



**Preoperative Needed and Received Information in Patients Undergoing Thoracic
Surgery in Bangladesh**

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**A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of
Master of Nursing Science (International Program)**

Prince of Songkla University

2010

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Thesis Title Preoperative Needed and Received Information in Patients
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Thesis Title	Preoperative Needed and Received Information in Patients Undergoing Thoracic Surgery in Bangladesh
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Major Program	Nursing Science (International Program)
Academic Year	2009

ABSTRACT

Thoracic surgical patients often perceive their operation as threatening and experience anxiety, particularly those who are in lack of information. Providing appropriate information enables patients to reduce negative consequences and increase participation in postoperative care. This study aimed to describe the level of preoperative needed and received information among patients undergoing thoracic surgery, and to compare their needed and received information.

The descriptive study was conducted in four surgical wards of a national, specialized hospital in Dhaka. Seventy surgical patients were recruited purposively. The Needed Information Questionnaire (NIQ), and the Received Information Questionnaire (RIQ) developed by the researcher were used for data collection. The instruments were validated by three experts and tested for reliability of the NIQ and the RIQ yielding the Cronbach's alpha coefficients of .88 and .87, respectively. Data were analyzed by descriptive statistics and Wilcoxon Signed Ranks test.

Overall the average scores of preoperative needed information and received information were at a high level ($M = 205$, $SD = 9.23$ and $M = 193$, $SD = 6.73$, respectively). The mean scores of preoperative needed information in each dimension

were also high. The results indicated that there was a significant difference in mean ranks of needed and received information ($z = -6.57, p <.01$). The received preoperative information was less than needed information particularly in that information related to sensation and discomfort. This finding suggested that providing information specific to sensation and discomfort that patient wanted should be given a priority.

ACKNOWLEDGEMENT

By the name of Allah, the most gracious and the most merciful, praise is to the Lord of the universe who gives the best reward to the fear of Allah and the great loss to the transgressor, and blessing to the last Prophet Hazrat Muhammad s.a.w (Peace be upon him).

My study would be quite impossible without the help, ideas, time, effort, and good wishes of respected people. I would like to express my sincere appreciation and cordial respect to my major advisor, Assoc. Prof. Dr. Praneed Songwathana who gives me the full support with proper suggestion, appropriate advice, and excellent guidance for writing and discipline in time, and to my co-advisor Dr. Hathairat Sangchan who has guided me with warm and valuable advices. I thank the proposal examining committee and thesis examining committee for providing valuable suggestion to improve this work. I would like to extend thanks, particularly to the Dean of Faculty of Nursing, all ajarns, and the office staff at Faculty of Nursing, who supported and helped me during my study in this program.

My special thanks to Mr. Nasiruddin Ahmed who translated the instrument, Dr. Anwarul Anam Kibria for checking questionnaire, Mr. Sajid Maksud for editing my thesis proposal, and Miss Sharmin Rahman for editing the final report.

I also would like to extend my grateful appreciation to the Director of the National Institute of Disease of the Chest and Hospital (NIDCH) and Head of Department of thoracic surgery to allow me to conduct the study. My grateful appreciation also goes to thoracic surgical patients participating in this study. Special

thanks to all ward incharges, staff nurses, and health care attendance for their support throughout the study.

I also would like to express my sincere gratitude to my seniors, and sincere colleagues Babita Akter, Suparna Basak, Shariful Islam, Md Surujullah, and Md Humun Kabir Sikder for helping me get through my study with them. I extend my warmest thanks to all my friends in Bangladesh for their support during my study. Definitely, special thanks to the Government of the People's Republic of Bangladesh for providing me the scholarship to continue my study.

I extend the greatest respect to my beloved father and mother for their loving prayer and support throughout my study. Special thanks to my husband and my son for their greatest sacrifice to allow me to stay abroad for two years. Special thanks to my brothers, sisters, sister in-law, nieces and nephews for taking care of my family during my study. I wish to thank to all, who are mentioned or unmentioned here, that gave me support to finish the study.

Finally, I would like to extend my thanks to Assistant Professor Dr. Sasikaan Nimmaanrat for her valuable advice to develop preoperative leaflets with cartoon and picture for the patients who are not able to read and write.

Nasima Akter

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CHAPTER 1

INTRODUCTION

Background and Significance of the Problem

Thoracic surgery is a critical, sensitive and fearful procedure in the field of surgery. Patients often view the procedure as risky and experience stress or anxiety when they lack knowledge or information or have misconceptions (Lee & Chien, 2002; McGaughey & Harrison, 1994; Smeltzer & Bare, 2004). Providing appropriate information enables the patients to understand about their disease and prognosis. It also helps patients to increase participation in decision making and setting up the treatment goal through collaboration with health care team. Involvement with the treatment process during preoperative period help patients feel secure about surgical procedure and outcomes that reduces patient's anxiety (Gilmartin, 2004; Lithner & Zilling, 2000; Malkin, 2000; Scott, 2004; Spalding, 2003; Walker, 2007; Yount, Edgell, & Jakovec, 1990) and minimizes postoperative complications (Lee & Chien).

Preoperative preparation and careful postoperative management are therefore crucial for successful patient outcomes. Previous literature on preoperative patient education in thoracic surgery reflects three main issues to be concerned. First, it is necessary to allow the sufficient time for patient explanation and questioning. Second, it is emphasized on the right of patient to receive explanation of any proposed treatment or care received. Third, the content and material should be separated into two categories; one category provides general details related to thoracic surgery in

general and the second provides details of a specific operation such as pneumonectomy, lobectomy, etc. (Whyte & Grant, 2005). Not only the content of information, but the times of information should be addressed.

In preoperative information for thoracic surgery, the following topics should be included: 1) general preoperative education; respiratory hygiene, pain, smoking cessation, diet and nutrition, wound care and drains, post discharge social issues, contact members, 2) specific procedure depending on the type of thoracic surgery; the common procedures include pulmonary resection (lobectomy/pneumonectomy) and other operations in patients with severe emphysema, esophagectomy, transplantation; and 3) lung rehabilitation skill training includes breathing exercise using incentive spirometer, chest physiotherapy, active coughing etc. (Whyte & Grant, 2005).

A number of studies have investigated the types of information that will be useful to surgical patients. It was found that the content areas addressed information about procedures, events, sensations, self care actions, skill training and psychosocial support (Bernier, Sanares, Owen, & Newhouse, 2003; Smeltzer & Bare, 2004; Thompson, Melby, Parahoo, Ridley, & Humphreys, 2003). Most of the information was provided during the preoperative period. In the study conducted by Yount, Edgell, and Jakovec (1990) on nurses' perception on preoperative teaching, it was found that several types of teaching were usually provided in the preoperative period. This information included knowledge about physiological process, sensory experiences, coping strategies used to reduce anxiety, and skills training. In addition, preoperative information about surgical procedures and outcomes can reduce patients' anxiety, decrease the requirement of postoperative analgesia and reduce the length of hospital stay.

In literature review specific to preoperative teaching information, the common types of information provided for surgical patients consist of five dimensions including 1) situational/procedural information, 2) sensation/discomfort dimension, 3) patient role information, 4) psychosocial support information, and 5) skills training information (Yount et al., 1990). Following five dimensions of information there was a study by Samsudin (2005) examined perception of patients and nurses in relation to patients' information needs in perioperative period in Malaysia. The findings indicated that overall perception of nurses and patients was not significantly different. However, the patients and nurses gave response in different order. The patients gave highest ratings to situational or procedural information, followed by patient role information, psychosocial support information, skills training information, and sensation–discomfort information. Nurses gave highest ratings to situation or procedural information, followed by patient role information, skills training information, psychosocial support information, and sensation–discomfort information.

In terms of preoperative education and needed information experienced by patients, it was found that providing structured, oral and written information for the patients regarding their disease and its treatment was important to facilitate patient understanding and discussing the coming operation and risk of complications. Both common and rare complications needed to be relayed to the patients. The need for preoperative information begins when illness starts and patients receive information about the risk of postoperative complications from the surgeon at the hospital (Ivarsson, Larsson, Luhrs, & Sjoberg, 2005). In another study conducted by Mills and Sullivan (2000) to explore the experiences of patients with operable esophageal cancer, participants described given information related to a number of key areas:

treatment details, side-effects, extension of their disease, cure and prognosis and return to normal fitness.

In addition to content of procedure and treatment outcome desired, patients require information related to their role in helping themselves to prevent postoperative complications. The study conducted by Whyte and Grant (2005) on preoperative patient education in thoracic surgery. They reported that the optimal outcome after thoracic surgery involved the coordinated activity of all in the medical team, including the patient. For the patient, who is generally uneducated about the course of the surgical process, the process of preoperative teaching could improve the patients understanding on his or her role in the overall process and how he or she can facilitate or delay recovery. It is therefore essential for nurses to teach and encourage patients to perform their role and actively participate in preoperative care.

In the study of nurses' perception of preoperative teaching for ambulatory surgical patient, Tse and So (2008) found that there was a discrepancy between nurses' perception and their practice in relation to the provision of preoperative information. They also mentioned that limited teaching aids, tight operation schedules and language barriers affected the delivery of preoperative information to the patients.

Samsudin (2005) studied with nurses and patients and found no significant difference between nurses' and patients' perception on patients' information needs in perioperative period in patients undergoing general surgical procedure. This present study was done with the patients only to find out the differences between the patients' needed and received information in preoperative period in patients undergoing thoracic surgery in Bangladesh. The researcher used the same questionnaire for needed and received information with one open-ended question for the particular

needed information. The data were collected in two different times; data for needed information were collected during 24-48 hours after admission and data for received information were collected during 24-48 hours before operation.

In addition, most of the reviewed studies were conducted on patients undergoing general surgical procedures. A few studies focused on patient undergoing thoracic surgery which would be of great attention in some settings with high case load. According to patients' chart review during 2008 from post-operative ward of National Institute of Disease of the Chest and Hospital (NIDCH), an average of 45-55 major operations were done every month. The common operations were pneumonectomy, lobectomy, decortication, and esophagectomy. The patients have to stay for a long time (15-30 days) in hospital before operation. The stay was longer in case of infectious illness such as empyema thoraces, pleural effusion, cavitary lesion in the lungs and pulmonary tuberculosis. Not only the longer preoperative stay, but also post-operative stay was usually longer as a result of wound infection and other complications.

The nurses working in thoracic surgical unit have responsibility to prepare the patients for operation according to their needs. Usually the surgeon manages the date for operation. It depends on the availability of surgical suite and preparation of the patients. Patients need to be prepared physically as well as financially to pay the operation charge and buy medication for operation. Preoperative nurses inform patients and their relatives to arrange everything in time as ordered by surgeon. Nurses can ensure about the pathological examination, regular breathing exercise, preoperative blood transfusion, and nutrition. The patients who are poor and cannot arrange their necessary items; nurses can help them to contact with the social welfare

department of the hospital for financial support. Nurses are also responsible to receive necessary medications from the members of social welfare department. Some relatives cannot meet the surgeon due to official work. They usually ask nurses about their patients and make decision according to discussion with nurses. Nurses also convey that information to the surgeon for the relatives. Thus the preoperative nurses help thoracic surgical patients in caring them before operation. There was no nursing plan for the preparation of patients undergoing thoracic surgery. Normally, the patients receive preoperative information from various sources: surgeon, nurses, other patients, and relatives of other patients. This information includes procedure, sensation, and some activities.

Most of the patients with infectious lung diseases need to control infection and clear pulmonary secretion before operation. These patients may have a narrow range between their physical tolerances for certain activities and their limitations, which can lead to poor postoperative outcome (Smeltzer & Bare, 2004). Some patients have to stay for more than one month after operation due to complications such as wound infection, anastomotic leakage in case of esophagectomy and have delayed rehabilitation. On the basis of literature review and the situation analysis of the hospital, the patient's understanding of preoperative information is important to reduce the postoperative complication and length of hospitalization. It is challenging to provide appropriate information in hospitals with high case loads and limited resources. The researcher conducted the study to find out the particular needed information related to thoracic surgery that was perceived by patients and the amount of information they received from the health care team during the process of

preoperative care. The findings of the study would be very helpful to further develop and improve preoperative patient education.

