EFFECTS OF STRUCTURED PREOPERATIVE TEACHING UPON POSTOPERATIVE PHYSICAL RECOVERY AND PSYCHOLOGICAL WELFARE

A Thesis Presented in Partial Fulfilment of the Requirement for the Degree of Master of Arts in Nursing

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Earmporn Eopapong-Thongkrajai

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ADDENDUM

1. Pages 129 and Page 130: Chi-square tests are inappropriate. A t-test for independent groups is appropriate. In each case the dependent variable is the percentage of patient-nurse interaction. The data were reanalysed as follows:

   1.1. The t-test was applied to the mean percentage of patient-nurse interaction between (8) homogenous and (4) heterogenous groups. The result yielded that there was no significant difference between means of the two groups (x=87.82 and 87.88 respectively).

   1.2. Page 130, again the t-test was applied to the mean percentage of patient-nurse interaction between male and female homogenous groups. The result was there was no significant difference between means of the two groups. (t=0.3359 whereas at 5% level, df 6, t expected=2.447). This result was contrary to the previous analysis.

2. Page 157 Table 7.2.3: Chi-square is not appropriate for these data. An appropriate procedure is t-test for independent groups. In this case each patient was given a combined + and - score summing over all hospital days. It was found that there was no significant difference of mean deviation either in systolic blood pressure level or pulse rate between the control and experimental group patients. This finding was contrary to the previous analysis (t=0.2734 and 0.7888 whereas at 5% level, df=58, t expected=2.01).

3. Pages 171, 173 and 176: Using degrees of freedom at 58, t-test for two independent groups was applied to the data on vomiting, sleep pattern, and postoperative complications. It was found there was no significant difference between means of the two groups (t=0.909, 1.764 and 1.529 respectively).

4. Pages 188 and 189: The absence of dfs in the subscore analysis and the value of x in Table 7.16 suggests that average score were not used for these analyses and that instead each group was treated as if it contained approximately 60 individuals instead of 30 with two scores per person.

In view of the above problems, the data were analysed again using the average score for each category of the PCE. The findings were similar to the previous analysis i.e., there was no significant difference between the average score under each category of the PCE even though it appeared as though the experimental group patients had better scores on the communication aspect than did the control group patients.

Thus the reader should note that conclusions from the initial analyses which appear on pages 129, 130, 157, 171, 173, 176 and especially on pages 211 and 212 may be invalid.

E. Eopagpong - Thongkrajai

TABLE OF CONTENTS

PAGE

SECTION II THE MAIN STUDY

PAGE

PAGE

PAGE

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

APPENDIX PAGE

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ABSTRACT

An experimental study to test the effects of structured pre-operative teaching on the physical recovery and psychological welfare of patients admitted for elective surgery was conducted in a 600 bed general hospital. The 30 experimental subjects, 16 women and 14 men, received pre-operative instruction by means of a booklet issued shortly after arrival in hospital, and a group teaching and discussion session conducted on the evening prior to surgery. A variety of general and specific information about surgery and hospitalization was provided, including instructions for self-assessment after discharge. Teaching in the group was by means of slide and tape presentation. An equal number of control patients received only the preparation routinely provided in the ward.

Comparisons were made between the two groups of patients according to criterion measures in three categories: physical recovery, psychological welfare, and complex criteria. The latter used subjective evaluation by independent nurse observers of physical, sensory, cognitive, psycho-social and communication aspects of the patient's condition. Measures of physical recovery were complaint of pain, analgesic consumption, nausea and vomiting, post-operative complications, time to resumption of various normal body functions, sleep pattern and sedative consumption, and length of hospital stay. For psychological welfare criterion measures included scores on a specially constructed Surgical Patient Anxiety Scale; physiological indicators in the form of systolic blood pressure and pulse:

patient postoperative psychological state as observed by independent nurse observers and patients' own assessment of their feelings after discharge.

The overall results supported the general hypothesis that the structured pre-operative teaching reduced patient anxiety and aided recovery. Although few direct relationships were identified between level of pre-operative anxiety and specific aspects of post-operative recovery, there was evidence suggesting a more complex set of relationships. Analysis of group interaction in the teaching sessions showed that the teaching session had served its purpose well, and also that group composition, particularly in terms of sex, had influenced both the content and structure of patient interaction.

Implications for nursing practice, derived from these findings have been suggested, and recommendations for further study are included.

INTRODUCTION

Patient welfare and recovery is the central concept for the organization of the present study. Surgical patients are known to experience physiological and psychological stress resulting from illness, surgery and hospitalization. Therefore it is worthwhile considering the extent to which the person can be prepared for such events.

The aim of presurgical nursing intervention is to prepare the patient, and so place him in the best possible condition for such events. Numerous attempts to fulfil this function of nursing by means of preoperative teaching are reported in nursing and medical literature. In the area of preoperative teaching, two main approaches can be distinguished, one physiologically oriented and the other psychologically oriented. Taking either approach alone is inadequate from the point of view of a total person oriented approach to nursing.

In the present study, a structural preoperative teaching programme was established with the aim that it would serve as an effective tool for preoperative nursing intervention and one that could be employed readily by nursing staff. The content of the programme integrates physiological and psychological approaches.

CHAPTER 1

STRESS OF SURGERY AND HOSPITALIZATION

The aim of this chapter is to review the theoretical framework on which the author has based this study. Firstly, the concept of stress will be discussed generally, followed by consideration of the two major manifestations of stress: physiological and psychological, and finally the stress of surgery and hospitalization will be examined.

1.1 Concept of Stress and Adaptation

The concept of stress was first introduced into the life sciences by Hans Selye in 1936 leading to a full theoretical statement in 1950. Stress is defined by him as the non-specific reaction of the body to a stressor as well as the highly specific reaction involved. (Selye, 1956). Physiologically, it involves both general arousal of the body which is called the General Adaptation Syndrome (GAS), and the specific reaction in the localized area (Local Adaptation Syndrome: LAS). A stressor is defined as a tension producing stimulus with potential for causing disequilibrium, and situational or maturational crises. Stressors may be environmental, psychological or social in nature, but all generate the same physiological mechanisms within the body. In other words, general arousal of the body is common to all disease states and also to emotions (Selye, 1956).

The Local Adaptation Syndrome, typified by the inflammatory response, is the method used to wall off and control effects of

physical stressors locally. When a stressor can not be handled locally, the whole body responds to protect itself and ensure survival in the best way possible through the General Adaptation Syndrome. The General Adaptation Syndrom was described as having three stages, alarm, resistance and exhaustion (Selye, 1956). The alarm stage includes an initial shock phase (in which resistance is lowered) and the counter shock phase (in which the defensive mechanisms become active). The alarm stage involves physiological and psychological preparation to meet the threat. To meet this threat, the body must be able to adapt. The process of adaptation occurs at this stage of resistance. This process was called "coping" (Lazarus, 1966). Within this stage, maximum adaptation occurs and the body responses eventually return to normal. However, if body resistance is not maintained, i.e. should the Stressor persist or the defensive reaction prove ineffective - a stage of exhaustion is reached in which adaptive mechanisms collapse, leading to physical or psychological illness and eventually death.

1.2 Physiological Response to Stress

The alarm stage is an instanteneous short term, life preserving and mainly sympathetic nervous system response. The centre most importantly involved in activating and integrating the autonomic reactions is the hypothalamus. The posterior part of the hypothalamus primarily activates the sympathetic division and the anterior part primarily activates the parasympathetic division.

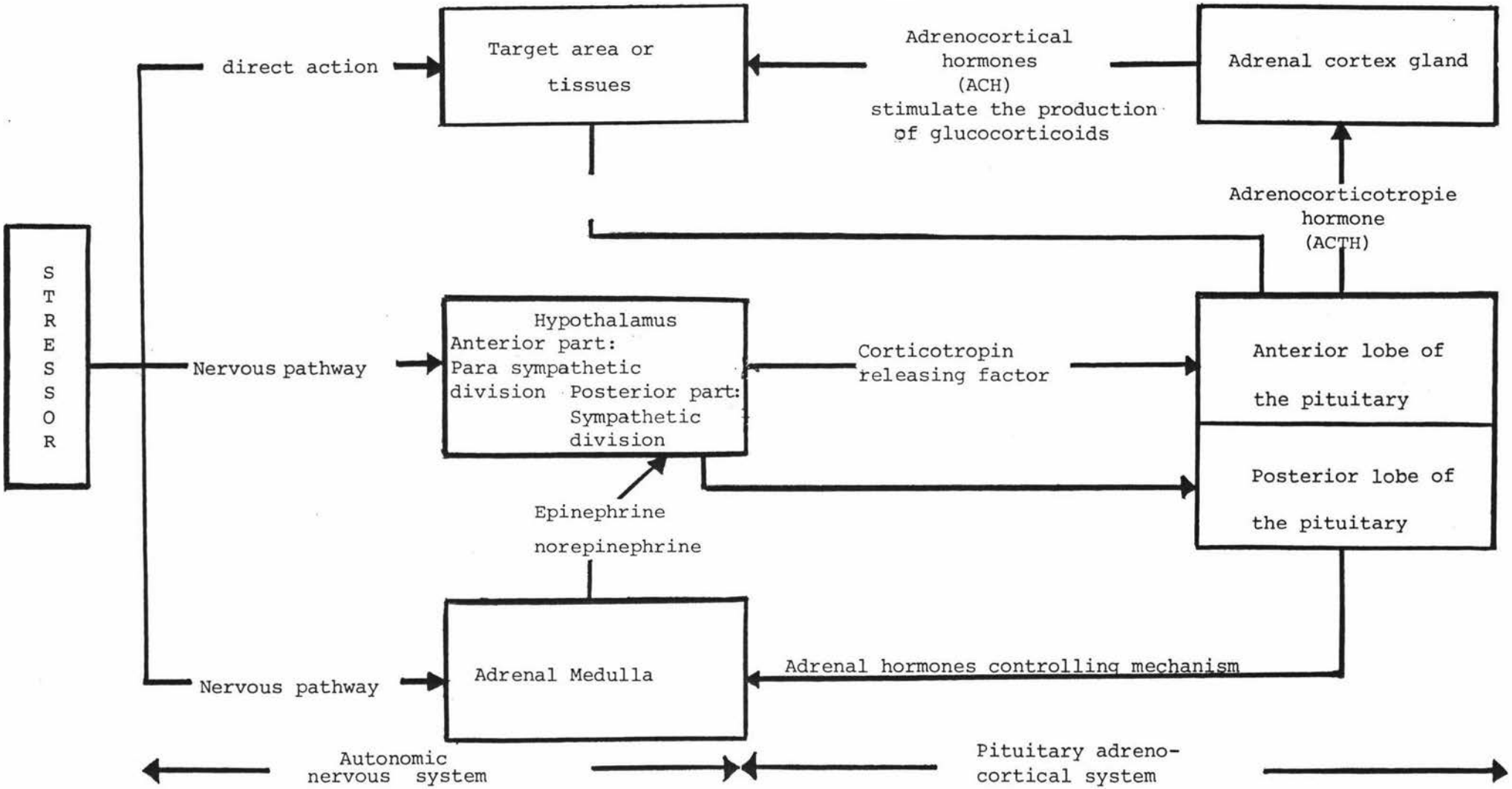


Figure 1.1 The Physiological Mechanism of Stress

When a stressor is applied to the body, there is nervous activation of both the hypothalamus and the adrenal medulla (Fig. 1.1). The adrenal medulla gland is stimulated to secrete epinephrin and norepinephrin into the blood stream. Epinephrin (adrenalin) tends to sustain many of the sympathetic reactions initiated directly by sympathetic nerves. Norepinephrin (noradrenalin) is the substance that plays a part in the chemical transmission of nerve impulses from the end of the sympathetic nerve to the smooth muscle of the viscera and blood vessels. Most of the norepinephrin circulating in the blood and found in the urine is probably produced at these sympathetic nerve endings rather than by the adrenal medulla. Epinephrin and norepinephrin are produced by the adrenal medulla under pituitary influence i.e. at the same time as the hypothalamus activates the autonomic nervous system, it stimulates the posterior pituitary. The posterior pituitary in return affects the production of these adrenal hormones by means of more epinephrin and norepinephrin.

