (Bilodeau & Degner, 1996), and promote self-care (Mills & Sullivan, 1999).

In summary, self-care was positively related to health state assessed by professionals, and types of health care systems but not to health state perceived by patients, adequacy of received information resources (as indicated in Figure 4-1). The Orem's general theory of nursing (2001) can be therefore applied. Health state, health care system, and resource availability and adequacy (information resources in this study) were three of those 10 basic conditioning factors.

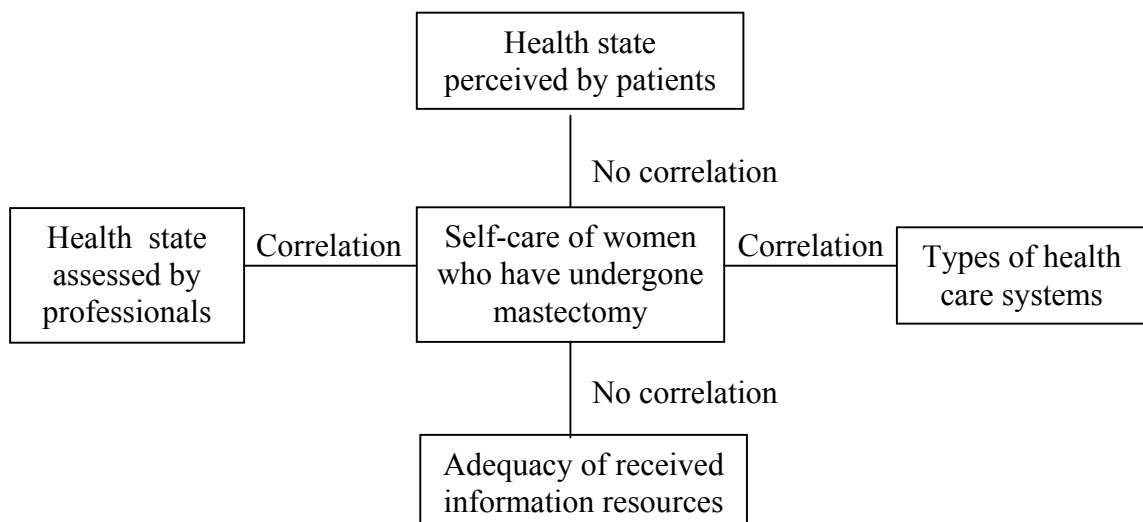


Figure 4-1 Relationships between self-care and related factors