Objectives of the Study

1. To describe the level of preoperative needed information of patient undergoing thoracic surgery
2. To describe the level of preoperative received information of patient undergoing thoracic surgery
3. To compare the preoperative needed information and received information of patient undergoing thoracic surgery

Research Questions of the Study

1. What is the level of preoperative information needed by the patients undergoing thoracic surgery?
2. What is the level of preoperative information received by the patients undergoing thoracic surgery?
3. Is there any difference between the levels of preoperative needed and received information by patients undergoing thoracic surgery?

Conceptual Framework of the Study

To cover all contents of information relevant to thoracic surgical care, the conceptualization of preoperative information consists of five dimensions of information explored by Yount, Edgell, and Jakovec (1990) that was used incorporated with the concept of caring for patient undergoing thoracic surgery. The five dimensions include:

1) Situational and procedural information refers to the explanations about nursing care activities, equipment, events and their time sequence. The thoracic surgery patient should be informed about the type and procedure of operation,

2) Sensation–discomfort information refers to patients feeling of pain and discomfort that he/she may feel light-headed the first time he or she stands up after surgery,

3) Patient role information refers to the behavior expected from patients to make decision for operation and to perform some activities to achieve treatment goals such as the patient will be expected to perform coughing, deep breathing, and doing leg exercises for prevention of complication,

4) Skills training information explains the guided practice by physiotherapist to develop some skills such as coughing and deep breathing that help with postoperative recovery, and

5) Psychosocial support information refers to the patient-nurse interactions that enable the patient to deal with the anxiety and enhance coping. The nurse encourages the patient to discuss any fears or concerns that he or she has about the surgery.

All of above information should be provided to the patient during the preoperative period. In terms of thoracic surgery, the specific content of information needs was divided into five dimensions.

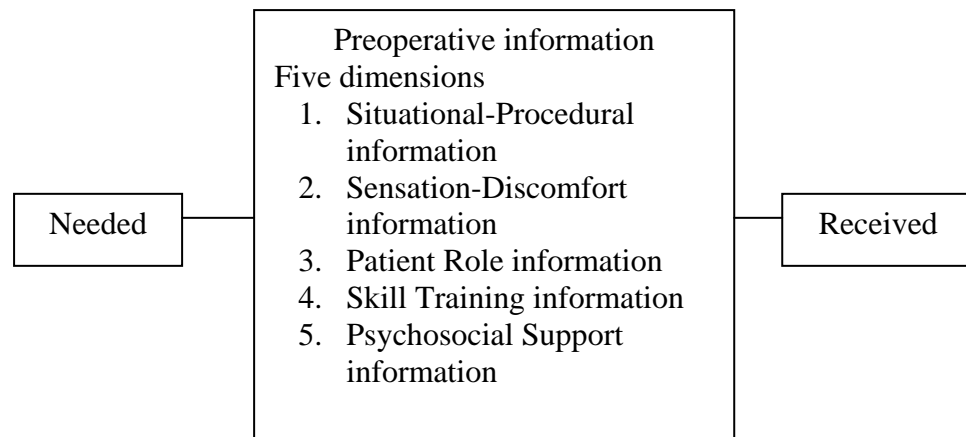


Figure 1. Conceptual Framework of the study

Hypothesis

There is a difference between preoperative needed information and information received by patients undergoing thoracic surgery.

Definition of Terms

Preoperative needed information was defined as the information related to thoracic surgical procedure that patients wanted to know during the preoperative period. The structure of needed information comprised of five dimensions according to Yount, Edgell, and Jakovec (1990) including: situational or procedural information,

sensation-discomfort information, patient role information, skill training, and psychosocial support information. All content of information needs was measured by a self reported questionnaire during preoperative period which is modified from Samsudin (2005) and literature review on caring for thoracic surgical patients.

Preoperative received information was defined as information related to thoracic surgery which patient received from health care professionals during preoperative period. The structure of information received comprised of five dimensions identical for the needed information.

Significance of the Study

The findings will be useful for further development of preoperative educational program for patients undergoing thoracic surgery. More specifically, it will be beneficial in the following ways.

1. To facilitate nurses in providing appropriate preoperative information to patients in the preoperative preparation.
2. To assist nurses in developing preoperative information materials appropriate for patients undergoing thoracic surgery which can reduce patients stress.
3. To develop a training package for new nursing staff to support knowledge related to thoracic surgery, for the patients.

CHAPTER 2

LITERATURE REVIEW

This chapter presents the literature review related to thoracic surgery and preoperative needed and received information of patients undergoing thoracic surgery.

The content was grouped into 4 parts as follows:

1. Overview of patients undergoing thoracic surgery

- 1.1 Indication of thoracic surgery

- 1.2 Investigation of thoracic surgery

- 1.3 Impacts of thoracic surgery

2. Patients' information need

- 2.1 Concept of Information need

- 2.2 Definition of information need

- 2.3 Types of information

- 2.4 Sources and Function of information

- 2.5 Nurses' role in providing information

3. Preoperative information for patients undergoing thoracic surgery

- 3.1 Preoperative education for patients undergoing thoracic surgery

- 3.2 Preoperative needed and received information in patients undergoing thoracic surgery.

- 3.3 Assessment of preoperative needed information in patients undergoing thoracic surgery

- 3.4 Relationship between preoperative needed and received information in patients undergoing thoracic surgery

4. Factors associated with patients' needed and received information

1. Overview of Patients Undergoing Thoracic Surgery

Thoracic surgery is the surgical procedure which is done for the patients suffering from the disease related to lungs, esophagus, diaphragm, and tumor in the chest cavity (Urden, Stacy, & Lough, 2006). Thoracic surgery is done for the resection of the destroyed lung, reconstruction of the esophagus, repair of the diaphragm, and removal of chest tumor. The incision is performed either antero-laterally or postero-laterally to resect the affected portion of the lung.

The patients develop some infection or inflammation in the chest then they meet doctor for medical treatment. The patients with pleural effusion can be cured with medical treatment after aspiration of pleural fluid. Some cases develop thickened pleura as a result of pleural effusion that need to be operated by decortication that is removal of pleura. Some patients with pulmonary tuberculosis can not be cured by chemotherapy with anti tuberculosis drugs who do not continue the medication and develop multi drug resistant tuberculosis and finally the affected lung has become destroyed that need to be operated by pneumonectomy.

Thoracic surgery is the most sensitive procedure because it occurs when the patients have some problems with the respiration. Initially, patients have some infectious or non-infectious disease in the lungs such as lung abscess, lung cancer, cysts, benign tumors (Smeltzer & Bare, 2004). Most patients who admitted to hospital with lung disease generally present with many symptoms such as haemoptysis, cough in case of bronchiectasis, chest pain in case of tumor in the lung, difficulty in

respiration, fever in case of infection in the thoracic cavity such as lung abscess and empyema thoraces, and weight loss in case of pulmonary tuberculosis and esophageal carcinoma (Abernathy & Harken, 1991). Some patients with these symptoms will be selected for surgery depending on respiratory difficulties from various causes. The overview of thoracic surgery includes indication, investigation, and impacts of thoracic surgery.

1.1 Indication of thoracic surgery

There are two types of thoracic surgeries namely elective thoracic surgery and emergency thoracic surgery (Hanif, Mirza, & Chaudhry, 2005). The following criteria are commonly used for elective thoracic surgery: 1) the respiratory problems due to malignant neoplasm (squamous cell carcinoma, adeno-carcinoma, small cell carcinoma), 2) benign lung disease most often caused by pulmonary tuberculosis, and bronchiectasis, and 3) dysphagia due to cancer in the esophagus (Abernathy & Harken, 1991).

Emergency thoracotomy is done with the following indications. Firstly, the patients with hemodynamic instability due to blood loss are indicated to emergency operation. An immediate chest tube resulting 1500 ml or continued loss of 200 ml per hour for more than 3 consecutive hours are the reliable to undergo emergency thoracotomy. Secondly, penetrating trauma which comprises of gunshot, stabs and blunt trauma is also indication for emergency thoracotomy (Kozian, Schilling, Strang, & Hachenberg, 2006).

1.2 Investigation for thoracic surgery patient

The investigation given to thoracic surgery patients is varied. However, the common investigative procedures for the thoracic surgical patients include taking

blood for serum albumin, urea nitrogen, creatinine, glucose, electrolytes, and complete blood cell count, Chest x-ray, and electrocardiogram (Smeltzer & Bare, 2004).

The common investigations for thoracic surgery are bronchoscopic examination for biopsy to detect whether it is cancer or not, and spirometry (lung function test) to identify the ability of lung to expire the air in 1 second forcefully (Boffa et al., 2008; Jolley, 2007). The most specific indicator of lung function is forced expiratory volume in 1 second (FEV1). This indicator may also be used to determine the improvement of lung function after operation to compare with preoperative period (Win et al., 2007). In addition, sputum for gram staining, culture and sensitivity, and acid fast bacilli is done to detect the presence of tuberculosis in patients undergoing surgery.

Furthermore, there are some advanced investigations required to be done in some patients. Computed tomography scanning is the advance technology to help and guide the surgeon to minimize the loss for the patients. Ultrasonography of the chest also helps the surgeon to minimize patients' loss. Fine needle aspiration cytology (FNAC) will be required in case of any growth or lesion in the lung to detect the tumor. All of these investigations are done during the preoperative period.

1.3 The impacts of thoracic surgery.

Patients undergoing thoracic surgery usually have both physiological and psychological impacts. These impacts could occur in short term and long term.

1.3.1 The short term impacts are respiratory complications, cardiac complication, pain, and hemorrhage. The details are as follows:

Atelectasis is the most common complication. Due to immediate post operation, patients remain immobile or do not take deep breaths, thick secretion can

accumulate and pool in the lower respiratory structures. The secretion interferes the normal exchange of gas; that causes alveoli collapse (Linton & Maebius, 2003). In addition, microorganisms reach pulmonary tissue by either exogenous or endogenous route. These include non sterile gastric content, aspiration of oropharyngeal suction colonized by potentially pathogenic microorganisms, hematogenous or lymphatic spread of pathogens and inhalation of contagious material in aerosol form from the external environment. The extrinsic factors that influence to develop pneumonia are endotracheal intubation; prolong use of broad spectrum antibiotics, stress ulcer prophylaxis, enteral feeding, chest and upper abdominal surgery, increased length of hospitalization and ICU stay (Smeltzer & Bare, 2004). Other respiratory complications such as empyema, air leak or effusion, brochopleural fistula, chylothorax, pulmonary embolism, and lobar gangrene (Dales, Donne, Leech, Lunau, & Schweitzer, 1993) are also seen. Not only lung complication, but also cardiac complications may be developed. It could be caused by improper management of fluid volume and insufficient care in anesthetics drugs. Unstable hemodynamic condition is also responsible for the development of cardiac complication (Dales et al., 1993).

Pain is the common experience of thoracic surgery patients even 48 weeks after operation (Ochroch, Gottschalk, Troxel, & Farrar, 2006). The expectation of pain after surgery is the most frightening to the patients (Whyte & Grant, 2005). This is also the source of anxiety to the patient before operation. The patients expect more pain than real one. Approximately half of the patients with thoracoabdominal resection suffered from procedure-related pain (Olsen, Grell, Linde, & Lundell, 2009).

Hemorrhage is the most serious complication of an operated patient. There is a common problem of hemorrhage during operative procedure that the patient

needs to cover during the postoperative period. The patients who are less motivated to control the movement after operation are risk to have internal bleeding. If bleeding is severe, shock may occur (Kozian, Schilling, Strang, & Hachenberg, 2006).

Other complications such as renal failure, cerebral infarct, gastrointestinal bleeding, and wound infection are also found in thoracic surgery patients (Dales et al., 1993). These complications are related to postoperative management of patients.