The other system apart from the autonomic nervous system that is intimately involved in response to stress of the pituitary-adrenocortical system. When the posterior hypothalamus is activated in physical or psychological stress, in addition to producing a general sympathetic response, it releases hormones which stimulate the anterior part of the nearby pituitary gland to secrete adrenocorticotropic hormones(ACTH) into the blood stream. This hormone in turn causes the adrenal cortex to secrete adrenocortical hormones (ACH) which generally assist the organism in responding to stress. In other words, ACTH stimulates the production of glucocorticoids by the adrenal cortex making glucose available to provide fuel for

fight or flight (Munday, 1973). This stage was described as the stage of resistance (Selye, 1956) characterized by adrenocortical response.

When the sympathetic nervous system is stimulated, the physiological responses which occur can be summarized as follows (Murray and Zentner, 1975):

(1) Cardiovascular rate and output increase, making more blood available so that the pulse increases in rate and strength of beat; palpitation or arrhythmia may occur; and the blood pressure rises.

(2) Blood supply is shunted to the brain and skeletal muscle, rather than to the peripheral vessels, causing the skin to be pale, ashen or cool to touch.

(3) Respiratory rate and depth are increased to assure adequate oxygenation.

(4) Salt and water are retained by the kidneys to bolster blood volume, contributing to a fuller blood pressure and reduced urinary output.

(5) Metabolism is increased, providing immediate energy and producing more heat. The body temperature may rise, respiration increases and mild dehydration follows (dry lips and mouth are not uncommon). If metabolism remains high for sometime, insomnia and then fatique occur.

(6) Hyperglycaemia results from glucolysis in the liver to meet energy demand after initial hypoglycaemia.

(7) Muscle tonus is increased so that activities may be better coordinated. However, the person may be more rigid or have tremors. Tensing of muscles, especially of the trapezius muscle in the neck shoulder area causing headache, is not unusual.

(8) Pupils dilate so that maximum light can be used in viewing a situation. Vision is initially sharp.

(9) Sodium chloride in the extracellular fluid is reduced while potassium levels are increased.

(10) Less essential functions such as digestion and excretion are diminished and sphincters tighten. The person may be unable to void or void only small amounts while feeling a strong urge, feel anorexia, become constipated or distended with flatus.

There are times when parts of the parasympathetic division of the autonomic nervous system are stimulated during the stressful state because of the proximity of sympathetic and parasympathetic nerve fibres (Bryne and Thompson, 1972; Guyton, 1971; Selye and Heuser, 1956) causing strong arousal in one division overflow into the other, producing mixed parasympathetic and sympathetic effects. However, the common and usual pattern of responses was a sympathetic emphasis, except in some instance of emotional stress, e.g. fear, when the parasympathetic division is likely to dominate resulting in fainting in

the case of sudden fear (Martin, 1971). Thus, with intensification of stress, behaviour opposite to those of the sympathetic responses are likely to be observed:

(1) Cardiovascular output may be diminished, causing a slow, thready pulse and a drop in blood pressure.

(2) Blood supply does not remain shunted to vital organs, but returns to the periphery causing flushing, hot skin and a feeling of fainting.

(3) Respirations may become difficult because of constricted bronchi. If considerable carbondioxide has been exhaled earlier with deep respirations, hyperventilation with accompanying tremors, syncope and dizziness may occur.

(4) The elevated body metabolism uses much energy; body reserves of glycogen may be depleted and the person feels nauseated and hungry when hypoglycaemia occurs.

(5) Muscle tonus may relax, so that incoordination results. Increased blood flow through the muscles affects alertness and cognition and may cause syncope.

(6) Pupil dilation may become fixed, causing blurred vision; or constriction may occur, reducing acuity.

(7) Sphincters have diminished tone and gastrointestinal secretion

and propulsion increase, so that the person may have involuntary urination or defaecation or urinary frequency and diarrhoea.

The parasympathetic division functions to conserve rather than expend bodily resources. The drop in blood pressure tends to decrease the utilization of fuels throughout the body.

In the alarm stage when the autonomic nervous system is stimulated, the body adapts to stressors through a pituitary-adrenocortical mechanism. Within this mechanism, there is increased use of the body resources, endurance and strength, antibody production, hormonal secretion, blood sugar levels and blood volume result to sustain the body's fight for preservation. This stage is called the stage of resistance. Body response then gradually returns to normal.

If the effect of stress is beyond the person's ability to cope or to continue to adapt, physical or psychic disease results as the body can bo longer compensate for or correct homeostatic imbalances. This stage is called stage of exhaustion. The manifestations of this stage are similar to those of alarm stage except all reactions first intensify and then diminish in response and show no ability to return to an effective level of functioning. This stage eventually leads to death.

Frequent or prolonged general adaptation syndrome responses trigger diseases through adrenocortical hypertrophy, thymolymphatic atrophy, elevated blood sugar, ulceration of gastroinestinal tract, reduced tone and fibrosis of tissues and vasoconstriction. These maladies are termed diseases of adaptation (Selye, 1956).

1.3 Psychological Stress

There is no generally agreed upon definition of psychological stress, although the term is used frequently by psychologists and psychiatrists. Attempts to define the term have been made by various authors (e.g. Haggard, 1949; Hanfmann, 1050; Janis, 1951; Wallace, 1956; Arnold, 1960; Withney, 1962 and Lazarus, 1966). However, for most writers, the word is used as a construct which designates a broad class of events involving interaction between extreme environmental stimuli and the adjustive capabilities of the organism.

Somewhat parallel to Selye's work, Janis (1958) presented three major phases of psychological stress that typically occur when a person is exposed to a situation of objective danger: the threat phase, during which the person perceives signs of oncoming danger and/or receives communications of warning which are likely to arouse anticipatory fear. Secondly, the danger impact phase, during which the person perceives that physical danger is actually at hand and realizes that his chances of escaping intact depend partly upon the protective actions executed by himself or by other people who are in the position to help him. The third phase is called the post impact victimization phase. During this time the person perceives the loss he has sustained and, at the same time, undergoes some severe deprivations which continue for a varying length of time after the acute danger has subsided.

Janis avoided defining the term psychological stress, but suggested using the term "stress" mainly as an adjective to characterize either the disruptive stimuli (e.g. stress situation) or a change in

overt behaviour, affect or attitude that are evoked by the disruptive stimuli (e.g. "stress reactions") to avoid confusion that is bound to arise from employing a loosely defined concept.

Lazarus (1966) developed a distinctive model of stress in which cognitive processes are paramount, with threat and appraisal as central concepts. Threat implies a state in which the individual anticipates a confirmation with a harmful condition of some sort. Harm is the subjective evaluation of motive thwarting stimuli. Stimuli must have been previously connected with harm if an appraisal of threat is to occur. Threat has two main properties (1) it is anticipatory, involving expectation of future harm; and (2) it depends on cognitions.

Stimuli as cues of some future condition are evaluated by the cognitive process of appraisal. Appraisal relies on two classes of antecedent conditions: (1) factors in the stimulus configuration and (2) factors within the psychological structure of the individual. Much of Lazarus' work elaborates on these antecedent conditions and their influence on appraisal of threat.

Once a threat is appraised, processes whose function it is to reduce or eliminate the anticipated harm are set in motion. These are coping processes which are different from appraisal of threat. The coping process also depends on cognitive appraisal which Lazarus labels secondary appraisal to distinguish it from appriasal to determine threat. Secondary appraisal will determine the form of coping process.

Lazarus does not go into details about the kinds of responses produced by various coping mechanism, but he does offer a very general classification of coping reaction patterns and the general kind of appraisal involved. He is not interested in physiological arousal, but rather in the observable aspects of threat.

Lazarus (1966) in the same book enumerates six groups of stimuli which will produce stress reactions. These are uncertainty about one's survival, threat to one's sense of identity, lack of ability to control one's environment, unavoidable pain and deprivation, disruption of community life and the loss of loved ones.

Appley and Trumbull (1967) have conceptualized psychological stress in three ways; firstly on the stimulus side, the term has been used to describe situations characterized as new, intense, rapidly changing, sudden or unexpected, including (but not requiring) approach to the upper thresholds of tolerability. At the same time, stimulus deficit, absence of expected stimulation, highly persistent stimulation and fatigue producing and boredom producing settings, among others, have also been described as stressful, as have stimuli leading to cognitive misperception, stimuli susceptible to hallucination, and stimuli calling for conflicting responses. All these procedures have at some time been used for operationally defining and producing stress. Secondly, on the response side, the presence of emotional activity has been used to define the existence of stress. This usually refers to any body response in excess of "normal or usual" - a state of anxiety, tension and upset or for that matter any behaviours which deviate momentarily or over time from usual level or

normal value for the individual in question or for an appropriate reference group. Indices used included such overt emotional responses as tremors, stuttering, exaggerated speech characteristics and loss of sphincter control or such performance shifts as increased reaction time, erratic performance rates, malcoordination, error increase and fatigue. Thirdly, the existence of a stress state within the organism has been inferred from one or more partially correlated indices, such as a change in blood eosinophils, an increase in 17-keto steroids in the urine, an increase in ACTH content or gluco-corticoid concentration in the blood or changes in any number of physiological variables. It was found as early as 1915 that all emotional states produce the same physiological responses (Cannon, 1915).

Looking at both the physiological and psychological aspects of stress, it can be pointed out that the key feature distinguishing psychological stress is that in the former it is the condition of the tissues which directly determine noxious effects whereas with the latter, the reaction depends upon how the person interprets or appraises (consciously and unconsciously) the significance of a harmful, threatening or challenging event. In an applied science such as nursing, it may be useful to combine the two approaches.

Selye (1974) in his book "Stress without Distress" has extended his view of the stress concept inductively from his early physiologically oriented approach. He states, " ... the basic principles of defence on the cellular level are largely applicable also to people and even to the entire societies of man" (p. 17). Lazarus, even though his

involvement with stress had a different beginning appears to have come to a similar conclusion as he emphasized in his recent writing, "Stress refers, then, to a very broad class of problems differentiated from other problem areas because it deals with any demands which tax the system, whatever it is, a physiological system, a social system, or a psychological system, and the response of that system". (Lazarus, 1971, p. 54).

Thus, stress is a collective term involving different classes of responses. The meaning given to the term in this study is based on the definition given by Appley and Trumbull (1967) who regard it as "a state of the total organism under extenuating circumstances rather than an event in the environment (p. 11), i.e. stress is generally perceived as ageneralized response that develops within the individual rather than an upsetting event that acts upon the person. The stress state of an individual can be observed through different routes, i.e. affective states, motor-behavioural reactions, alteration in adaptation patterns both biochemical and autonomic (Lazarus, 1966).

The multidisciplinary perspective of stress and adaptation with interaction of psychological and adaptation with interaction of psychological and physiological factors can be seen in Figure 1.2.