1.3.2 The long term impacts. From literature review, it was found that after 6 months of operation the lobectomy patients had lost 15% of their preoperative forced expiratory volume in the first second (FEV1) and 16% of their exercise capacity, and pneumonectomy patients had lost 35% of their preoperative FEV1 and 23% of their exercise capacity (Win et al., 2007). Furthermore, the patients undergone thoracic surgery also experience some psychological impacts. For example the patients operated by esophagectomy need to receive further dilatation that causes of fear and anxiety (Sweed, Schiech, Barsevick, Babb, & Goldberg, 2002). The lung cancer patients also need chemotherapy and radiotherapy after operation (Handy et al., 2002). These patients also experience fear and anxiety as a result of side effect of chemotherapy and radiation therapy.

Although there are some negative impacts of thoracic surgery for the patients, benefits after operations can be observed. The operation for lung diseases is usually done for relieving the symptoms and improving the quality of life of patients undergoing surgery. The patients undergoing thoracic surgery will be able to show following evidences of benefit after surgery. There are some studies on postoperative quality of life in patients after lung cancer surgery. The study of Handy et al. (2002)

compared baseline preoperative and 6 month postoperative functional health status and quality of life of patients undergoing lung cancer resection. The result was found that patients operated with lung cancer experience significant differences in improvement of physiological functioning, role functioning-physical, social functioning, mental health, and bodily pain.

2. Patients Information Need

2.1 Concept of information need

By exploring the concept of information, Timmins (2006) has explained the people reaction to a stimulus. Information needs will arise in a person, the needs to be an individual reaction to a stimulus. This stimulus can be due to major life changes, other events or life threatening or incapacitating illness. This can be perceived as a challenge or a threat, depending on novelty, timing in life and level of uncertainty or unpredictability about the event. In response to events, individuals displayed two major coping mechanisms: managing the problem that is problem-focused coping and regulating their response that is emotion-focused coping (Timmins). Problem focused coping includes seeking information, trying to get help, inhibiting action and taking direct action. It is this information seeking that creates the information need. The information received helps them to adapt to their situation. These needs were identified as unique to individuals and subjective in nature. These information needs are not necessarily related to knowledge of event, treatment modalities or causes and could be idiosyncratic in nature. Thus, information needs are personal expressed needs of the client/family/nurse for specific condition-related information. The provision of

information by nurses in responses to the analysis of clients' individual information needs is an ever-expanding task that crosses the boundaries of all aspects of nursing care.

2.2 Definition of information need

Forsetlund and Bjorndal (as cited in Revere et al., 2007) defined information as "any stimulus that reduces uncertainty in a decision making process". Information need may be defined as both the recognition of what information can reduce the uncertainty as well as unrecognized or potential information need. Information does not only allow patients to better cope up with their illness; information is also an essential requirement for the patient participation in decision making (Vogel, Bengel, & Helmes, 2008).

2.3 Types of information

Patients' needed information is information that patients expect to receive from the surgeon and other health care personnel. The information may be provided at the first visit in the out patient department. Several types of information are required such as definite diagnosis, type of operation, date of operation, duration of operation, length of hospital stay. According to Yount, Edgell, and Jakovec (1990), there are five dimensions of patient needed information during perioperative period. These are 1) situational or procedural information, 2) sensation-discomfort information, 3) patient role information, 4) skills training information, and 5) psychosocial support information. The explanations of each dimension are described as follows:

2.3.1 Situation and procedural information. Procedural information is defined as an explanation of how and why the procedure is being carried out (Thompson, Melby, Parahoo, Ridley, & Humphreys, 2003). The explanation of

nursing care activities, equipment, events and their time sequence (Yount et al., 1990). The event expected to be experienced during surgical procedure, including nursing care activities and application and use of medical equipment and technology. This dimension also includes the information on timing and sequence of the events (Bernier, Sanares, Owen, & Newhouse, 2003).

2.3.2 Sensation-discomfort information. Sensory information is an explanation of sensation during the procedure (Thompson et al., 2003). The description of what the patients will feel during the process (Yount et al., 1990). This information describes what the patients may feel, see, or hear in relation to surgical procedure (Bernier et al., 2003). The patients will feel the discomfort of using endotracheal tube during operation.

2.3.3 Patient role information. Patient role information is defined as activities the patients would be expected to perform in order to achieve treatment goals (Yount et al., 1990). This information includes patients as active participant in the treatment process in achieving treatment goal (Bernier et al., 2003). Patients may perform some activities like deep breathing exercise, coughing to clear pulmonary secretions.

2.3.4 Skill training information. Skill training information is defined as explanation and guided practice of skills such as coughing and deep breathing that aid with postoperative recovery (Yount et al., 1990). Skill training encompasses an explanation of specific skills and provides an opportunity for patients to practice those skills before operation as a means of helping postoperative recovery (Bernier et al., 2003).

2.3.5 Psychosocial support information. Psychosocial support information is defined as patient-nurse interactions that can enable patient to deal with anxiety and enhance coping (Yount et al., 1990). It pertains to the interaction between patient and care providers, which is aimed at helping patients deal with anxiety, concerns and fears about surgery (Bernier et al., 2003).

2.4 Sources and function of information

Patients generally receive information about the operation from surgeon or physician (Vogel et al., 2008). Other sources of information may be anesthetist, ward nurses (Jonsdottir & Baldursdottir, 1998; Scott, 2004) physiotherapist, and other health care providers such as radiology technician, pathology technician, and other auxiliary staffs depending on which information is required (Jolley, 2007).

According to the function of information, it refers to the benefit of patient from receiving information. Providing appropriate information enables patients to be more informed about their treatment and care and also facilitate to make decision and choices (Walker, 2007). Preoperative teaching, leads to understand his or her role in overall process and how he or she can facilitate or delay the recovery (Whyte & Grant, 2005). Patients want information to understand and assist the treatment and recovery process, to care for physical condition afterwards, to make decision about care (Henderson & Chien, 2004). Giving appropriate information to patient can improve the quality of care, postoperative recovery, and pulmonary function (Reeve, Denehy, & Stiller, 2007) provided in a variety of clinical settings. Over the past thirty years of research review, it has shown that giving information to patients prior to surgery decreased the pain and stress associated with surgery (Thompson et al., 2003), reduce anxiety (Spalding, 2003) and increased knowledge level (Gilmartin, 2004; Johansson,

Nuutila, Virtanen, Katajisto, & Salantera, 2005). The quality of life after operation was improved (Win et al., 2007). Information provision to the surgical patients has an empowering effect (Suhonen & Leino-Kilpi, 2006).

2.5 Nurses' role in providing information

As a care provider nurse has the pivotal role to provide information according to patients' needs (Westerling & Bergbom, 2008). The nurse needs to assess the problem first and then plan to solve the problem. Nurses can provide calm and quiet environment, informative interaction that helps patient prepare for their surgical procedure (Dunn, 1997). Nurses' role also includes preoperative assessment (Barnett, 2005; Suhonen & Leino-Kilpi, 2006), and promotes patient satisfaction (Langon, 1998). The surgical nurse needs to assess the patients' situation and provide appropriate information to the patients so that patients can take decision for their treatment (Samsudin, 2005). Nurses also clarify the information that patients gather from other sources like doctor and other health care provider. Nurse can assess patients' condition, evaluate overall health status, determine risk factor, and educate them accordingly (Plauntz, 2007). Nurses can provide psychosocial support to the patients to adjust with the new information about their treatment and disease process. Nurses should explain the advantages and disadvantages of the care that are planned to do.

3. Preoperative Information for Patients Undergoing Thoracic Surgery

3.1 Preoperative education for patients undergoing thoracic surgery

The content of preoperative teaching should include all significant issues related to a particular patient's operation. For the provision of information, the content can be separated into two groups: related to thoracic surgery in general and related to a specific operation.

3.1.1 General preoperative information. At the initial approach, the surgeon usually provides an explanation of the proposed surgery. Retention of this information depends on the rapport between the surgeon and patients, the surgeon's willingness to provide information, and the patient's curiosity, emotional state, and intelligence (Whyte & Grant, 2005). There are some variations of knowledge among the patients. The patients with better understanding about the disease would like to know more and could get the information more than the patients who are less educated. All patients need to have previous understanding of the procedure, the purpose, the risk, the alternatives, and the importance of active participation in the surgical process. Although the information is given by the surgeon, the nurse should clarify the patients understanding of that information. The preoperative teaching should cover the following content:

1. Respiratory hygiene. Respiratory hygiene refers to the clearance of pulmonary secretion through active cough, postural drainage, and taking some therapy such as nebulization. Post operative complication such as atelectasis and pneumonia can be prevented through proper clearance of pulmonary secretion (Smeltzer & Bare, 2004). Walking, sitting to eat, and performing other activities all can contribute to improved pulmonary hygiene and a decreased incidence of postoperative pneumonia (Whyte & Grant, 2005). Patient can be taught to splint the operative site to minimize pain with coughing. Deep breathing can open collapsed

alveoli and prevent overt atelectasis. Using of an incentive spirometer for improved ventilation of the lungs and avoidance of alveolar and segmental collapse. Eating in bed should be avoided to prevent the aspiration and regurgitation. Although all of this respiratory hygiene is required for performing in postoperative period, patients should be taught in the preoperative period.

2. Pain. The most frightening thing for patients facing surgery is the expectation of pain. The patients need to be informed the pattern of postoperative pain, duration of pain (and protocol of postoperative pain management (Kastanias, Denny, Robinson, Sabo, & Snaith, 2009; Smeltzer & Bare, 2004; Whyte & Grant, 2005). The goal of postoperative analgesia with its side effect should be discussed.

3. Smoking cessation. Smoking is significant preoperative risk factor (Rudra & Das, 2006). Faced with an upcoming operation, the patient may use smoking as a method of coping with anxiety and fear. Cigarette smoking impairs mucociliary clearance mechanism of tracheobroncheal tree and may predispose to postoperative pulmonary complication (Lauerman, 2008; Smeltzer & Bare, 2004; Whyte & Grant, 2005). Smoking is known as cause of respiratory complications, hemodynamic fluctuations and delayed wound healing (Lauerman,). Patients need to be counseled effectively, however to stop smoking in preparation for surgery before 10 weeks to decrease the postoperative complication.

4. Diet. Preoperative patient education should cover nutritional issue. It is essential particularly patients who have recently experienced a significant weight loss and patients who undergone preoperative chemotherapy (Whyte & Grant, 2005). The first group includes patients with esophageal cancer in whom dysphagia or odynophagia have limited their oral intake and resulted in a long lasting calorie

deficiencies. The second adequate nutritional support is necessary for the improvement of patients' condition before operation (DeLegge & Drake, 2007).

5. Wound care. Thoracic surgery patients need to have intra-thoracic tube to drain the blood, fluid, (Smeltzer & Bare, 2004) which retained almost two or three weeks. The patients have to do the activity of daily living with the tube. The patients need to be taught how he or she will deal with the tube and the surgical wound as well.

6. Pre and postoperative physiotherapy. Preoperative education on improving quality of care includes preoperative physiotherapy for the patient undergoing thoracic surgery. Post operative physiotherapy is important to reduce the length of hospital stay and incidence of atelectasis (Reeve, Denehy, & Stiller, 2007). Chest physiotherapy includes postural drainage, chest percussion, and vibration, and breathing exercises/breathing retraining (Smeltzer & Bare, 2004). Teaching the patient effective coughing technique is an important part of physiotherapy. The goals of chest physiotherapy are to remove bronchial secretions, improve ventilation, and increase the efficacy of the respiratory muscle. The thoracic surgical patients receive chest physiotherapy before and after operation. The three aspects of chest physiotherapy are discussed below:

Postural drainage uses specific positions that allow the force of gravity to assist the removal of bronchial secretions. The secretions drain from the affected bronchioles to the bronchi or trachea and are removed by coughing or suctioning. The nurse instructs the patient to inhale bronchodilators and mucolytic agent as prescribed, before postural drainage because these medications improve bronchial tree drainage (Smeltzer & Bare, 2004).

Chest percussion and vibration help to dislodge mucous adhering to the bronchioles and bronchi. Percussion is carried out by cupping the hands and lightly striking the chest wall in a rhythmic fashion over the lung segment to be drained. A soft cloth or towel may be placed over the chest to prevent skin irritation and redness from direct contact. Vibration is the technique of applying manual compression and tremor to the chest wall during the exhalation phase of respiration. This helps to increase the velocity of the air expired from the small airways, thus freeing mucus. After three or four vibrations, the patient is encouraged to cough, using the abdominal muscles (Smeltzer & Bare, 2004).

Breathing retraining consists of exercises and breathing practices designed to achieve more efficient and controlled ventilation and to decrease the work of breathing. These exercises promote maximal alveolar inflation and muscle relaxation, relieve anxiety, eliminate ineffective, uncoordinated patterns of respiratory muscle activity, slow the respiratory rate, and decrease the work of breathing (Smeltzer & Bare, 2004).

3.1.2 Procedure specific information. In addition to the general information, each patient needs teaching directed toward the specific operation (Whyte & Grant, 2005). The information should cover the size and location of incision, the general outline of operation, expected postoperative physiologic state, and general overview of the risk of postoperative complications. Some common examples are stated as below:

1. Pulmonary resection (lobectomy/pneumonectomy). Special information for pulmonary resection are pain and potential for decreases in pulmonary reserve (Smeltzer & Bare, 2004; Whyte & Grant, 2005). Thoracotomy incision is

notoriously painful, and immediate postoperative pain has to be managed effectively by analgesic medication, the issues of ongoing narcotic use and the gastrointestinal side effect should be discussed. The patients with decreased lung function should be advised that they are likely to have less exercise capacity and nasal oxygen therapy may be necessary on a short term basis. The pneumonectomy patients should be informed that they are going to lose one lung and at particular risk for symptomatic decreases in exercise capacity and should be counseled accordingly (Whyte & Grant). The removal of entire lung (pneumonectomy) is performed chiefly for cancer when the lesion cannot be removed by a less extensive procedure. It also may be performed for lung abscess, bronchiectasis, and unilateral tuberculosis. The right sided pneumonectomy is more dangerous than the left. The right lung has a larger vascular bed and its removal impose greater physiologic burden (Smeltzer & Bare). When the pathology is limited to one area of lung, a lobectomy is performed. Lobectomy is more common than pneumonectomy. Bronchogenic carcinoma, giant emphysematous blebs or bullae, benign tumors, metastatic malignant tumors, bronchiectasis, and fungus infections are the common indication of lobectomy.

2. Esophagectomy. It is associated with significant short term and long term morbidity and consequently warrants special attention in a discussion of preoperative teaching. The operation generally involves two incision namely thoracic and abdominal incisions (Whyte & Grant, 2005). For these patients, specific preoperative teaching includes the surgical risks such as bleeding, infection, anastomotic leakage, and risk of intra-operative and postoperative death. The common indications of esophagectomy are esophageal stricture, primary motility disorder, perforation, and paraesophageal hernia. The postoperative complications are 1)

respiratory; atelectasis, pneumonia, respiratory failure, 2) cardiovascular; arrhythmia, acute myocardial infarction, congestive heart failure, 3) dilatation within 3 months, 4) Wound infection, 5) anastomotic leak, 6) recurrent pharyngeal nerve damage. Patient undergone esophagectomy with old age is associated with cardiovascular complication. Perioperative esophageal perforation is associated with higher incidence of anastomotic leakage (Young et al., 2000). After operation these patients need to be kept nil per mouth for at least 7 days and continuous nasogastric suction is indicated to improve anastomotic healing. The nurse should explain the patient about the goal of treatment so that patient can accept that condition easily.

3.2 Preoperative needed and received information of patients undergoing thoracic surgery

The preoperative needed information in thoracic surgery patients consists of five dimensions.

3.2.1 Situational and procedural information. According to reviewing literature (Bernier, Sanares, Owen, & Newhouse, 2003; Samsudin, 2005; Yount, Edgell, & Jakovec, 1990), the situational and procedural information can be defined as the procedures and events that patients will face during the treatment process. The information includes investigative procedure, date, time and type of operation, location of operation room, procedure of anesthesia, types of anesthesia. The waiting area and recovery room, anesthesia check up, using of pain medication, duration of surgery, site of surgical incision, surgical procedure, are also included as situational and procedural information. In addition, the information covers possession of the chest drainage tube; one or two tubes, nasogastric tube for esophagectomy patients, dress for operation including removing of jewelry, giving injection before operation

emptying of bladder and bowel and time of return to ward. The patients also need to know about the medical equipment such as ventilation. The patients have to know the estimated time to recover from surgery, usual length of hospital stay, time for family visitation, postoperative routine care, diet after surgery, time of removing stitch, tube and drains and changing dressing, and wound care after discharge.

3.2.2 Sensation discomfort information. Sensation discomfort information includes the explanation of feeling that patient will feel during the treatment course (Yount, Edgell, & Jakovec, 1990). The patients should be informed about the feeling of fear and anxiety to see equipment in operation room, feeling of smell, and feeling of cool in operation room. The information includes feeling of pain and discomfort from the using of some device necessary for operation. These devices are tube, drain, intravenous cannulation or central venous catheter. The patients should be informed about the feeling of having face mask, nausea, vomiting, drowsy and pain after operation and also the discomfort immediate after anesthesia. In addition, patients may also feel discomfort in lying without pillow. Feeling of smell and taste of some drugs, placing the tubes into the nose and throat should also be informed (Samsudin, 2005).

3.2.3 Patient role information. Patient role information refers to the information that helps the patients to perform some specific activities to prompt their recovery such as self management to improve health condition before going to operation, cooperation with operative team during operation, and self care to prevent complication during postoperative period. These activities include deep breathing exercise, lung rehabilitation, active coughing, and leg and foot exercise, range of motion when he or she in the bed (Samsudin, 2005; Yount et al., 1990). Smoking

cessation is one of the significant behaviors which patient must comply to prevent the respiratory complication after operation. Staying in bed after receiving preoperative medication, cooperating with nurses for monitoring consciousness and vital signs are also included in the patients' role information. In addition the patients have to learn how to keep the wound dry, observing and reporting if there is any abnormality (fever, pain, swelling and smell from the wound) (Samsudin).

3.2.4 Skills training information. Skills training information is defined as the guided practice of skills such as nurse teaches the patients how to support the incision when moving in bed, coughing, or deep breathing (Yount et al., 1990). The patients need to be trained about deep breathing and effective coughing to drain the pulmonary secretion by the physiotherapist (Bernier et al., 2003). The breathing exercise with the incentive spirometry is one important skill training for the thoracic surgery patients. The patients should be trained about the way of coping with anxiety, practicing pain relief methods using non pharmacological technique such as prayer, sharing in religious discussion.

3.2.5 Psychosocial support information. Psychosocial support information refers to interaction between the patients and health care provider which enables the patients to deal with anxiety and fear and enhance coping (Bernier et al., 2003; Samsudin, 2005; Yount et al., 1990). The nurse should encourage the patients to discuss about the anticipated fear of surgery and postoperative complication. The provider should listen about patient worries about the family and assure the patients about informing family member about the progress of surgery, informing the patients where the family waiting, when they can visit the patients.

3.3 Assessment of preoperative needed information in patients undergoing thoracic surgery

The perception of preoperative teaching questionnaire (PTQ) developed by Bernier et al. (2003) and Yount et al. (1990) were reviewed. Yount et al. (1990) investigated nurses' perception on preoperative teaching by using 73-item questionnaire, organized into five subscales based on five types of preoperative information. The content validity of the instrument was verified by using a panel of nurse experts and consumers. Pilot testing led to further refinement of the items. Consistency of response to questionnaire items was examined using Cronbach's alpha coefficients, which ranged from 0.82 to 0.94 for the five subscales.

Bernier et al. (2003) modified the 73-item Preoperative Teaching Questionnaire (PTQ) by selecting only 26 items to fit with their study. Nine experts in perioperative nursing validated the content of previous questionnaire named as preoperative teaching interview guide (PTIG). Five subscales or domains of teaching in PTIG include situational/ procedural information (11 items); psychosocial support (six items); sensation/ discomfort information (four items); patient role information (four items); and skill training information (one item).

The following study conducted by Samsudin (2005) constructed the new instrument to measure the patients and nurse perception in perioperative information need. There were 50 items including five dimensions of preoperative needs. The reliability of that instrument for internal consistency was tested using Cronbach's alpha and that was .93.

From the above review, 52 items for five dimensions of information need modified from Samsudin (2005) were then developed to measure preoperative need

information in thoracic surgical patients. Some specific content related to situational procedural in thoracic surgery were added such as type of operation in item number 17, common procedure e.g. chest tube drainage in item number 19. In skill training omitted leg, added lung exercise using incentive spirometer item number 39. In item number 40 omitted imagery, added prayer. In item number 47 omitted cast, added chest tube. New items 51 the time a physiotherapist will visit you to teach specific exercise. Some item had been changed appropriate with the context e.g. operation in place of surgery, praying in place of imagery. The total 52 items of the questionnaire included: situational and procedural information (23 items), sensation- discomfort information (12 items), patients role information (7 items), skill training information (5 items), and psychosocial support information (5 items). With 52 items, one open ended question as obtained for the additional and others needed preoperative information. The same items were also used for preoperative received information.

3.4 Relationship between preoperative needed and received information in patients undergoing thoracic surgery

According to previous literature, if more information is required, patient would more likely to seek information and will be willing to retain the information related to their disease and treatment (Krupat, Fancy, & Cleary, 2000). The patients who received information related to their disease and treatment can participate in decision making, playing particular role during the period of treatment to enhance the better outcome and decrease the incidence of postoperative complications (Suhonen & Leino-Kilpi, 2006). Due to lack of studies specific to patients needed and received preoperative information, satisfaction could be one outcome to reflect the gradation of both. Thompson et al. (2003) who studied on information provided to patients

undergoing gastroscopy procedure found that majority of patients (95.9%) was satisfied with overall information given to them prior to the procedure. Another study also found that the satisfaction could be caused by provision of good quality information and facilitate patient to be active involvement in their care and contribute to over all satisfaction (Walker, 2007). However, the relationship between needed information and received information has not been explored yet in health care settings particularly in surgical procedure.

4. Factors Associated with Patient Needed and Received Information

There are several factors influencing the amount and types of information needed and received. These factors are categorized into two types: 1) internal factors and 2) external factors.

4.1 Internal factors

4.1.1 Age is the factor related to needed and received information in patients undergoing surgery (Johansson, Hupli, & Salanterä, 2002). There are different age groups of patients coming with the disease that need operation. According to the study on information provided to patients undergoing gastroscopy procedure, it was found that the older patients needed more information than the younger patients (Thompson et al., 2003). The older patients also received more information (Hughes, Hodson, Muller, Robinson, & McCorkle, 2000; Suhonen & Leino-Kilpi, 2006).

4.1.2 Gender is the great issue in seeking health care in some developing countries. Different finding was found in previous studies. Female patients are more

desirous for information than the male patients (Henderson & Chien 2004; Suhonen & Leino-Kilpi, 2006). They also mentioned that the difference between male and female was consistent with all responses. According to Bernier et al. (2003), male patients received and valued more situational-procedural information, patient role information and psychosocial support information whereas female patients received and valued more sensation-discomfort and skills training information.

4.1.3 Educational background plays the important role in seeking and receiving information about the disease and treatment process (Johansson et al., 2002). The patients with secondary and tertiary level of education are more desirous of information than the patients with primary level of education (Henderson & Chien, 2004).

4.1.4 Socioeconomic condition is another factor that can influence the information need. The participants with annual income less than US \$20,999 preferred situational-procedural information more than participants in higher annual income (Henderson & Chien, 2004; Suhonen & Leino-Kilpi, 2006).

4.1.5 The previous experience also influences the information need in patients undergoing surgery. According to Whyte and Grant (2005), patients with previous knowledge are interested to know more about further information.