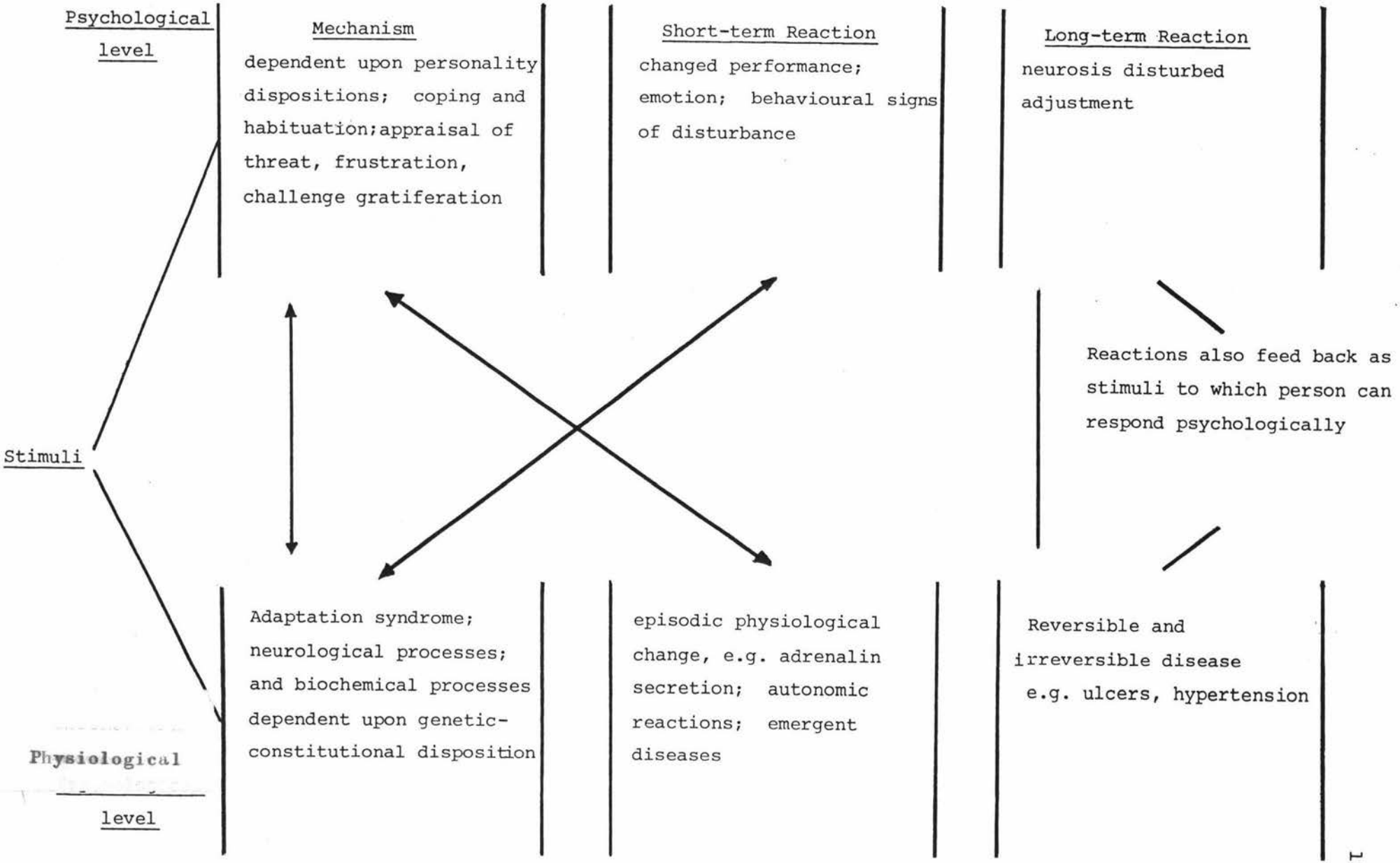


Figure 1.2 Interdisciplinary Interaction of Stress-adaptation Within Physio-psychological Perspectives (Lazarus, 1971)

1.4 Implications of Stress-adaptation Concepts in Nursing

Attempts to make the implications of stress and adaptation explicit have been shown in a number of nursing models, e.g. Roy's Adaptation Model (1974), Newman's Model (Riehl and Roy, 1974), also there were some nursing authors who have included stress and adaptation as basic to the framework of nursing in their text books, e.g. Beland, 1973; Bryne, 1972; Roy, 1976; Luckman and Sorensen 1979.

The influence of Selye, Lazarus and various others in the field of stress research is evident in Roy's Adaptation Model. To make the stress-adaptation framework explicit and applicable to nursing, she identified two major types of adaptive mechanisms, the regulator and cognator, described as follows:

"The regulator mechanism works mainly through the autonomic nervous system to set up a reflex reaction, which readies the person for coping with the stimulus by approach, attack or flight. The cognator, identifies, stores and relates stimuli, so that symbolic responses can be made. It acts consciously by means of thought or decision, and unconsciously through the defence mechanisms. Pronounced autonomic activity with cognator ineffectiveness signals an adaptation failure. Pronounced regulator activity can be observed by an increase in heart rate or blood pressure, tension, excitement or loss of appetite. Cognator ineffectiveness is seen behaviourally in the following (1) lack of awareness of the need state; (2) inability to identify the goal subject; (3) inability to select means to an identified end; and (4) failure to reach goal object" (Roy, 1976, p. 44).

Physiological aspects of stress, i.e. autonomic and biochemical reactions (or regulator mechanism in Roy's terminology) enable nurses to understand and assess the degree of stress response through body mechanisms. By understanding the psychological mechanism of stress (cognator mechanism), nurses will be able to understand and assist with individual psychological needs. These two mechanisms of stress responses are interrelated. Luckman and Sorensen (1979) summarize the interaction of these two forms of stress and their significance to nursing by stating that "it is imperative that the nurse realize that every ill person is experiencing both physiological and psychological imbalance. Physiological imbalance creates an emotional disequilibrium and emotional imbalance causes physiological disturbance"(Luckman and Sorensen, 1979, p. 12).

1.5 Stress under Hospitalization

Kornfield (1972) stated that hospitals are frightening places for most people. He also pointed out that many unfamiliar and anxiety provoking procedures are inflicted upon patients, although they are common to the staff involved. This view is shared by other authors (Rosengren and Letton, 1969; Conjalton and Najman, 1971; Moos, 1977). Stress and anxiety resulting from being institutionalized for medical treatment or other resources to restore the individual's normal state of balance are referred to as stress of treatment.

Hospitalization means confinement of a person to an institution with separation from immediate family for a protracted period of time for the purpose of diagnosis, care and/or cure (Wu, 1973). Physical and social environment both change dramatically when a person experiences

illness and moves from his home to the hospital. From the familiar secure surroundings of home, he is thrust into a strange and unfamiliar world where strangers begin to rule his life. Individual past experience and economic ., educational and sociocultural backgrounds play a major part in determining adjustment to a different environment. The different physical setting of the hospital can create confusion and frustration and place a great demand on the patient for adjustment. There may be other disturbing factors such as the sight of people in pain, dying patients, sounds of machines and equipment, as well as a variety of unusual and maybe unpleasant odours.

In addition to the hospital environment as an exogenous source of anxiety, Saylor (1975) makes an interesting comment that the patient may have his anxiety aggravated by his visual perception and the altered angle of vision, e.g. normally a person's visual field is perceived from a vertical position, but in a patient role, often he is placed in a horizontal position e.g. on the journey to the operating room.

In the study by Basowitz, Perskey, Korchin and Grinker (1954) comparing stress experienced by hospital patients, subjects from the general population and trainee parachutists, it was found that the hospital patients showed greater evidence of stress than either the general population or trainees. The measurement tools used included both physiological and psychological batteries. This result suggests that admission to hospital may give rise to greater stress than such overtly stressful situations as a first parachute jump, although a confounding factor may be that of choice as the parachutist has chosen to train in this field.

Concerning the social characteristics of the hospital, Wu (1973) states that the social structure of the hospital is usually described as authoritarian and bureaucratic. Congalton and Najman (1971), after conducting a study of the process of becoming a patient and tensions in the hospital ward, stated that as a sick person, one must learn to accept an obligation to cooperate with the medical staff and to submit to regulations. Other role expectations that must be accepted are that the medical staff have privilege with respect to the examination of his body, and that confidential information is made accessible to the medical staff. These kinds of expectations are "explained" to patients directly or indirectly, usually by the nursing staff. These roles are demanding and force the patient to act according to the staff's expectations. Thus, the term "good patient" is defined largely in terms of conformity to the expectations of the medical staff. It is the patient who has to adjust to fit these expected roles, hospital routines and regulations.

Wu (1973) suggests that if the patient's knowledge of hospitals is congruent with reality, his behaviour will appear to be consistent and predictable. Conversely, if the hospital is incongruent with the patient's expectations, it will elicit behaviours that are inconsistent and unpredictable. Thus, a patient's past experience or information he has before entering the hospital in regard to what will happen to him during the first few hours of hospitalization, is likely to effect his perception throughout the whole period of hospitalization, and to some extent, after discharge as well. Although the effect of hospitalization on each individual varies depending upon many factors, e.g. age, and illness, there are certain common phrases: preparation

and admission, the period of treatment, and discharge. Thus if stressors affecting a person when he goes through this triphasic process are identified, then assistance in maintaining physiological and psychological steady states can be offered to the person effectively and appropriately.

Volicer (1973) developed what she called a "hospital stress score" which could be used as a quantitative measure of stress related to hospitalization. The scale consists of 45 events gathered from interviewing different groups of people i.e. patients, laymen, nurses and physicians in regard to their own experiences with stress related to hospitalization. The method used to obtain ratings in terms of relative stress for each event was a procedure developed in the field of psychophysics. The method assumes that individuals are able to assign magnitude to the perceived intensity of physical events. This procedure was used by Holmes and Rahe (1967) in the development of a measurement tool for scaling or scoring the amount of life stress experienced by an individual. Volicer used the item "Emergency admission" as the mean value of 50, hence, other items perceived by the subjects would be scored as equal, higher or lower than 50 depending upon whether they were perceived more or less stressful than emergency admission. The results revealed that all items were rated between 30 to 96 even though some of the events were not really unpleasant. This may indicate that being hospitalized is generally stressful for most people and it needs some degree of adjustment which varies from one individual to the other. The point is that often a patient must cope with this adjustment alone. There is little guarantee that a patient will encounter a health professional who is both able and

willing to support him at that time. Patients must adjust to this stressful situation just when their anxiety is high and their physical energy taxed. The only reference to attempts to help patients to cope with hospitalization found in the nursing literature was the study conducted by Langlois and Teramoto (1971) using a group therapy session as a tool. It was claimed to be helpful for the patients in dealing with the crisis of hospitalization.

1.6 Being a Surgical Patient

Surgery may be undertaken as a specific form of treatment with the purpose of relieving pain or suffering resulting from the illness a person is experiencing, or for diagnosing and investigating of the nature of such illness. Even when the expected prognosis is positive, that is, the cause of signs and symptoms will be removed and the patient will recover gradually, the process of arriving at that goal may be characterized by fear, and influenced by various myths. Associated with surgery are fears of anaesthesia, loss of organs, body and tissue injury and fear of the unknown. No operation is minor as far as the patient and his family are concerned. An operation is always a major experience in the life of the patient and his family (Shaffer, Sawyer, McCluskey, Beck and Phipps, 1971; Johnson, 1967).

A surgical procedure is a fearful prospect for most people (Levitt, 1968). Indeed it is one of the most recognized circumstances that evoke anxiety. As Janis (1958) pointed out,

"From a psychological stand point a major surgical operation

constitutes a stress situation which resembles many other types of catastrophies and disasters in that the "victim" faces a combination of three major forms of imminent danger - the possibility of suffering acute pain, of undergoing serious body damage, and of dying" (p. 10).