4.2 External factors

4.2.1 Type of surgery. The patients who undergone elective surgery have more time waiting for the surgery. During this time, they receive information from the health care provider related to the operation and complication of operation. They can ask whatever needed information.

In case of emergency, patients and their relatives have no more time to ask detail information about the operation and side effects. The minimum level of information is provided for the emergency operative patients and their relatives within the short period of time.

4.2.2 Availability of informant/ resources. Some health care settings provide the information handbook for the patients when they are in the outpatient department. This system helps the patients to get more information about their treatments and consequences (Krenzischek, Wilson, & Poole, 2001).

Summary

Thoracic surgery is the special and critical procedure that requires appropriate preparation of the patients to achieve the expected outcome after operation. Preoperative information plays an important role in the preparation. The literature review on patient information need in thoracic surgery include the information about the disease, symptoms related to diseases, treatment procedure and the treatment goal. The information on thoracic surgery includes the indications for thoracic surgery, and investigations for thoracic surgery. Impacts of thoracic surgery both positive and negative consequences should be provided to the patients.

Based on concept of information, there are five dimensions of information including situational and procedural information, sensation discomfort information, patient role information, skill training information, and psychosocial support information. To cover all types of information relevant to thoracic surgical care, the five dimension of information were applied.

The core content of preoperative information in patients undergoing thoracic surgery includes respiratory hygiene, and regular drainage of pulmonary secretions and pain. Smoking cessation is the important message for patients to reduce postoperative pulmonary complication. Diet and nutrition is essential for restore the health both before and after treatment. Wound and drains care is important part of postoperative care to ensure better outcome.

Information related to specific operation such as the pneumonectomy, lobectomy, and esophagectomy is required. For example the patients with esophageal problem need to know about the feeding after operation. While the patients with cancer need to know about the quality of life after operation. The findings of previous study showed that receiving information before operation is important for surgical patients. This study will therefore examine the extent to which information Needs and received among patients undergoing thoracic surgery, and its relationship.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter presents the research methodology for this study. It consists of research design, population and setting, sample, and sampling, instrumentation, Protection of human rights, data collection procedures, and data analysis.

Research Design

This study using descriptive design aimed to describe preoperative needed information and received information in patients undergoing thoracic surgery and also to compare the needed and received information.

Population and Setting

The target population was the hospitalized thoracic surgical patients who were planned for thoracic surgery at the National Institute of Disease of the Chest and Hospital (NIDCH) Dhaka, Bangladesh.

The National Institute of Disease of the Chest and Hospital is only one chest hospital in Bangladesh. The patients are referred from all districts/ divisions of the country with the following problems: accidental chest injury, blunt trauma of the chest, pulmonary tuberculosis, lung cancer, esophageal cancer, tumor in the sternum, tumor in the mediastinum, ruptured diaphragm, bronchoesophageal fistula, foreign body in the bronchus, and esophagus, pleural effusion, pyothorax, pneumothorax,

hemothorax, chylothorax, etc. By reviewing a monthly medical record, the average number of patients undergoing thoracic surgery was 45-55 (Hospital Statistics, 2008).

There are 2 operating rooms and 4 surgical wards provided for surgical patients. With a higher demand of operative cases in the limited resources, the patients have to wait for thoracic surgery approximately 1 month. Some patients who are in need for an elective surgery require time to improve physical conditions. The routine preoperative care for these patients is controlling the infection with antibiotic and clearance of pulmonary secretion by postural drainage and physiotherapy. The preoperative investigations are also obtained during this period. Special diet such as high protein diet and blood transfusion are also provided if necessary. Nurses are responsible to ensure whether the patients receive these services during the preoperative period and also accountable to the head of the department.

Sample and Sampling

Sample size calculation. The sample size of the study was estimated by using power analysis (Polit & Beck, 2004). The estimated sample size was calculated for an accepted minimum level of significance (α) of .05, and an expected power of .80 ($1-\beta$). The effect size was calculated from one previous study (Samsudin, 2005) to determine the patients' information needs perceived by nurses and patients in five dimensions. Effect size ranged from .17, .19, .26, .30, and .42 respectively. The researcher selected the largest effect size that was nearest to .40 because the study has focused on one group (only patients) and the relationship would expect to be high. Therefore, the sample size was 98 that was the accessible number of subjects to be

collected for the study. However, during the period of data collection (November, 2009 to January, 2010), there was limited number of cases who met the inclusion criteria. Thus only 70 adult patients undergoing major thoracic surgery participated in this study. Suggested post hoc power analysis could not be done because of the limitation of software in doing post hoc power analysis with non-parametric statistics (Wilcoxon Signed Rank test). However, effect size was calculated from this study, which yielding of 1.48.

Subjects were recruited by purposive sampling using the inclusion criteria as follows:

1. Aged over 18 years old.
2. An elective case for thoracic surgery
3. Alert and able to communicate with the researcher

Instrumentation

A set of questionnaires consisted of 3 parts including demographic data, preoperative needed information, and received information related to thoracic surgery.

Part 1: The Demographic Data Sheet (DDS). The demographic data sheet was used to assess demographic characteristics of the subjects. It included gender, age, marital status, religion, level of education, occupation, monthly income, previous operations, medical diagnosis, and type of surgery.

Part 2: The Needed Information Questionnaire (NIQ). To examine the level of patients' preoperative needed information related to thoracic surgery, the NIQ modified from Samsudin (2005) which was based on Yount, Edgell, and Jakovec's

work (1990) was used. The questionnaire consists of 52 items, which was organized by using five dimensions as follows:

1. Situational and procedural information has 23 items (item 1-20, 47, 48, and 52)
2. Sensation-discomfort information has 12 items (item 21-31, and 49)
3. Patient role information has 7 items (item 32-36, 50, and 51)
4. Skills training information 5 items (item 37-41)
5. Psychosocial support information has 5 items (item 42-46)

Each item was rated by using a 4-point Likert scale ranging from '1' (not needed), '2' (slightly needed), '3' (moderately needed), and '4' (highly needed). The possible scores ranged from 52 - 208. In order to determine the level of preoperative needed information, the total scores were divided into three levels. The scores ranged from 52 - 104 indicated low level of needed information, the scores ranged from 105 - 156 indicated moderate level of needed information, and scores ranged from 157 - 208 indicated the high level of needed information.

Part 3: The Received Information Questionnaire (RIQ). The item structure of the RIQ was similar to preoperative needed information questionnaire. It was used to examine the level of received information. Each item was rated by a 4-point Likert scale ranging from '1' (not at all), '2' (rare), '3' (sometimes received), and '4' (always received). The possible scores ranged from 52 - 208. In order to determine the level of received information during preoperative period, the total score was divided into three levels using the same criteria as the NIQ.

*Psychometric testing of the instrument**Validity of the instrument*

The content validity of the instrument was assessed by three experts. Two experts from Thailand were surgical nursing faculties of Faculty of Nursing, Prince of Songkla University. Another was a surgeon of Department of Surgery, National Institute of Diseases of the Chest and Hospital. The content of the instrument was evaluated for relevance to patients' needed information in preoperative period. The researcher modified the instrument according to experts' recommendations.

Reliability of the instrument

The reliability of the instrument was tested through a pilot study with 20 thoracic surgical patients for the understanding of the content in every dimension of the information. The internal consistency reliability was tested using Cronbach's alpha yielding values of .88 and .87 for needed information questionnaire and received information questionnaire respectively.

Translation of the instrument

The original English version questionnaire of needed information and received information was modified by the researcher. The English version was directly translated into Bengali language by a bilingual translator of the translation centre in Dhaka. The questionnaire was checked again by the researcher for correct translation of medical terminology commonly used in health science. Both Bengali and English version were given to a surgeon of the Thoracic Surgery Department for the final check of the discrepancy of meaning. In fact no discrepancy was found between two versions of the instrument. Then the Bengali version of the instrument was used for data collection.

Protection of Human Rights

To protect the human rights and maintain confidentiality, some aspects were taken into consideration. Approval from the Institutional Review Board (IRB), Faculty of Nursing, Prince of Songkla University was obtained. Permission to conduct the study was obtained from the director of Institute of Disease of the Chest and Hospital and the head of Surgical Department. The researcher explained the purpose of the study to the eligible subjects. Verbal consent was taken from the subjects who were interested in participating in the study, as specified in the consent form (Appendix A). They received further explanation about the study and their right to stop or discontinue for any reason without fear of any negative consequences of care provided to them during their hospitalization. The researcher used the coding system to identify the subject. Participants were assured of anonymity, confidentiality of all information given, and that the use of such information would be only for the purpose of this study. The subjects of this study got benefits with some explanation of their needed information and amount of received information. The explanation of some events increased the level of anxiety in low motivated patients. The researcher concerned about the potential harm in terms of emotional instability of the patients. If some patients developed anxiety during responding to the questionnaire, the researcher would stop the interview and would support the patient until he/ she was ready to continue. If there was a case of high level of anxiety, he/ she was referred to health care team or consultant. There were only three subjects diagnosed with destroyed lung and in need for pneumonectomy develop mild respiratory difficulties

and received care with oxygen inhalation and positioning as head raised up to 45 degree.

Data Collection Procedures

After obtaining all required approval, the researcher explained the objectives of the study to the nurse in charges.

The following procedures were conducted:

1. The researcher selected the patients from the admission record book in the surgical wards. Subjects who met the inclusion criteria were approached to participate and informed about the purpose of the study.

2. The demographic data were recorded including medical record to obtain the primary information in their health profile on the first day of admission.

3. The preoperative needed information questionnaire was administered during 24-48 hours after admission.

4. The questionnaire on preoperative received information was administered during 24-48 hours before operation.

5. Both self report and interview were used for data collection.

Data Analysis

The collected data were analyzed using descriptive statistics, inferential statistics, and simple content analysis for open-ended question.

Descriptive statistics were used to analyze the demographic data, the score of needed information and received information data. Initially, paired t-test was planned to analyze the mean difference between needed information and received information. However, the distributions of the collected data were not normal. They failed to meet the assumption of paired t-test analysis. Therefore the Wilcoxon Signed Rank test was used to determine the difference between needed information and received information in patients undergoing thoracic surgery.

In addition, the simple content analysis was done to analyze the qualitative data of the particular needed information in patients undergoing thoracic surgery obtained during the data collection process.

CHAPTER 4

RESULTS AND DISCUSSIONS

The results and discussion of the findings of the study follows:

1. Subjects' characteristics
2. Preoperative needed and received information
3. Difference between preoperative needed and received information.

Results

Subjects' Characteristics

The demographic and health characteristics of 70 thoracic surgical patients are presented. The subjects were in a large age range starting from 18 to 68 years. The average age was 40 years with a standard deviation of 15.04. Three-fourths of the subjects were male and married and 94% were Muslim. Approximately 43% of the subjects had completed a secondary school education. One quarter (25.7%) of the subjects were farmers, followed by 22.9% being housewives. Almost half of the subjects had no income followed by 37.1% reporting very low income and only 8.6% had a monthly income between 3000 Tk to 5000 Tk (approximately Thai baht 1500-2500, US Dollars 45-75) (Table 1).

Regarding health characteristics, 90% of the subjects had their first surgical experience with different types of operation such as decortication (24.3%), resection and anastomosis of esophagus (21.4%). Approximately thirty percent had been

diagnosed with mass, lesion in the lung, followed by 27.1% reporting a diagnosis of thickened pleura (Table 2).

Table 1

Frequency and Percentage of Subjects Classified by Demographic Characteristics
(N=70)

Characteristics	Frequency	Percentage
Age (years) M = 39.41 (SD = 15.04)		
18-30	23	32.9
31-40	12	17.1
41-50	20	28.5
51-60	9	12.9
> 60	6	8.6
Gender		
Male	52	74.3
Female	18	25.7
Marital status		
Single	20	28.6
Married	50	71.4
Religion		
Islam	66	94.2
Christian	2	2.9
Hindu	2	2.9
Education		
No education	6	8.6
Primary school	22	31.4
Secondary school	30	42.9
Diploma	1	1.4
Bachelor degree and higher	11	15.7

Table 1 (continued).

Characteristics	Frequency	Percentage
Occupation		
None	4	5.7
Student	8	11.4
Farmer	18	25.7
Housewife	16	22.9
Government employee	6	8.6
Private employee	10	14.3
Laborer	7	10
Retirement	1	1.4
Income per month (Tk)		
None	31	44.3
1000 - 3000	26	37.1
3001 - 5000	6	8.6
5001 - 20000	6	8.6
> 20000	1	1.4

Table 2

Frequency and Percentage of Subjects Classified by Health Related Characteristics

(N=70)

Characteristics	Frequency	Percentage
Duration of preoperative day		
(M = 26.23, SD = 6.21, Min = 15, Max = 36)		
15 - 21 days	16	22.9
22 - 28 days	25	35.7
29 - 36 days	29	41.4

Table 2 (continued).

Characteristics	Frequency	Percentage
Previous surgical experience		
Yes	7	10
No	63	90
Types of preoperative diagnosis		
Thickened pleura	19	27.2
Bronchiectasis	5	7.2
Mass/ growth in the lung	21	29.9
Destroyed lung due to pulmonary TB	9	12.8
Esophageal cancer	16	22.9
Types of operation		
Decortication	17	24.4
Lobectomy	11	15.7
Pneumonectomy	13	18.6
Resection & anastomosis of esophagus	15	21.4
Excision & removal of mass	14	19.9

Level of Preoperative Needed and Received Information

Overall the mean scores of preoperative needed and received information were at high level (M = 205, SD = 9.23 and M = 193, SD = 6.73, respectively). The mean scores of preoperative needed information in each dimension were close to the maximum score particularly the information related to situation-procedural (M = 91.1), patient role (M = 19.9, SD = 0.55), skill training (M = 27.8, SD = 0.96), and psychosocial support (M = 19.8, SD = 0.90) which indicated the high needed information (Table 3). In addition, the top 5 items of the preoperative needed

information ($M = 3.99 - 4.00$) were related to situation-procedural and psychosocial support particularly the information about the date and time of operation and having nurses to listen and answer to patient's worries. However, the lowest 5 items of preoperative needed information were related to sensation discomfort information ($M = 3.81 - 3.89$) (Table 4).

Table 3

Possible Range, Actual Range, Mean, Standard Deviation of Preoperative Needed and Received Information (N=70)

Preoperative Information	Possible Range	Needed			Received		
		Actual Range	Mean	SD	Actual Range	Mean	SD
Total score	52-208	158-208	205	9.23	162-208	193	6.73
Situation-procedural	23-92	70-92	91.1	3.64	82-92	91.1	2.38
Sensation-discomfort	12-48	20-48	46.5	4.56	18-48	34.9	4.38
Patient role	7-28	21-28	27.8	0.96	24-28	27.2	1.17
Skill training	5-20	16-20	19.9	0.55	16-20	17.7	1.86
Psychosocial support	5-20	13-20	19.8	0.90	13-20	19.6	1.26

The mean score for the received information was also high particularly in relation to situational-procedural information ($M = 91.1$, $SD = 2.38$). However, information about sensation-discomfort was rated much lower than the maximum score ($M = 34.9$, $SD = 4.38$) which indicated that the subjects of this study did not perceive this information as highly necessary (Table 3). The highest scores of the 5

items of received preoperative information ($M = 4.00$) were related to situation procedural information. While the lowest scores of the 5 items in preoperative received information ($M = 2.36 - 2.87$) were related to sensation discomfort especially about operating room environment and anesthesia (Table 5).

Table 4

Mean and Standard Deviation of Five Items with Highest and Lowest Scores of Preoperative Needed Information

Preoperative needed information	Mean	SD	Dimension
Five items with highest scores			
The date and time of operation	4.00	0.00	Situation-procedural
Having nurses to listen and answer to your worries	4.00	0.00	Psychosocial support
The type of operation	3.99	0.12	Situation-procedural
The estimated time to recover after operation	3.99	0.12	Situation-procedural
The care after discharge from hospital	3.99	0.12	Situation-procedural
Five items with lowest scores			
The smell and taste of certain drugs used for anesthesia induction	3.81	0.55	Sensation-discomfort
The feeling of excitement or anxiety of seeing many medical equipments and unfamiliar environments	3.83	0.59	Sensation-discomfort
The sensation after receiving anesthesia	3.84	0.50	Sensation-discomfort
The sensation of wearing an operative gown	3.84	0.50	Sensation-discomfort
The feeling of pain sensation, nausea etc.	3.89	0.44	Sensation-discomfort

Based on open-ended question of the needed information, 68.6% of subjects reported needing additional information about the cost of surgery and treatment, 17.14% needed information about post-operative dietary modifications and restrictions. Nine percent had question about post-operative rehabilitation and 5% were concerned about post-operative complication. The subjects who underwent resection and anastomosis for esophageal cancer in particular asked for information about post-operative dietary modifications and restrictions.

Table 5

Mean and Standard Deviation of Five Items with Highest and Lowest Scores of Preoperative Received Information

Preoperative information	Mean	SD	Dimension
Five items with highest score			
The date and time of operation	4.00	0.00	Situational-procedural
The description of preoperative assessment	4.00	0.00	Situational-procedural
Procedure to do the day or night before operation	4.00	0.00	Situational-procedural
Procedure to do before you go to the operating room	4.00	0.00	Situational-procedural
The location of operating theatre, reception room (preoperative holding area), and postoperative ward	4.00	0.00	Situational-procedural
Five items with lowest scores			
The sensation after receiving general anesthesia	2.36	0.59	Sensation discomfort
The feeling of exciting and anxiety of seeing many medical equipments and unfamiliar environments	2.37	0.62	Sensation discomfort
The sensation after receiving preoperative medication	2.44	0.61	Sensation discomfort
The sensation of wearing an operative gown	2.44	0.61	Sensation discomfort
The feeling of coldness in operating room	2.63	0.73	Sensation discomfort

Difference between Needed and Received Information

There was a significant difference in mean ranks of needed and received preoperative information ($z = -6.57, p < .01$). The Wilcoxon test showed that the mean rank in favor of needed information was 35.11; while the mean rank in favor of information received was 24.75 (Table 6).

Table 6

Differences between Needed and Received Information Determined by Wilcoxon Signed Rank Test (N=70)

Preoperative information	n	Mean rank	Sum rank	z
Received < Needed	64	35.11	2247	-6.57**
Received > Needed	4	24.75	99	
Received = Needed	2			

** $p < .01$

For the sub dimensions, it indicated that there was a significant difference in mean rank of preoperative needed and received information in 3 dimensions. They were information related to sensation-discomfort ($z = -7.09, p < .01$), patient role ($z = -3.36, p < .01$), and skill training ($z = -6, p < .01$). There was no significant difference in mean ranks of needed and received preoperative information in situational-procedural and psychosocial support dimension (Table 7).

Table 7

*Differences Between Needed and Received Information of Each Dimension**Determined by Wilcoxon Signed Rank Test (N=70)*

Preoperative information		n	Mean rank	Sum rank	z
Situational- procedural	Received<Needed	7	4.93	34.50	-.13
	Received>Needed	4	7.88	31.50	
	Received=Needed	59			
Sensation- discomfort	Received<Needed	65	34.97	2273.00	-7.09**
	Received>Needed	2	2.50	5.00	
	Received=Needed	3			
Patient role	Received<Needed	25	13.94	348.50	-3.36**
	Received>Needed	3	19.17	57.50	
	Received=Needed	42			
Skill training	Received<Needed	43	22.88	984.00	-6**
	Received>Needed	1	6.00	6.00	
	Received=Needed	26			
Psychosocial support	Received<Needed	7	5.14	36.00	-1.6
	Received>Needed	2	4.50	9.00	
	Received=Needed	61			

** p < .01

Discussions

This study was conducted to describe the level of needed and received preoperative information and determine the difference between preoperative needed and received information among thoracic surgical patients.

Subjects' Characteristics

The majority of the subjects were Muslim due to 80% of total population is Muslim in Bangladesh (Directorate General of Health Services, 2007). The particular age group and gender of subjects in this study were middle age males. This factor correlates with previous study which found that males are more likely to suffer from chest diseases than females (Dales, Donne, Leech, Lunau, & Schweitzer, 1993).

Approximately 43% of the subjects obtained secondary education, which was congruent with the national average literacy rate of 51.6% (Directorate General of Health Services, 2007). Approximately 44% of the subjects had no income and 37.1% had very low income (< 3000 Tk = 45 US Dollars) compared to the average per capita income of 3947.75 Tk (Directorate General of Health Services). Low income levels underscored the needs for financial support during severe illness. According to the demographic and health data, most of the thoracic surgical patients were poor. Patients were admitted with symptoms of chest pain, cough, and difficulty in breathing. Patients diagnosed with infection, inflammation of the lungs and lung tumors were scheduled for thoracic surgery. These patients also had x-rays of their chest along with laboratory testing of blood and sputum. The common diagnoses were lung abscess or infection and bronchitis, which caused thickened pleura and bronchiectasis. From the onset of diseases up to the operation, most patients suffered for months to years with the various symptoms and underwent treatments such as long-term antibiotic therapy as well as several diagnostic procedures. Patients with the help of relatives paid for the total cost of operation and pre and post-operative assessment. The government support for the hospitalized patients is limited to a few drugs and intravenous fluids. In addition, all thoracic surgical patients required blood

transfusion during preoperative and intra-operative period. The duration of preoperative hospital stay ranged from 15 to 36 days.

The long waiting period for surgery usually was a direct consequence of the patients' inability to pay or secure blood supply for the operation. Although there is a social welfare department for the poor, it provides limited financial support. This support is very difficult to receive and it takes a long time. No one in the study received support from social welfare. All subjects in the study had to pay all expenses before operation as presented in the additional question for needed information in thoracic surgical patients. Most of the patients wanted to know about the cost of operation in order to manage the money for operative charge and buy medicine for operation. In addition, the relatives had to arrange blood from other blood bank by their own effort in case of shortage of required blood in the hospital blood bank.

Levels of Preoperative Needed and Received information

The findings show that thoracic surgical patients in this study rated the needed information at a high level during preoperative period. The finding is also consistent with the study by Henderson and Chien (2004) on information needs among Hong Kong Chinese patients undergoing surgery. They found that all participants rated the needed information at high level. They also rated all five dimensions of the needed information at high level particularly in situation-procedural, patient role, skill training, and psychosocial support (Table 3). The need for information related to situation-procedure was especially essential for thoracic surgery as it was one of the major operations that may cause several complications if preoperative preparation is inadequate. This is similar to a previous study by Samsudin (2005) who found that patients undergoing surgery ranked situation-procedural information first. The other

content area addressed information about event, sensation, self care, and psychological support. Although the 5 items in needed information related to sensation-discomfort dimension were ranked lowest, all items were rated as high with few scores dropping below 3.9 (Table 4). Thoracic surgical patients needed all the information to understand all procedure that would alleviate sufferings and shorten recovery time.

The majority of the patients underwent their first surgical experience and the level of needed information was high which was consistent with the study by Bernier, Sanares, Owen, and Newhouse (2003) on preoperative teaching received and valued in a day surgery setting. In Bernier et al.'s study the patients who underwent first time surgical experience, highly valued the preoperative teaching. In this situation the surgical nurses should assess the particular needed information and provide it as required. Thoracic surgery is usually done to remove parts of lungs or esophagus. Patients, who are diagnosed with a mass or tumor in the lungs, lung cancer, and cancer in the esophagus requiring operation, usually experience anxiety and are afraid (Smeltzer & Bare, 2004). Adequate information about their diseases and treatment enable the patients to cope with this stressful situation. Patients can participate in their treatment process by doing some activities during the pre and post-operative periods (Lithner & Zilling, 2000) if they know the activities and their benefits. Patient information should be provided after admission and before going to the operating theatre (Yount, Edgell, & Jakovec, 1990).