Rothenberg (1966) estimates that surgery is performed on twelve million people in the United States each year. This enormous incidence could be a significant source of anxiety in the community and a major contribution to the stress of every day living. Janis (1958) conducted an intense investigation of the psychological effect of surgery. His findings based on self reports by the patients, indicated that more than 75% expressed a moderate to high degree of preoperative anxiety. The percentage of patients expressing fear increased as the hour of surgery approached reaching the highest peak of preoperative anxiety, differences in reactions to major or minor surgery were found to be small except in the postoperative anxiety, where the level dropped off more sharply in the minor cases, i.e. treatment of dental cavity.

For some patients, the fear of being "put under" is greater than the fear of surgical procedures. In many cases, this fear is submerged to a lower level of consciousness and contributes to the general anxiety of the patient. It is possible that the fear of loss of consciousness is closely aligned with the fear of death, and the two fears become confused and intertwined. Fear of anaesthesia among surgical patients was reported in a study conducted by Ramsay (1972). Three hundred and eighty two patients (183 male, 199 female) were interviewed 24 hours before surgery. According to a clinical assessment of anxiety, 73% of the patients had preoperative fear and 62% of these indicated that anaesthesia was their primary fear.

Marcinex (1977) summarized the physiological response of the body following surgery, and concluded that fears and anxiety are also stressors and can intensify or prolong the stress responses. She further suggests that nurses can help patients to reduce their stress by providing preoperative teaching.

Thus, getting into the "patient" role is not an easy task and requires some assistance (Christman, 1967). It requires a great deal of adaptation. Moos (1977) proposed some major adaptive tasks which a patient is likely to go through while being in a sick role and institutionalized. First, there were illness related tasks; (1) dealing with pain and incapacitation; (2) dealing with hospital environment and special treatment procedures; and (3) developing adequate relationships with the professional staff. Secondly, there were general tasks related to the patient himself; (4) preserving a reasonable emotional balance; (5) preserving satisfactory self image; (6) preserving relationship with family and friends; and (7) preparing for uncertain future. These tasks can be stated as secondary stressors in nature to the stress impact resulting from illness and surgery.

Being ill (disease and illness), and associated with surgery and hospitalization is a complex experience that has various effects on the whole person, not only on the system involved, even though these effects vary from person to person. The person is required to adapt systematically. Success with adaptive tasks both physiological and psychological leads to an uneventful recovery and stable state of psychological well being.

Hadley (1969) regarded illness as primary stress and entrance to health care system constitutes secondary stressors. The concept of secondary stressors are conceived as a change in (1) bodily structure and functions, (2) psychosocial environment, and/or (3) physical environment. Hadley's conceptualization was in line with what the present author has outlined so far. Deriving from this framework, the general function of the nursing profession is to manipulate man and his environments (external and internal) to maintain or restore behavioural stability with respect to health.

The following diagram shows the stressful impact which illness, surgery and hospitalization can have on the patient and his family. At the same time, the kinds of tasks associated with recovery and maintaining a state of well being are illustrated. Much of the nursing literature concerned with acute care settings, states that nurses are doing well in terms of physical care, but the psychological aspect of care is insufficient. This leaves the question as to what nurses, as helping professionals, can offer these patients in an extremely stressful situation, and how effective help can be implemented.

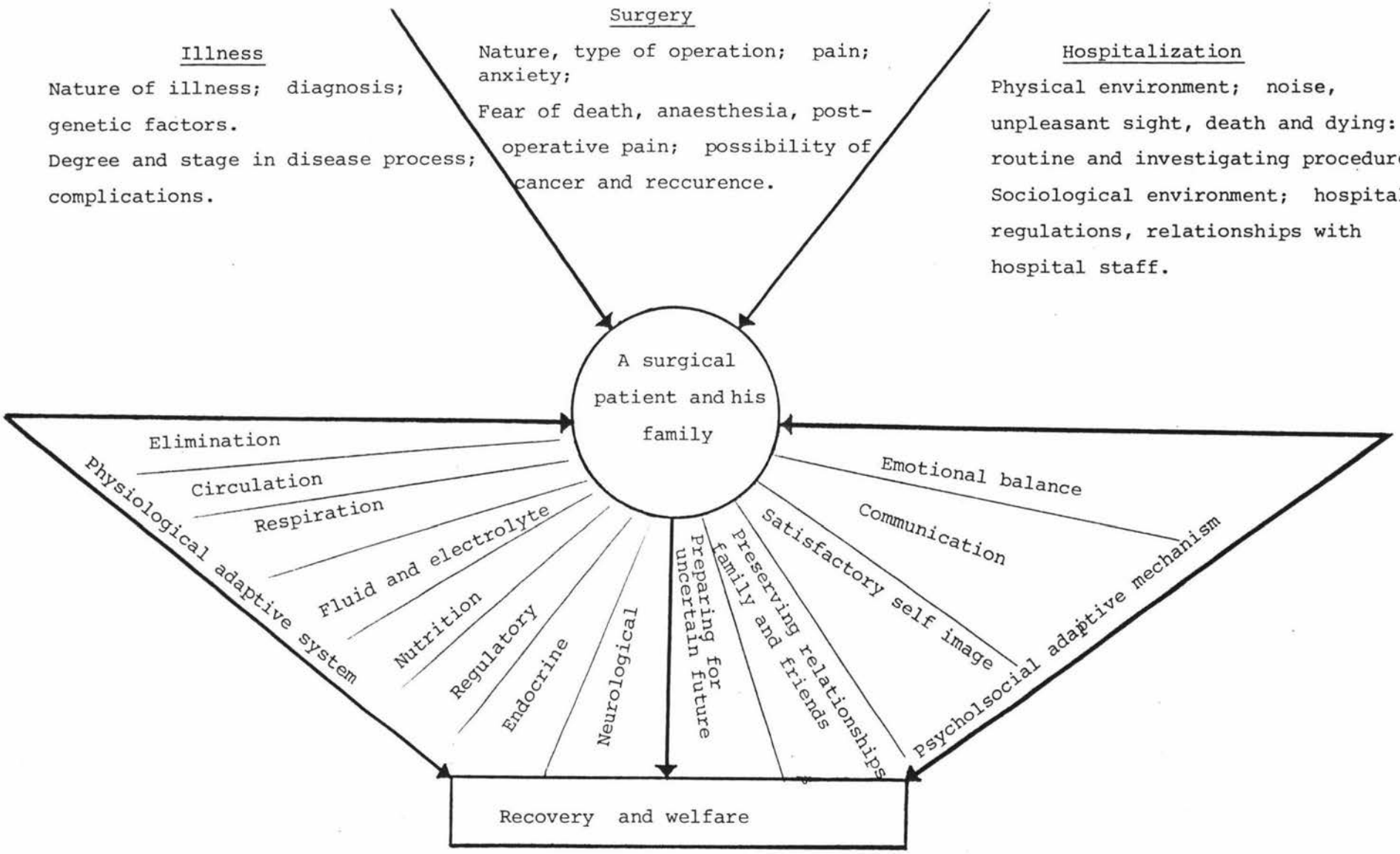


Figure 1.3 Stress of illness, surgery and hospitalization in relation to adaptive tasks required in a surgical patient (adapted from Moos, 1977, Roy, 1976).

CHAPTER 2

CONCEPT OF ANXIETY AND ITS MEASUREMENT

Since one of the forms of stress with which this present study is concerned is anxiety, this chapter examines major theories associated with the concept of anxiety. The measurement of anxiety in general will be investigated as well as measurement in the particular setting with which this study was concerned, i.e. anxiety associated with hospitalization and surgery.

2.1 Concept of Anxiety: Freudian and Neo-Freudians

Theories of the origin of anxiety have come from two sources: the psychoanalysts and the learning theorists. Freud (1923) believed that anxiety arises originally in the infant as a result of a sudden diffuse stimulation occuring at birth in which he called "primary anxiety". It is a consequence of the change from intra-uterine to extra-uterine conditions. Primary anxiety is seen as setting the pattern for all subsequent anxiety reactions, as it represents an external threat to survival.

The other type of anxiety, neurotic anxiety is characterized by feelings of apprehension and physiological arousal. It differs from primary anxiety in that the source of danger is internal rather than external. Freud claimed that everyone experiences neurotic anxiety to some extent, and it is when this becomes excessive that a condition of neurotic anxiety exists. The other type of anxiety according to Freud, is reality anxiety. It has a clearly identifiable, warranted source in the external world and is proportionate to the threat posed

by the fear subject of situation. This type of anxiety is sensible and adaptive.

Neo-Freudianism was a movement that sprung up during 1930's and 1940's (see Thompson, 1950). The neo-Freudians accept much of Freud's theory. Their deviations from Freudian psychoanalysis may be viewed as only a matter of different emphasis. The neo-Freudians regard human personality development as largely a product of social influence in which biological drives play a relatively minor role. They do not credit the Freudian concept of primary anxiety, i.e. anxiety can not arise before the ego has reached a minimum stage of development. In other words, it can not arise before the organism has some awareness of its environment. What the neo-Freudians viewed as primary anxiety is due to the possibility of loss of protection and security, the frustration of dependency needs, and probably comes before the end of the first year of life. Dependency needs arise as a consequence of the child realizing his helplessness and his need for support by those who are more powerful i.e. parents.

Secondary anxiety is a new concept contributed by the neo-Freudians. It is regarded as anxiety arising as a consequence of the very defences employed against primary anxiety. Most human anxiety is secondary. The individual personality comprises defence mechanisms and traits that were developed to defend against primary anxiety. Once developed, they tend to become stable and somewhat rigid. The individual must adjust to new demands made by the environment, to new threats, without disturbing this basic defensive system. A severe threat to the defensive system is likely to evoke a secondary anxiety reaction which

in turn may require harsh intensification of existing defences, or the employment of a new defence.

Levitt (1968) summarized neo-Freudianism by stating that "... it changed the orientation of psychoanalysis from the biological and instinctual to the cultural and environmental".[1] In brief, the neo-Freudians suggest that most of the adult anxiety is secondary, i.e. a consequence of threats against the defences, the adaptive behaviour which keep primary anxiety from coming to consciousness.

Anxiety as an Energizing Drive: The Iowa Theory

Spence (1960) conceives of anxiety as an acquired drive which has the capacity to generally energize the organism. Anxiety ought thereby to facilitate performance and increase the speed of learning. Spence's theory is straightforward when applied to one learning situation in which only one response is possible and occurs invariably as is the case with the conditioning reflex response. The individual either responds to the conditioned stimulus with a reflex act, or he does not respond; there is no choice of responses. The one-response learning situation does not occur frequently in human life. In most learning circumstances, a variety of possible responses is available to the individual. Spence regarded each of these response tendencies or "Habits" as having certain strength or possibility of occurrence depending upon the individual's past experience. These experiences could, theoretically be arranged in a hierachy of habit strength.

[1] E.E. Levitt, The Psychology of Anxiety. London: Staples Press, 1968, p. 44.

Spence's theory holds that anxiety will energize or strengthen each of the habits in the hierarchy in proportion to the initial strength of the habit. A simple mathematical formula describes the effect of anxiety on any one response tendency: R(esponse) = D(rive) x H(abit) strength). However, Spence has never been able to proceed to the point of formulating an equation to predict the effect of anxiety in a learning situation involving more than one habit. The reason is that it is difficult to establish habit hierarchies for learning tasks. In summary, Spence's theory emphasized anxiety as being primarily brought about by the state of the individual with situational factors playing a secondary part.

Anxiety as a Response to Situational Stress: The Yale Theory

In the Iowa theory anxiety is evidently used in a constant characteristic or trait of the individual as primary to functional responses to external stimuli. Emphasis on the stimulus side has been examined by psychologists at Yale led by Mandler and Sarason (1952).

The essence of the Yale approach was summarized by Levitt (1968) as follows:[1]

1. Anxiety is a strong learned drive which is situationally evoked. A particular circumstance or class of circumstances may be stressful for a person though he is not made anxious by other situations. Individuals may act differently to the same circumstances.

[1] E.E. Levitt, The Psychology of Anxiety. London: Staples Press, 1968, pp. 142-143.

2. The individual has learned or developed characteristic responses to anxiety which he brings with him to the current situation. These reactions may be task irrelevant, that is, tending to disrupt performance. Examples are feelings of inadequacy, fear of failure, desire to quit the situation. Or they may be task-relevant-facilitative of performance, because they move the person to reduce anxiety by completing the task successfully.

3. The effect of anxiety is also a function of such aspects of the situation as the attitude of the experimenter or teacher and the meaning of the task as perceived by the individual. These factors are of greater significance than the complexity or difficulty of the task per se.

4. There may be a general trait of anxiety but behavioural science is not yet prepared to investigate it. It is first necessary to thoroughly study important situational anxiety.

The situational anxiety approach is much in line with Lazarus (1966) who stresses that an individual's cognitive appraisal (summing up) of a situation must be closely scrutinized if we are to understand the true nature of stressful agents.

2.2. Basic Assumptions Underlying the Concept of Anxiety in the Present Study

Some major theories of anxiety have been reviewed briefly in the previous section. For the purpose of this study, anxiety is regarded as a functional response to external stimuli as expressed in Mandler

and Sarason's proposition. The associated assumptions derived from previously reviewed literature are:

Assumption 1. Anxiety is a reaction to a stimulus which is recognized subjectively by the subject as anxiety, and which produces a pattern of behaviour, both physiological and psychological that is observable by the subject or other people.

Assumption 2. Anxiety is a strong learned drive which is situationally evoked. Anxiety ought thereby facilitate learning, providing that the degree of anxiety is not excessive.

Assumption 3. Stress and anxiety are homomorphism (Aiken, 1961); thus in this study, it is recognized that a "stress" or "stressful" situation is one containing stimuli or circumstances calculated to arouse anxiety in the individual. Mechanisms of response to stressful events are similar to those of responses to anxiety provoking situations, e.g. autonomic nervous system and pituitary adrenocortical system responses.

Assumption 4. The stressed subject in this study i.e. the patient, experiences both physiological disturbance (illness) and emotional disturbance (anxiety). These disturbances are intercorrelated with one another. High degree of anxiety affects physiological adaptive mechanisms.

Assumption 5. Anxiety associated with illness and hospitalization is due to both the external environment and the subject cognition of such environment. Thus, the function of the professional is to monitor the environment within the limits that are favourable for individuals of adequate adaptation. At the same time, it is essential to assist the cognitive appraisal processes, i.e. accurate perception of the environment or situation.

2.3 Trait and State Anxiety

The distinction between acute or situational anxiety and anxiety proneness or predisposition has been delineated by Cattell and Schier (1961), Lazarus (1966) and Spielberger (1966). Trait or anxiety proneness is a relatively unfluctuating condition of the individual which exerts a constant influence on his behaviour. Such a condition is regarded as a personality trait (Levitt, 1968). Situational anxiety is a transitional state which is ephemeral, occurs in response to a stimulus, and is characterized by a variety of associated physiological reaction.

The trait-state distinction is perhaps the most useful way of looking at anxiety. "State" anxiety studies identified variables concerned with physiological functioning of the individual (Cattell and Scheir, 1966) accompanied by adreno-sympathetic arousal (Spielberger, 1966). It is this type of anxiety with which the present study is concerned; anxiety that is situationally derived associated with the feelings of fear and tension; and anxiety associated with illness, surgery and hospitalization.

2.4 The Measurement of Anxiety

There are two major classes of measures that are most frequently used by the experimenters in anxiety research; by physiological manifestations of anxiety, i.e. autonomic nervous system action, and the other, psychological tests. In this present study, anxiety of the individual can be assessed through physiological and psychological modes (assumption 1). Thus, literature related to both aspects of anxiety measurement were examined:

Physiological Measure

According to the stress framework, anxiety manifests various measurable physiological responses. Critical surveys of available physiological methods are found in Krause (1961); Appley and Trumbull (1967) and Venables and Martin (1967). Commonly studied physiological responses are heart rate, pulse volume, blood pressure, peripheral resistance, core temperature, respiration rate, 17-hydroxy corticosteroids (17-OHCS) in plasma and urine, circulating eosinophils, urinary adrenalin, phosphate, potassium and sodium level. All of these responses are associates with autonomic, pituitary-adrenocortical system responses. They can and have been measured. The four most frequently used are blood pressure level, heart rate, respiration rate and electrical skin resistance (Galvanic skin reflex: GSR). Although the validity of physiological measures is accepted by most authors (e.g. Martin, 1971; Levi, 1972; Cattell and Schier, 1966; Pichot, 1971), Levitt (1968) argue that there are really no acceptable scientific data supporting their use. He bases his argument on the premise that patterns of physiological reactivity to anxiety are idiosyncratic, a

circumstance which renders them unsuitable for use at the current stage of research on anxiety as a construct.

However, in the view of the present author, the evidence supporting the use of physiological measures outweighs the above argument. Advanced technology has enabled psychophysiologists to conduct many sophisticated and complicated experiments involving different stress indicators extensively and at a deeper level (see Spielberger and Sarason, 1973).

Mason (1968) demonstrated that at the time of stress, all endocrine organs are affected, resulting in considerable metabolic changes, Selye (1956) proposed that psychological state, such as anxiety acted as stressors reflecting the general arousal of the body. Fiorica and Muehl (1962) have demonstrated a positive relationship between anxiety and plasma adrenocorticosteroid levels. Franksson and Gemzell (1955) found an increase in the plasma concentration of these hormones during the preoperative period and suggested that this was due to the "psychic tension". A later study by Bursten and Russ (1965) confirmed these findings and, in addition, found a positive correlation between the length of time the patients had to wait for surgery and the magnitude of the rise in steroid secretion. Sternbach (1966) comments that people who are suffering from stress disorganization showed physiological response - stereotypy to a greater extent than for normal subjects.

Physiological measures in general are to measure the somatic component of anxiety. There are two levels of physiological measures;

one at the control level, e.g. heart rate, blood pressure level, which attempts to investigate direct responses in the autonomic nervous system, and the other at the peripheral level e.g. peripheral resistance and palmer sweat gland activity which was found to be affected and influenced by ACTH at the time of stress.

Psychological Measures

The other aspect of measurement concerns psychological manifestations of anxiety. Instruments used are different types of behaviour rating scales, the behavioural inventories and the other indirect method in which anxiety is measured by means of changes in performance which it produces (Pichot, 1971). The most popular device for measurement in the experimental situation is the inventory, sometimes called a "scale" or "questionnaire". The inventory can be administered and scored quickly and easily and is suitable for group administration. Levitt (1968) claimed that its reliability is greater than that of physiological indicators in that it is less affected by extraneous or trivial factors in the experimental situation.

Some of the well recognized inventories are Taylor's Manifest Anxiety Scale which was developed by Taylor (1951, 1953), the Minnesota Multiphasic Personality Scale (MMPI), Freeman Manifest Anxiety Test (Freeman, 1953) and the IPAT Anxiety Scale developed by the Institute for Personality and Ability Testing. These measures derive from a more general attempt to measure human personality trait using an inventory approach or general drive which may not be appropriate measures of clinical anxiety. The MMPI which is the most widely used inventory has its original purpose to identify psychopathological

tendencies. Its items require the respondent's general responses (trait), not an estimate of his emotional state at the moment of responding.

Of all the anxiety inventories, the S-R (stimulus-response) Inventory by Endler, Hunt and Rosenstein (1962) appeared to be the most useful guideline for anxiety measurement in the present study. The core of this inventory comprises brief description of eleven situations that are likely to produce some anxiety in most people. Fourteen response tendencies, of which seven are physiological, are listed. The subject responds by indication on a five point scale the intensity with which he experiences each of the response tendencies in each of the eleven basic situations. The S-R Inventory thus provides an index of a number of situations in which anxiety is experienced, the number of anxious responses to each situation, and the intensity of each response.

The only weakness of the S-R Inventory was that it requires a total of 154 responses, the largest number of any general anxiety measures, and is therefore more time consuming. However, a short form of the S-R Inventory has been suggested by Perkins (1966, cited by Levitt, 1968) and was claimed to produce satisfactory results without loss of measurement efficiency.

Pichot (1971) suggests that a better instrument of anxiety measurement would arise from a factor analytic study of the dimension underlying anxiety. From his point of view, the S-R Inventory may serve as an intensive analysis of anxiety provoking situations

associated with a particular event of life e.g. hospitalization and surgery. In terms of its methodology, Levitt (1968) regarded the S-R Inventory as an advance over earlier anxiety inventories.

Another method of anxiety measurement suggested by Levitt (1968) and which seems to be used widely in the clinical evaluation is that of projective techniques. Briefly, these are devices in which unstructured or partly unstructured stimuli are presented to the patient. He must add structures in order to respond, thereby revealing aspects of his personality. An advantage of the projective test is that the subject rarely has an idea of the interpretation of his responses. However, the serious disadvantages are that the significance of many responses to stimuli are idiosyncratic, and at the same time difficulties in interpretation of responses, quantification of data and administration are great.

One of the measurements used by Janis (1958) whose categories of anxiety depended upon the degree of responses, was by means of subject's self resport. Janis's approach, in this classical study seems to have been a case study approach, using a few subjects. He used analysis of psychoanalytically conducted interviews for his three fold classification of anxiety level and asked the questions about the fear experienced without describing the behaviour (by definite physiological and psychological signs) which he was willing to accept as representing anxiety[1]. The weakness of this study is the absence of any specific cues to support

[1] Except for the preoperative behaviour of the high anticipatory fear group, behaviours recorded were trembling, flushing, agitation, weeping, restlessness, inability to sleep, jitteriness and nervousness.

the judgement about anxiety. It represents only the overall "sum up" feeling of each subject being studied. A later study by Graham and Conley (1971) supported Janis's approach by stating that "the most useful and frequently occurring indicators of preoperative anxiety or fear were the subjective responses of the patient during both the preoperative period and postoperative visit". Hackett and Cassem (1970) also suggested using the subject's complaint of being anxious, together with behavioural manifestations, as criteria for assessment of anxiety.

2.5 Measurement of Anxiety in the Hospital Setting:

From the discussion of physiological responses to stress in Chapter 1 and a brief review of measurement in the previous section, it may be seen that while there are many physiological indicators of anxiety that can be measured, not all are suitable for use in a clinical setting, i.e. the hospital. Munday (1973) suggested that those indicators which depend on estimation of substances in blood, must have their values distorted by the stress to the subject of a venepuncture and those which are based on estimates of substances in urine may cause stress to certain people who feel that involvement of others in excretory activity is embarrassing. Other complicated procedures have to be rejected in the ward setting, because of difficulties in the measurement itself, or the apparatus involved might cause anxiety in the subject, or because they were thought to be technically or ethically unacceptable by nurses or patients.

One of the most intensive investigations of patient responses to stress was done by Cromwell, Butterfield, Brayfield and Curry (1977) on myocardial infarction patients in the intensive coronary care unit.

The physiologival indicators used were plasma 17-hydroxy corticosteroids, plasma nonesterized (free) fatty acids, heart rate, blood volume, pulse amplitude and blood pressure. It was found that acute myocardial infarction patients respond differently to stress than other patients, i.e. the myocardial infarction patients appear to have a delayed response to the stressful situation. The author claimed that such indicators will help to conceptualize how the patient responds to stress which will be beneficial for nursing intervention in assisting with recovery. However, some indicators used may be suitable for the intensive care environment where more complicated procedures are accepted as part of the routine care, but not in an ordinary ward setting.