In Bangladesh, especially in the chest hospital patients stay in the hospital for a long time before operation due to a limited number of operating rooms and only 2-3 operations are done every scheduled operating day. The time for operation starts from

8.00 AM in the morning and lasts until 2.00 PM or 3.00 PM in the afternoon. Only 12 to 15 cases are then operated in a week leading to the longer preoperative period. Providing preoperative information is very helpful during this awaiting time. Subjects in this study can receive the information during preoperative period as supported by their rating of received information at high level. There is a positive relationship between duration of preoperative hospital stay and received preoperative information (Suhonen & Leino-Kilpi, 2006).

Patients from different areas of the country come to this hospital. Regarding to several visits, patients realize the importance of preoperative information and want to know about their disease and the surgical procedures. Even though patients received information from their primary doctor about the need of operation prior to admission, the surgical procedures are discussed at the time of admission. In addition, most patients need to wait for long time for the preparation of operation. Then the patients receive the information several times. Another source of information is from the patients' relatives and other patients. The relatives are allowed to stay with patients in the hospital and always discuss with other patients who have had their surgery. Some issues of patients' concerns and information related to surgery are shared. Further clarifications of the information are then sought from doctors and nurses. The nurses are asked to clarify the important issue patients received from the doctors and other sources.

It is the role of surgical nurses to provide the clear picture of patients needed information and prepare the patients for operation. During preoperative period, some patients experience anxiety about their operation and progress of the disease process. The nurses and doctors provide psychosocial support by listening patients concerns

and reassure them with clear explanation of care facilities during the treatment process. According to the study by Brumfield, Kee, and Johnson (1996) on preoperative patient teaching in ambulatory surgery setting, the patients ranked situational information such as explaining activities and event as the most important teaching in preoperative period whereas nurses ranked psychosocial support such as dealing with worries and concern as the most important.

This present study found that subjects received least information related to sensation-discomfort information such as sensation and feeling after receiving general anesthesia ($M = 2.36$, $SD = 0.59$), feeling of excitement and anxiety of seeing many medical equipments and unfamiliar environment ($M = 2.37$, $SD = 0.62$) (Table 3). These items are related to the activities inside the operating theatre. Thoracic surgical patients of chest hospital usually wait for operation and stay in the ward. They cannot visit the operating room before operation. Therefore, they have fewer concerns about the internal environment and activities of operating room.

Difference between Preoperative Needed and Received Information

Even though the patients rated the needed and received information at high level, there was a statistically significant difference of preoperative needed and received information. Among 70 subjects, 64 of them ranked the needed and received information negatively which indicated that 91.43 % of patients received less information than they needed. The finding was similar to Rankinen et al. (2007) on expectation and received knowledge; it was found that surgical patients received less knowledge than they felt. The difference between preoperative needed and received information were found in three dimensions including sensation-discomfort information, patient role, and skill training information. There is no preoperative

teaching for thoracic surgical patients in the hospital. Nurses provide information related to the procedure or events that are necessary for the thoracic surgical patient during preoperative period.

It is quite impossible to provide information about every dimension if the setting has no structure of preoperative information. The chest hospital does not provide educational booklet for the thoracic surgical patients. Even there is no structured guideline for thoracic surgical nurses to teach the patients during preoperative period. The structured preoperative patient education is helpful to provide information regarding all dimensions of information. Methods of providing preoperative information may also influence the received information. In the study of nurses' perception of preoperative teaching for ambulatory surgical patients by Tse and So (2008), they found that limited teaching aids, tight operation schedules and language barriers affected the delivery of preoperative information to the patients. In the context of Bangladesh, although the operation schedule is not too tight, there is no structured preoperative information guideline. This would affect received information.

The discrepancy of the needed and received information in the skill training dimension was interesting (Table B1 in appendix). There is a gap in the delivery of information specific to pain management and coping strategies for anxiety and stress. In the setting the postoperative pain is usually managed by administering the analgesic drugs according to doctors' order. Patients expect to have more information to reduce pain but they received it less than they expected. Non-pharmacological method for pain management was neither used nor advised. Factors such as a long waiting period for operation, and lack of financial support increased patient anxiety and stress. The information about coping with anxiety might not be believed and then

they expected of received information less than needed. A discussion with surgical nurse did not relieve anxiety.

It was not surprising that the needed and received preoperative information in situational-procedural and psychosocial support dimensions were not different (Table 7). As above explanation, the preoperative information may be highly needed among the patients who had the first surgical experience. All items of those two dimensions of information were received as high congruent with their need (Table B1 in appendix). However, it is anticipated that the differences of needed and received information might be further explored particularly in those different gender and income because it could affect the level of situational-procedural and psychosocial support information.

Scarcity of resources such as leaflets or written information could be one limitation in Bangladeshi hospital. The study conducted by Kielty (2008) on an investigation into the information received by patients undergoing a gastroscopy in a large teaching hospital in Ireland. The researcher found that patients received most of the standard procedural information and considerably less sensory information. That study identified the need of patients information leaflet to make patients understand their necessary information. According to Derham (1991), the overall patients in intensive care unit were satisfied with the information contained in booklet but felt they required additional advice about their proposed surgery and needed more time to understand the information provided by nurses. Both written and verbal information are necessary for surgical patients. Patients can share the written document with their relatives and the illiterate patients benefit from verbal information (Lithner & Zilling, 2000).

Regarding the 5 lowest items of received information, details of operating environment and anesthesia were less than needed. This could be due to the absence of teaching in this area and having no experience of unfamiliar environment. This is congruent with a study on information provided to surgical patients versus information needed which found a gap of information provided about the details of anesthesia and operating room environment (Mordiffi, Tan, & Wong, 2003). Another study on the importance of perioperative care from a patient's perspective, it also reflected the importance of visiting the anesthesiologist and operating room helps patient feel calm, secure, and safe (Westerling & Bergbom, 2008).

In summary, the findings from this study revealed that the preoperative needed and received information were at high level. The highest needed and received information were related to situational-procedural dimension. Overall, there was a discrepancy of needed and received information. Preoperative information related to sensation-discomfort, patient role, and skill training was received less than needed.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATION

A descriptive study was designed to describe the level of preoperative needed and received information in patients undergoing thoracic surgery. This study was conducted at the specialized hospital in the capital of Bangladesh. Subjects were recruited using purposive sampling from four thoracic surgical wards of the national chest disease hospital. Seventy thoracic surgical patients participated in the study. Data were collected from November 2009 to January 2010 using a self report questionnaire. The questionnaire consisted of three parts: 1) demographic data sheet, 2) needed information questionnaire, and 3) received information questionnaire. Three experts tested the content validity of the instruments and the Cronbach's alpha reliability of the needed information questionnaire and received information questionnaire were .88 and .87, respectively. The collected data were processed through computer program. This chapter presents the summary of the study, strengths and limitations, and implications and recommendations.

Summary of the Study Findings

Subjects in this study were 70 thoracic surgical patients from four thoracic surgical wards. The age of subjects ranged from 18 to 68 years 74.3% were male and 71.4% were married. Ninety percent of the subjects had the first surgical experience. The common operations were resection and anastomosis of esophagus, lobectomy, pneumonectomy, and removal of tumor from the Chest.

The subjects rated the preoperative needed and received information at high level with the Median of 208, (M = 205, SD = 9.27) and 194 (M = 193, SD = 6.74), respectively. The five items of highest needed information were related to situational-procedure of thoracic surgery, five dimensions of needed and received information were also rated at high level. The five items of lowest received information were related to activities inside operating room.

Wilcoxon test showed the significant differences in preoperative needed and received information. The mean rank in favor of needed information was 35.11, while the mean rank in favor of received information was 24.75 ($z = -6.57$, $p < .01$). Information related to sensation-discomfort, Patient role, and skill training information should be taken into account as they were found in discrepancy. However, there was no significant difference in mean rank of needed and received information in situational-procedural dimension and psychosocial support dimension.

Strengths and Limitations

The strength of the study consists of:

1. It was conducted in a specialized hospital with thoracic surgical patients to compare the preoperative needed and received information in the same time. It would help the subject to realize the gap between needed and received information.

2. The researcher collected data through direct contact with the patients. It would help the researcher to ensure subjects' understanding of the questionnaire. The interaction with subjects allowed the researcher to ask any issue and further details related to their needs.

Limitations of the study are:

1. Subjects were recruited purposively that may not be the representative of all surgical patients.

2. Long instrument and long preoperative period might influence in response to the questionnaire. Subjects responded twice on the same item of questionnaire which might influence the direction of response. Interview by the researcher is another limitation which may affect the response.

3. Patients are usually admitted in the hospital without any schedule of operation which affects the response to RIQ and then the lengths of preoperative hospital stay limited the number of subjects in the study.

4. The results may not be generalized in all settings due to small sample size and study at one chest hospital.

Implication and Recommendation

1. The findings could emphasize the importance of assessing the preoperative information needs and reevaluate the information patients received. Structured preoperative teaching including sensation discomfort would be required.

2. These findings can be used to formulate a checklist to assess the preoperative information needs and evaluate the outcomes of teaching received by thoracic surgical patients. It will help to teach the patients in preoperative period.

3. Further research should be conducted with a larger sample size to ensure the more reliable and valid findings.

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APPENDICES

APPENDIX A
INFORMED CONSENT FORM

Study Title: Preoperative Information Needed and Received in Patient undergoing Thoracic surgery in Bangladesh.

Investigator: Nasima Akter

My name is Nasima Akter. I am a master student of Faculty of Nursing, Prince of Songkla University, Thailand. I am also a senior staff nurse of National Institute of Disease of the Chest and Hospital (NIDCH), Dhaka Bangladesh. I am going to conduct a study to assess the preoperative patient information need and received in patient undergoing thoracic surgery at NIDCH. This is to fulfill the requirement of the master of nursing program.

The study and its procedures have been approved by the appropriate people and the Institutional Review Board (IRB) of the Prince of Songkla University, Thailand. The study procedures involve no foreseeable risks or harm to you. You are asked to respond to questions about your personal information need and received during preoperative period/ care. You need to respond to the questionnaire two different times, before and after operation it should take approximately 30 – 60 minutes in each time to complete the questionnaire. I will use a code number so that your identity will not be disclosed.

The information will be used to write a research report. The information will help to improve the quality of care in the clinical area. It will also provide a preoperative patient education, staff training, and integration of new knowledge into practice.

The information I can gather for the study will be kept confidential. Only the investigator and the major advisors are eligible to access the data. Your name and any identifying information will not be used in the report of the study. All the papers of your information will be damaged after completion of the study.

Your participation in this study is voluntary. You have the right to consent or decline participation. You also have the right to withdraw participation at any time.

Lastly, if you are agreed to participate in the study please sign in and return the questionnaire with appropriate responses. You are free to ask questions or report concerns you have regarding this study.