In the study of nursing effectiveness, Foster (1974) used a single physiological indicator, i.e. Sodium-potassium ratio in the urine. She claimed that the Na-K ratio appeared to be a sensitive indicator of stress. The procedure involved may be awkward and might not be easily applied to a large group of subjects and could cause frustration for both patient and nurse investigators. It required collection of urine for each 12 hour period in the pre-stress state, the stress state and the post stress state.

With the agreement that anxiety indicators obtained from such measurement might be derived from stimulation and the patient's perception of the procedures, or from the subjects themselves, use of more common and familiar procedures such as blood pressure level, heart rate and respiration rate should be investigated for reliability and validity. Many of the nursing studies have used these simple physio-

logical procedures and found them to provide evidence of anxiety (e.g. Munday, 1973; Graham and Conley, 1971; Wolfer and Visintainer, 1975; Elm, 1964). Most studies used two or more such measures rather than a single physiological indicator. For example, Elm employed blood pressure, respiration rate, pulse rate and temperature along with behavioural manifestation of anxiety obtained from direct observation.

One physiological approach to measurement of preoperative anxiety was made by Williams, Jones and Williams (1969). Their instrument is called the Skin Conductance Anxiety Text (SCAT) which they feel has unique value in providing a reliable, valid and quantitative index of patient anxiety. The technique involves the administration of a 2 cc/minute infusion of a general anaesthetic (2.5 thiopental sodium) to reduce and stabilize the Galvanic Skin Response (GSR). The quantity of the drug needed to accomplish this give the measurement of anxiety, i.e., the more drug used to eliminate the spontaneous GSR, the higher the level of patient anxiety. However, there are many factors involved with such measures. It would seem feasible and reasonable during the preoperative period, especially at the time before surgical procedures begin as part of the anaesthetic procedures. It is not an appropriate measure in terms of comparison between anxiety over different periods of time, and also may easily be frightening for the patients.

Munday (1973) uses one interesting physiological indicator of anxiety experienced by patients in relation to selected common nursing procedures that can be stressful to the patients, for instance, using a commode or bed pan. The Palmer Sweat Index (PSI) was first introduced to this field by Harrison and McKinnon (1962) based on the physiological

control of mental sweating (emotional or sensory). There are two types of sweat producing glands, eccrine and apocrine. The study was concerned with only eccrine for which there are two quite different types of sweating evoked by a different stimulus. Thermal sweating has a central initiation in the temperature regulating centre of the hypothalamus whereas mental sweating is evident only in palms, soles and axillae and is stimulated from the premotor cortex via the thalamus and hypothalamus. In her study, the PSI was chosen with another indicator (the radial pulse rate) with the belief that it offered a simply obtained measure of mental arousal. The counting of active sweat glands from the enlarged prints give a reliable score for each subject. The physiological processes involved are such that at the acute level of anxiety, the number of active sweat glands to be counted is lower than when the patient is at rest. In other words, there is an inverse relationship between the sweat gland count and the level of anxiety. The count decreases with increased anxiety and rises again to a normal level as the acute anxiety state passes. Relating this to the nursing activity under consideration it would be expected that if the activity reduced the level of patient anxiety there would be an increase in the PSI over the period of activity and vice versa. If the activity simply maintained the existing level of anxiety then it would be expected that the PSI would be the same at the end of the activity as at the start. Munday claimed that the use of the PSI as a method of measuring adrenalin activity was shown to be feasible in the ward situation. However, processing results from the PSI takes time, whereas the clinical situation requires a quick, effective and appropriate form of assessment for a prompt reaction. Also there may be difficulties in looking at the overall anxiety a patient is

experiencing under hospitalization since measurement would need to be taken for each nursing procedure or under each particular circumstance. Moreover, since a hormonal mechanism is acting as a controlling factor as well as a nervous mechanism (sympathetic and cholinergic), various factors can interfere with the activity of the sweat glands. Another study which used the PSI as a possible indication of emotional change was than of Johnson and Dabbs (1967). However, as stated earlier, physiological indicators are generally used in conjunction with other measures e.g. patient's self report and non verbal expressive behaviours.

One interesting physiological approach was the study conducted by Brockway, Plummer and Lowe (1976) using the apparatus called a Psychological Stress Evaluator (PSE). The device processes tape recordings of human speech by filters which permit the lower frequencies of the voice activity to be displayed on the chart. Microtremors of the muscles of the voice mechanism, which produce modulation of the voice frequencies inaudible to the human ear, are thus displayed for visible inspection. This modulation is reduced by autonomic nervous system under condition of stress. The device was claimed by Smith (1974) as an effective measure for both trait and state anxiety. However, as this vocal stress can be controlled by the subject himself and also the procedure was rather complicated and might not be accepted in the ward situation e.g. the subject needs to be interviewed in a special room where his voice would be taped, transcribed by the PSE and analysed for stress. The PSE together with the Galvanic Skin Resistance (GSR) are used as the lie detector which might not be ethically accepted in the hospital situation.

Minckley (1974) developed a tool called a perspiration meter using the principles derived from palmar sweating. The reliability was questioned as well as the acceptability and practicality of the sophisticated machine within the ward setting and its effect on the patient's perception.

With respect to psychological measures of anxiety, the use of existing psychological batteries was evident as much as were attempts by the researchers to set up their own criteria or to develop behaviour rating scales. Some recent investigators have found that measures of state or situationally derived anxiety were better predictors of emotional responses to stress situations than were chronic or trait anxiety (Hodges and Spielberger, 1966; Hodges, 1968). Examples of some existing psychological tests used in the hospital setting so far are the Subjective Stress Scale (SSS) developed by Kerle and Bialek (1958), the Affect Adjective Checklist (AACL) developed by Zuckerman (1960) and Freeman Manifest Anxiety test (Freeman, 1953). Both of the AACL and Freeman Manifest Anxiety test were claimed to measure both state and trait anxiety depending on how the leading question was asked, i.e. to measure proneness ("describe how you generally feel"), or state ("describe how you feel now"). Within nursing literature; many of these tests have been used e.g. Nield (1971) used the AACL for measurement of the anxiety level of patients with chronic obstructive lung diseases and Lagina (1971) used the same test to diagnose anxiety among hospitalized surgical patients. The problem in using these psychological tests is that they were established through demonstrated sensitivity to such variables that may not be directly associated with the hospital patients. The AACL consists

of variables such as anticipation and threat of examination, its failure, child birth experience and motion picture stimuli. Such tests had been developed to use with college students and the content i.e. vocabulary was rather sophisticated and required the subject to have a sharp awareness of his feelings. A person who possesses a larger vocabulary is likely to check more adjectives because of the linguistic sophistication rather than reflecting the emotions level. This could therefore be a serious problem when using the tests with the subjects from varying educational backgrounds.

The MMPI and IPAT were also used in the hospital setting. As they were used to identify personality trait or anxiety proneness, state or situationally derived-anxiety might not be tapped. Besides the problem of their limited use in the area of acute anxiety, these "well known" tests can be subjects for individual bias e.g. there are some people who regard psycho-analytic tests with suspicion. Thus one has to be cautious in using the available tests.

The other approach using the aid of computer to diagnose anxiety level is suggested by Lagina (1971). A computer programme using a Bayesian probability theory approach was designed to diagnose anxiety among hospitalized surgical patients. The theory based on frequency (intensity) of specific indicators occurred in the patient experience during the present hospitalization in relation to the level of anxiety. The anticipated anxiety level, thus, depended on these selected cues, e.g. perceptual awareness, muscle tension, sweating and gastrointestinal symptoms. Apart from this, three other measures of anxiety were used: galvanic skin reactivity, the score from a

paper and pencil adjective checklist, and a diagnosis of the patient's anxiety level by the nurse caring for the patient at that time. Results yielded low intercorrelation among the indicators used in the programme, the computer diagnosis and the three independent measures of amxiety. Hence, the use of machines as aid with the diagnosis of anxiety is still being questioned. The same study suggested that the concept of response specificity be taken into prime consideration for future diagnostic programme for anxiety levels.

Hayward (1975) developed a tool called the modified S-R Inventory which was based on the original S-R Inventory by Endler et al. (1962). The modification involved substituting situations which were deemed relevant to the process of admission to the hospital. Hayward's study was evident with the effect of information in relation to pain and anxiety in surgical patients. Hayward claimed that the S-R Inventory is a suitable tool for measuring trait anxiety (anxiety proneness). Various situations which happened in the hospital setting can be selected for the "stimulus" part and also with a number of responses. The format of the S-R Inventory can be helped particularly when comparisons between patients in terms of individual differences are required. Details of the S-R Inventory will be discussed further in a later chapter as it provided one of the major tools used for the basis of the present study.

2.6 Methods used in the Present Study

To sum up, there are two approaches in measuring anxiety level, one physiologically oriented and the other psychological oriented. The major criteria in looking for the method of physiological

measurement, is to look for the one that is proved to be reliable easily obtainable without interfering with the subject's perception, the ongoing routine of the hospital or the use of sophisticated machines. In this study, for objective measurement of anxiety three physiological indicators were selected i.e. systolic blood pressure level, radial pulse rate and respiration rate. These are indicators that were widely used and acceptable in most literature. One important factor is that since these indicators have been used in hospitals routinely, the data can be obtained easily without any interference either on to the patient's perception or to hospital routines, providing that there are appropriate criteria readily available.

In the psychologically oriented measures, there are different techniques used such as self reports, projective techniques, objective ratings by the other persons and objective behavioural indexes. In this study, methods used in assessing an inventory (scale) by means of patient's subjective evaluation of the situation as well as the use of direct observation of behavioural manifestations of anxiety by independent observers.

Thus, physiological and psychological approaches to anxiety measurements have been integrated in the present study. It is based on the premise that since anxiety is a complex phenomena, different types of measurement have to be taken into account as much as possible if one would like to assess the level of anxiety more accurately.

CHAPTER 3

PROBLEMS IN SURGICAL PATIENT WELFARE AND PHYSICAL RECOVERY: A CONCEPTUAL FRAMEWORK USED IN THE STUDY

Efforts to assess symptomatically the quality and effectiveness of nursing actions, especially in the hospital setting have taken two approaches; one has been to directly evaluate various aspects of nursing performance with the assumption that when the performance ratings are high, the quality of nursing will be reflected in better patient recovery and welfare. With this approach i.e. process evaluation, quality of care is defined essentially from the professional-technical point of view. A second general approach has been to ascertain the effectiveness of nursing procedures by examining the patients outcomes directly. The consequences of specific nursing actions are examined in terms of the patient's physical and psychological status. This present study elected to use the second approach with the belief that using the patient outcome variables as a criterion measure for the standard and quality of care should give a more accurate picture of the care the patient has received. It would seem to be better to take the outcomes as the point for evaluation rather than the quality of care in light of job performance. Job performance may be rated highly, but the patient outcome in terms of recovery and welfare is poor, as the patient dies, withdraws or makes no progress. There is no single study yet that can demonstrate strong, positive relationships between nursing performance ratings and independent measures of patient recovery and welfare. By contrast, many nurse researchers have attempted to demonstrate various nursing approaches in relation to one or more patient outcome variables. It still remains to

to determine which outcomes should be used as appropriate criteria to indicate the patient's physical condition and psychological status or welfare.

3.1 Definition of Physical Recovery and Psychological Welfare

Wolfer (1973) has defined and distinguished between patient recovery and welfare in order to make it easier in terms of developing criterion measures. "Recovery" has been used in connection with the physical aspects of the patient's condition and "welfare" with psychosocial aspects. Wolfer then viewed "recovery" as the process of restoration and/or attainment of normal physiology and anatomical functioning. This process or set of processes is largely biological in nature and is determined predominantly by the patient's illness, current and past physical condition, type, extent and success of surgery or other treatments and the quality of physical care. Variables such as vomiting, wound healing, urinary retention, bowel function, pain and sleep medication, the number of postoperative days spent in hospital, respiratory and pulmonary problems, and other postoperative complications can all be used singly or in combination as indices of physical recovery. Rationalizing and quantifying these variables provides measures that can be used under appropriate conditions as criteria for evaluating the effectiveness of the therapeutic procedures, especially those specifically intended to improve the patient's physical condition and comfort. This is evident in literature by the work of Lindeman and Van Aernam (1971) who concentrated on preventing post-operative pulmonary complications by means of special preoperative preparation; and in Dumas and Leonard's study (1963) when they

attempted to reduce the incidence of postoperative vomiting by means of the nursing approach,

Patient's "welfare", on the other hand, can be conceived as the complex multidimensional, and changing affective and cognitive state of an individual as he undergoes hospitalization and surgery. The patient's psychological state can be described by the following words: secure, hopeful, confident, trustful, accepted informed or by insecure, frightened, depressed, isolated, dissatisfied, misunderstood, distrusted, demoralized, Certain combinations of these feelings and the patients cognitive state presumably contribute to a person's general "morale" or "level of spirits" at any point in time. When a hospitalized patient has trust and confidence in the nurses and doctors, feels he is being treated and understood as an individual person, understands to the point he wishes his illness and its treatment, receives psychological support and reassurance if he requires it and is hopeful for a positive outcome, his general morale should be relatively high compared to his feelings if all of these conditions were not met. Psychological indicators of emotional state and nurse ratings of negative and positive affect, should reflect this state. The term, "welfare", therefore refers to a class of variables which describes a patient's general psychological state on an evaluative continuum.

A holistic view of man holds that the process of physical recovery is influenced by the patient's psychosocial status. Nursing has existed to deal with man as a unified whole, not just a particular part, but to his total self. The function of the nurse is determined by the health needs of an individual. There are physiological reactions to

diseases which have been labelled "pathologically derived needs". These needs require "instrumental" "technical" and "task-oriented" procedures, functions and treatments (Brown, 1965; Skipper, 1965; Woodridge, Skipper and Leonard, 1968). Most of the procedures are physician-initiated and are primarily intended to correct and to restore biological functions. These procedures have led to many dependent functions for the nurse.

On the other hand, there is the whole set of patient needs that arise as the consequence of hospitalization and treatment. These needs are labelled "psychological needs" and are considered to be largely "situationally derived". They require special functions and skills labelled "supportive", "expressive", and "person-oriented" (Brown, 1958; Dumas et al.,1965; Johnson and Martin, 1958; Mauksch, 1960; Woodridge et al., 1968). The purpose of these procedures is to maximize the patient's comfort and psychological adaptation to his present condition and to rehabilitation. These functions, traditionally the primary responsibility of the nurse, constitute many of her "independent functions". Thus, from Wolfer's point of view there are two major types of nursing functions. One is concerned with the patient's physical recovery and is mainly dependent or interdependent on the medical profession. The other concerns the psychosocial welfare of patients and relies on the independent function of the nurse. Both functions are primary responsibilities of the nurse. In line with Wolfer's categorization, most of the literature involved with surgical patients falls into three major categories: physiological or psychological aspects of patient care or both.

3.2 Development of the Conceptual Framework used in the Present Study

The conceptual framework for this study is derived from the concept of welfare and physical recovery and is presented by Wolfer (1973) in combination with the stress adaptation framework that has been reviewed in an earlier chapter.

A presurgical patient is regarded as a stressed subject with some degree of physiological and psychological disturbances (Figure 3.1). The presurgical patient faces different forms of imminent "dangers" (Janis, 1958); such as the possibility of suffering acute pain, of undergoing serious body damage, dying and anaesthesia. These are endogenous i.e. arise within the individual and may be regarded as inner stress. Exogenous factors that contribute to and aggravate such stress are the unique environment of the hospital, and procedures the patient is likely to go through. Nursing intervention during the preoperative period aims to promote physical recovery and psychological. In this study, it is believed that an individual can be prepared to meet a stressful event or situation such as surgery. Preoperative teaching is one of the means of achieving this.

Preoperative teaching should be systematically organized in terms of content and method. The patient can be encouraged to participate in the teaching-learning processes, by means of self instruction and group learning activities (Figure 3.1).

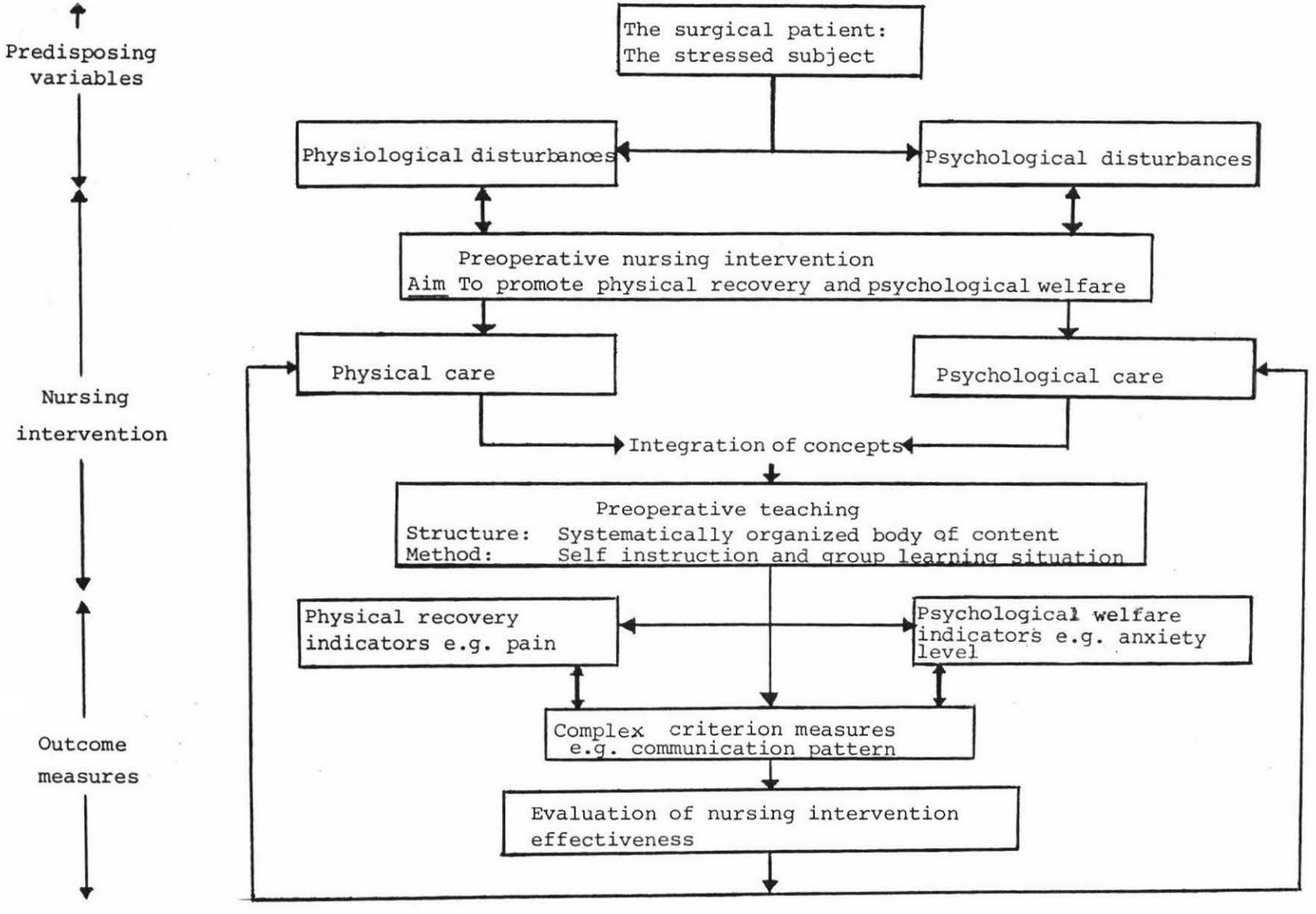


Figure 3.1 A Conceptual Framework Used for the Present Study

3.3. Selected Indicators used in the Present Study

Three major groups of criterion measures: physical recovery, psychological welfare and complex criterion measures will be used to measure the effectiveness of the preparation programme. It is important and essential that the criterion measures selected must meet certain tests in order to be acceptable. Four of the most important criteria for evaluating the adequacy of criterion measures are validity, reliability, sensitivity and meaningfulness (Abdellah, 1977). The criterion measures selected presented as following were claimed to be appropriate measures with respect to those criteria.

3.3.1 Psychological welfare criterion measures

The two indicators used in this study are (i) anxiety level, and (ii) psychological well being of the patient. Nursing research literature over the past few years shows a steady increase using anxiety as a variable. This may be due to the advances made within the psychological study of anxiety such as the trait-state dichotomy, and the growth of measuring instruments.

Since the work of Janis (1958) most research has identified excessive anxiety as a care problem. Hayward (1977) commented that we do not know what precise levels of anxiety mobilize optimal bodily reactions to specified events or situations. However, it seems clear that the majority of patients suffer excessive rather than insufficient anxiety whilst undergoing health care (William et al., 1969). Anxiety in this study is measured physiologically by using three common and frequently used indicators, systolic blood pressure, pulse

rate and respiration rate, psychologically by means of subjective rating scale and observation of overt behaviours.

Nursing is concerned with establishing and providing an appropriate social and psychological environment within which care can take place. Consideration of this aspects leads to the assessment of well being. Preoperative teaching is involved with establishing such an environment at the beginning of nursing contact with the patient. Psychological well being in this study is dictated by means of the subjects feelings about themselves compared over a period of time. The use of subjective feelings of an individual as an indicator of psychological well being was suggested by Bradbourne (1969).

3.3.2 Physical recovery criterion measures

Based on the premise that with adequate preoperative preparation the patient should be able to cope successfully with any demands or stressors acting upon him, during the postoperative period, it was expected that preoperative care would be reflected in rate and characteristic of recovery. Physical criterion measures have used in this study are postoperative pain (frequency of complaint) and analgesic consumption, nausea and vomiting, urinary retension and postoperative complications, sleep pattern and sedative consumption, time elapsed before resuming normal body function (i.e. oral intake, bowel function and full mobility), time elapsed before returning to work and difficulties in adjusting back to usual daily activities, and length of hospital stay. These physiological indicators based on information which is more or less routinely available are comparatively cheap and easy to obtain. They are "objective" and

"unobtrusive" in the sense that the patients are not aware that the information is being collected as a measure of something and "non reactive" in the sense that the information is less subject to distortion because the patient's possible reaction of being studied (Webb, Campbell, Swartz and Sechrist, 1966).

Criterion measures of postoperative recovery which are basic autonomic or smooth muscle functions, such as urination, vomiting, defecation, eating and ability to sleep are regarded as criteria that should be retained for assessment of recovery from any surgical intervention (Minckley, 1974). These measures were widely used in various studies including the recent ones (e.g. Johnson, Dabbs and Laventhal, 1970; Schmidtt and Woodridge, 1973; Hayward, 1975; and Fortin and Kirouac, 1977).