(Name of participant) (Signature of Participant) Date

(Name of Researcher) (Signature of Researcher) Date

If you have any inquiries, please contact

Nasima Akter

Senior Staff Nurse

National Institute of Disease of the Chest
and Hospital (NIDCH)

Dhaka, Bangladesh

Phone: 01917961305

Master of Nursing Science

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Prince of Songkla University

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APPENDIX B

TABLE

Table B1
Preoperative Needed and Received Information (Mean and SD)

No	Preoperative Information	Needed		Received	
		M	SD	M	SD
Situational-procedural information					
1	The date and time of operation	4.00	0.00	4.00	0.00
2	The type of operation	3.99	0.12	3.99	0.12
3	The description of preoperative assessment (e.g. blood test, chest x-ray etc.)	3.99	0.12	4.00	0.00
4	Procedure for the day or night before operation (e.g. bowel preparation, skin preparation, food and drink restriction or NPO, and intravenous fluid)	3.97	0.17	4.00	0.00
5	Procedure before leaving for the operating room e.g. giving medications, removing jewelry and dentures, and urinating (empty your bladder)	3.97	0.17	4.00	0.00
6	The amount of time spending in the reception room (preoperative holding area), operating room and postoperative ward.	3.99	0.12	3.89	0.32
7	The sequence of events experienced during preoperative, intra-operative and postoperative phase	3.99	0.12	3.91	0.28

Table B1 (continued)

No	Preoperative Information	Needed		Received	
		M	SD	M	SD
Situational-procedural information					
8	The approximate time to return to the post operative ward after you awake from anesthesia	3.99	0.12	3.94	0.23
9	The usual length of hospital stay	3.97	0.17	3.99	0.12
10	The time for family visitation	3.99	0.12	3.99	0.12
11	The location of operation theatre, reception room (preoperative holding area), and postoperative ward	3.99	0.12	4.00	0.00
12	The general anesthesia to be obtained (e.g. procedure of anesthesia, types of anesthetic drugs)	3.93	0.31	3.93	0.26
13	The visiting time of an anesthetist to discuss what anesthesia will be used	3.97	0.17	3.99	0.12
14	The visiting time of physiotherapist to teach specific exercise (e.g. deep breathing exercise, effective cough, postural drainage)	3.97	0.17	4.00	0.00
15	Pain management including medication and its administration and non pharmacological method	3.94	0.29	3.93	0.26
16	Duration of operation	3.91	0.50	3.93	0.12
17	The site of surgical incision	3.94	0.38	4.00	0.00
18	The brief description of surgical procedure (pneumectomy/ lobectomy/ decortication/ esophgectomy, remove tumor)	3.91	0.41	3.91	0.28

Table B1 (continued)

No	Preoperative Information	Needed		Received	
		M	SD	M	SD
Situational-procedural information					
19	The approximate time to return to the post operative ward after awakening from anesthesia	3.91	0.44	3.89	0.32
20	The description of postoperative routine care e.g. intravenous fluid infusion, wound care (surgical dressing), using of medical equipment, oxygen therapy, chest rehabilitation, nature of postoperative nursing assessment (frequently monitor vital signs)	3.89	0.47	3.87	0.38
21	The appropriate time to start diet after operation	3.96	0.36	3.99	0.12
22	The care after discharge from hospital (e.g. wound care)	3.99	0.12	4.00	0.00
23	The appropriate time to remove intravenous infusion, drain IT tube, and wound suture	3.96	0.20	3.93	0.31
Sensation discomfort information					
24	The feeling of having an oxygen mask to assist breathing before and after operation	3.91	0.41	3.84	0.44
25	The feeling of pain sensation, nausea, etc.	3.89	0.44	2.76	0.84
26	The feeling of discomfort from the intra thoracic (IT) tubes after operation (one or two tubes) urinary catheter, etc.	3.94	0.29	2.96	0.71
27	The sensation after receiving preoperative medications (e.g. drowsy)	3.91	0.41	2.44	0.65

Table B1 (continued)

No	Preoperative Information	Needed		Received	
		M	SD	M	SD
Sensation discomfort information					
28	The sensation of lying on the stretcher during transfer to and from the theatre (e.g. lying down without pillow, having limited space)	3.93	0.26	2.67	0.61
29	The sensation of wearing an operative gown	3.84	0.56	2.44	0.61
30	The sensation after receiving anesthesia	3.84	0.50	2.36	0.59
31	The feeling of exciting or anxiety of seeing many medical equipments and unfamiliar environments (operating lighting, masked/ gowned personnels)	3.83	0.59	2.37	0.62
32	The feeling of coldness in the operating room	3.84	0.50	2.63	0.73
33	The smell and taste of certain drugs used for anesthesia induction (e.g. xylocain spray, halothane)	3.81	0.55	2.81	0.77
34	The sensation of discomfort from inserting endotracheal tubes pass through the throat and nose or mouth	3.83	0.59	3.76	0.58
35	The feeling of discomfort when the tubes, drains, catheter, etc. are removed	3.90	0.35	3.89	0.63
Patient role information					
36	Signing the informed consent only after understanding what is to be done during operation	3.99	0.12	4.00	0.00
37	The way to request assistance whenever needed (e.g. asking for pain medication, moving out of bed)	3.99	0.12	3.96	0.20

Table B1 (continued)

No	Preoperative Information	Needed		Received	
		M	SD	M	SD
Patient role information					
38	The activities to perform throughout the perioperative period (e.g. a request of preoperatively, postoperative exercise including deep breathing, using incentive spirometer, range of motion exercises)	3.97	0.17	3.77	0.49
39	Staying in bed after receiving preoperative medication.	3.94	0.38	3.60	0.71
40	Cooperating with nurses for monitoring the consciousness and vital signs, wound, and IT tube	3.97	0.17	3.87	0.38
41	Observing and reporting to nurses if there is something wrong (e.g. having fever, pain, swelling, and smelling from the wound, etc.)	3.99	0.12	4.00	0.00
42	Taking care of the surgical wound (e.g. keep the wound dry and clean)	3.99	0.12	4.00	0.00
Skill training information					
43	Coping with stress and anxiety before surgery (e.g. deep breathing, praying, expressing your feeling	3.99	0.12	2.87	0.93
44	Preventing the chest complications (e.g. effective coughing deep breathing exercise and quit smoking)	3.99	0.12	4.00	0.00

Table B1 (continued)

No	Preoperative Information	Needed		Received	
		M	SD	M	SD
Skill training information					
45	Turning in bed, getting out and back into bed when you have surgical wound.	3.99	0.12	4.00	0.00
46	Practicing lung exercise by using incentive spirometer, deep breathing exercise, and exercises of the upper and lower extremities after operation	3.99	0.12	4.00	0.00
47	Practicing pain relief methods using non-pharmacological technique (distraction, music, and prayer)	3.91	0.28	2.86	0.95
Psychosocial support information					
48	Having nurses to listen and answer to your worries/concerns about operation	4.00	0.00	3.99	0.12
49	Being reassured that it is common to have fear and anxiety about operation	3.96	0.36	3.97	0.17
50	Being informed where your family members and friends can wait while you are in operating room	3.96	0.36	3.99	0.12
51	Being assured that your family member can see you after operation	3.99	0.12	3.89	0.36
52	Being reassured that your family is informed about the progress of operation	3.93	0.31	3.76	0.69

APPENDIX C

PREOPERATIVE INFORMATION NEEDED AND RECEIVED IN

PATIENTS UNDERGOING THORACIC SURGERY

Code.....

Date.....

Time.....

Ward.....

Introduction: This instrument is divided into three parts. Part 1 is related to patients' demographic data. Part 2 is related to patients needed information and part 3 is related to received information in preoperative period. One open ended question is asked to provide the information that the patient wants to know.

Part 1: Patient's Demographic Data

Instruction: Please check “√” or write in the appropriate sections. Items number 9 and 10 will be filled by researcher.

1. Age.....years old

2. Gender

() 1. Female () 2. Male

3. Marital status

() 1. Single () 2. Married () 3. Widowed () 4. Divorced

4. Religion

() 1. Islam () 2. Christian () 3. Hindu () 4. Buddhist

5. Level of education

() 1. No education () 2. Primary school () 3. Secondary school

() 4. Diploma () 5. Bachelor degree or higher

6. Occupation

1. None 2. Student 3. Farmer 4. Government employee
 5. Private employee 6. Laborer 8. House wife

7. Income per month

1. No income 2. 1,000 Tk - 3,000 Tk 3. 3001 Tk- 5,000 Tk
 4. 5,001 Tk- 20,000 Tk 5. Above 20,000 Tk

8. Have you ever had an operation before?

1. Yes 2. No

If yes, please specify.....

9. Medical diagnosis as written on medical record (for researcher only)

.....

10. Types of surgery as written on medical record (for researcher only)

.....

Part 2: Preoperative Information Needs Questionnaire related to thoracic surgery.

Instruction: We are interested in knowing the level of your information needs in various types related to your surgery. Please read the following statements and check “√” in the column underneath the number that best describes the level of you need.

Level of needed information

1 = not needed

2 = slightly needed

3 = moderately needed

4 = highly needed

No	Items	Level of Needed Information			
		1	2	3	4
	How much you need to know the following information				
1	The date and time of operation				
2	The type of operation you are going to have				
3	The description of preoperative assessment (e.g. blood test, chest x-ray etc).				
4	The procedures the nurse will perform or ask you to do the day or night before surgery (e.g. bowel preparation, skin preparation, food and drink restriction or NPO, and intravenous fluid administration)				
5	Procedures the nurse will perform or ask you to do before you go to the operating room [e.g. giving medications, removing jewelry and dentures, and urinating (empty your bladder)]				
6	The amount of time you will spend in the reception room (preoperative holding area), operating room, and postoperative ward				
.....				
50	Observing and reporting to nurses if you feel there will be something wrong (e.g. having fever, pain, swelling, and smelling of wound, etc.)				
51	Taking care of your surgical wound (e.g. keep the wound dry and clean)				
52	The time a physiotherapist will visit you to teach specific exercise (e.g. deep breathing exercise, effective cough, postural drainage)				

Additional Question:

Instruction: Please answer the following question by writing on the given space.

1. Do you need other information regarding your operation that is not listed on the questionnaire?

If so, please specify:

.....

.....

.....

Part 3: Preoperative received information questionnaire related to thoracic surgery.

Instruction: We are interested in knowing the level of information you received in various types related to your operation. Please read the following statements and check “√” the number that best describes the level of you received information.

1 = not received at all

2 = Received in rare

3 = Received in sometimes

4 = Received always

No	Items	Level of Received Information			
		1	2	3	4
	How much have you received the following information				
1	The date and time of operation				
2	The type of operation you are going to have				
3	The description of preoperative assessment (e.g. blood test, chest x-ray etc.)				
4	The procedures the nurse will perform or ask you to do the day or night before surgery (e.g. bowel preparation, skin preparation, food and drink restriction or NPO, and intravenous fluid administration)				

No	Item	Level of Received Information			
5	Procedures the nurse will perform or ask you to do before you go to the operating room [e.g. giving medications, removing jewelry and dentures, and urinating (empty your bladder)]				
6	The amount of time you will spend in the reception room (preoperative holding area), operating room, and postoperative ward				
...				
50	Observing and reporting to nurses if you feel there will be something wrong (e.g. having fever, pain, swelling, and smelling of wound, etc.)				
51	Taking care of your surgical wound (e.g. keep the wound dry and clean)				
52	The time a physiotherapist will visit you to teach specific exercise (e.g. deep breathing exercise, effective cough, postural drainage)				

Thank you for your co-operations

APPENDIX D
EXPERT OF CONTENT VALIDITY INDEX

Three experts examined the content validity index of the Demographic Data, Needed Information Questionnaire, and Received Information Questionnaire.

They are

1. Assist. Prof. Dr. A. K. M. Akramul Haque
Resident Surgeon, National Institute of Disease of the Chest and Hospital
Mohakhali Dhaka, Bangladesh
2. Assist. Prof. Dr. Kanittha Naka
Nursing Lecturer, Department of Surgical Nursing, Faculty of Nursing, Prince
of Songkla University, Thailand.
3. Dr. Luppana Kitrungrrote
Nursing Lecturer, Department of surgical Nursing, Faculty of Nursing, Prince of
Songkla University, Thailand.

APPENDIX E

TRANSLATION AND FINAL CHECK OF THE INSTRUMENT

Two Persons worked on the translation of the instrument: Demographic Data, Preoperative Needed Information Questionnaire, and Received Information Questionnaire.

They are

1. Translation of the instrument

Mr. Md. Nasiruddin Ahmed

Genuine Translations, Dhaka, Bangladesh

2. Final checked by

Dr. Anowarul Anam Kibria

Registered Surgeon, Department of Surgery, National Institute of Diseases of the Chest and Hospital, Dhaka, Bangladesh.

VITAE

Name Nasima Akter

Student ID 5110420084

Educational Attainment:

Degree	Name of Institution	Year of Graduation
Bachelor of Nursing Science	College of Nursing Dhaka, Bangladesh	2005
Diploma in Midwifery	Nursing Institute Mitford, Dhaka	1993
Diploma in Nursing	Nursing Institute Mitford, Dhaka	1992

Scholarship Award during Enrollment

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