3.3.3 Complex criterion measures

The term "complex criterion measures" in this study refered to measures that do not fit nicely into either physical or psychological measures, but may imply to both. The three measures were the patient's communication pattern, level of cognitive-clarity (i.e. understanding of treatment and care, awareness of adjustment to physical environment) and psychosocial pattern (relationship with staff and family including other patients). These measures were based on the premise that if the patients had been adequately prepared and were in the well established relationship with staff from the preoperative period, they should be adequately functioning in these aspects during the post-operative period. These measures were to be obtained by means of using independent observers.

CHAPTER 4

A CRITICAL REVIEW OF LITERATURE IN RELATION TO PREOPERATIVE TEACHING

In the early part of this chapter, the concept of patient teaching, and teaching and learning principles which underlie the process of patient teaching will be discussed. Some basic assumptions underlying preoperative teaching in particular will be presented, followed by a close look at the nursing literature in this area. Methods used in preoperative teaching will be discussed especially those selected for the present study, namely self instruction and group learning activities.

Many nurses recognize patient teaching as an important function of nursing, but are less sure about the key question of how it can be accomplished. The main objective of teaching in general is to produce change in five major aspects of the process of daily living (Knowles, 1961). These changes concern change in things known (knowledge), in things done (skills), in things felt (attitude), in things values (appreciation) and in things comprehended (understanding). There is general agreement that teaching involves a degree of change. When applied to patient teaching, this implies changes within the person in the direction of assuming more responsibility for their own health which involves all the five aspects of change. Nursing has a unique contribution to make in bringing about this change because of frequent and close contact with people who are likely to be particularly conscious of their health at the time that the nurse sees them. Through teaching, applied at the appropriate moment, the nurse can help clients to understand the importance of health and help them to assume

the responsibility for applying what they learn to themselves and their families.

4.1 Concept of Patient Teaching

The basic purpose of nursing is the promotion of health, teaching is one of the nurse's activities which contributes to the attainment of that aim. This concept has been shared by many nurse theorists and most nurses seem to agree on the premise that teaching is one of the nurse's functions. Peplau (1952) considered teaching as one of the most important nursing roles in health-illness situations and as the combination of all other described roles such as role of resource person, surrogate role and role of counsellor. From her point of view, nursing can be considered as an educative instrument assisting the recipient of care to reach a desirable state of health, that is to say an individual can be taught to care for himself apart from care that has been given to him. Lambertsen (1964) also characterizes nursing as an educative process where the nurse can acquire the role of teacher. With the goal of increasing independence, Henderson (1966, 1971) states that nursing assists the sick or well to do health activities they would perform unaided if they possess the necessary strength, will or knowledge. Kreuter (1951), in her exploration of what is good nursing care, identifies teaching of self care and counselling on health matters as nursing operations needed to provide care. The concept of patient teaching varies depending on the philosophy of nursing held by various authors. Some regard teaching as one of the functions of nursing while others see nursing itself as an educative process. Within these different perspectives, degree of recognition of the importance of patient teaching varies. However, they all share the common goal that nursing exists as a helping profession to assist

people to attain optimum health throughout their life process. Teaching is seen as one means towards the goal of nursing with both the nurse and the patient assuming responsibility for movement toward the goal. The definition of patient teaching in this study is based on the definition that has been presented by Pohl (1965, 1973) in which she regards it as the sum of all activities by which nurses help an individual to understand and apply knowledge about health and illness in order to achieve the goal of optimum health. Monteiro (1964), Scholdfelt (1971), Winslow and Fuhs (1973) and Girouard (1978) were among others who supported the importance of the role of the nurse as patient teacher. Pohl (1963), in a survey of 1500 nurses, found that approximately 80% of the respondents believe that teaching was the responsibility of all nurses.

4.2 Problems in Patient Teaching

The evidence of patient teaching in nursing situations varied with practitioner and institution. In some institutions, the incidence of patient teaching was very low especially in acute care settings. Streeter (1953) summarized that problems in patient teaching come from the following circumstances:

1. Ability and knowledge of the nurse; the nurse was considered to be a secondary resource providing health related information to the patient or reinforcing doctor's instructions (Liakos, 1958). The nurses themselves feel that they were not competent to carry out teaching functions without initiation by other members of the health team, especially the physician. Hence, the teaching function

of the nurse partly depended on medical judgement and this leads to the second problem.

2. Confusion of roles among the professional members of the health team, especially between doctors and nurses. It has been accepted that there are overlapping roles between the two professional members. Standardization for teaching content and procedures and agreement among the health team members might be the solution to this problem. Nurses are likely to be the most appropriate persons to assume the teaching role as they are the ones who stay closely with the patients most of the time.

3. Lack of evaluation of patient's knowledge or assessment of patient's understanding of his problems, his health needs and the process of care given to him. Thus, any approach in terms of teaching might not be appropriate as it does not serve the actual needs and problems of the patient. This can lead to negative participation or unwillingness to participate from the patient.

4. Over emphasis on the need of individualized teaching without the development of a systematized body of knowledge with the result that each nurse teaches what she thinks is best for the patient. There is no follow up of individualized teaching in the actual clinical setting in terms of its effectiveness and how closely it has met the desirable goals.

5. The lack of time and inadequate staffing are common complaints among nursing staff. With this problem, patient teaching is left to chance and patients often fail to pick up relevant information beneficial to themselves.

These problems are still evident in recent literature (Winslow, 1976; Smith, 1977) despite the fact that attempts have been made to improve patient teaching as performed by other members of the health team as well as by the nursing profession.

4.3 Process of Patient Teaching in Nursing Situations

While teaching can be defined as "activities by which the teacher helps the student to learn", learning may be described as the process by which changes are broughtabout in an individual's response to his environment. Pohl (1973) has summarized principles of teaching learning relevant to nursing situations. The twelve principles of learning presented recognized perception, conditioning, imitation, readiness, active participation, emotional climate, repetition and satisfaction as important concepts in the patient learning process. When starting to teach, there are nine principles derived from many concepts such as support, communication, learning needs, objectives, control of environment, evaluation and appropriate application of learning principles and teaching skills.

The process of patient teaching can be divided into five sub-phases (Figure 4.1):

Assessment phase; identifying patient learning needs is essential. Information can be obtained directly from the patient and indirectly from observation and relevant literature. Readiness for learning has to be assessed as well as patient characteristics such as age, nature of the illness, stress and motivation factors.

Determination of goals phase; the second step of the process is to identify what can be learned. Teaching seems to be most effective when the patient's and nurses' goals are similar (Redman, 1972). From the general goal of health teaching, the specific learning objectives should be determined. There should be basic objectives that can be altered to suit the characteristics of particular patients. The key concept derived from educational psychology are helpful in defining desired levels of behaviour. The behaviours were divided into three domains, the cognitive; dealing with intellectual ability, the affective; including expression of feelings, interests, attitudes, value and appreciation, and the psychomotor; dealing with skills commonly known as motor skills (Bloom, 1956).

Preparatory phase; this phase involves a teaching plan, organization of content and teaching materials specific to the learner's needs. Teaching actions and learner's activities have to be identified at this stage including tools for measuring desired behaviours in reference to objectives.

Implementation phase: there are various factors to be taken into consideration when teaching is carried out. Physical environment such as room, light, sound, manipulation of teaching and activities affect the process of teaching and learning.

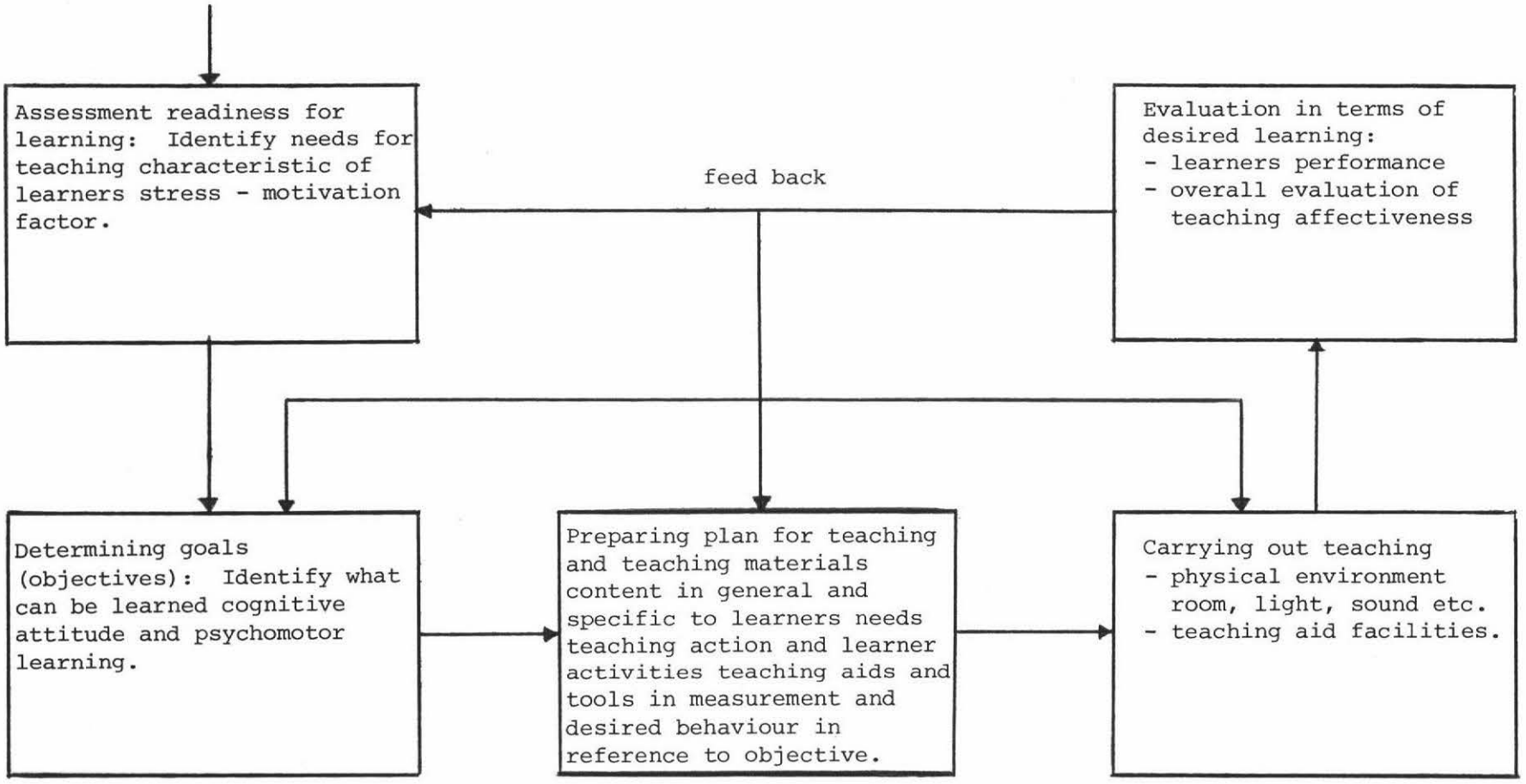


Figure 4.1 Process of patient teaching in nursing situation

(Adapted from Redman, 1972; Pohl, 1973 and Storlie, 1975; Talarico 1978).

Evaluation phase; one of the most important phases of teaching is to evaluate how much the patient has achieved in terms of desirable objectives. Various approaches can be taken to evaluation: directly, e.g. asking questions and indirectly by observation of learner's performance.

The above descriptive process applied to formal or structured teaching. It is accepted that structured teaching is more effective than informal teaching (Lindeman and Van Aernam, 1971) since content, structures and procedures have all been carefully selected and organized in a systematic matter. Thus the patient knows exactly what to expect whereas informal teaching may be left to chance, the patient at any one time may get "bits of information" which may not be logically related to one another.

In this study the author regarded patient teaching as an ongoing process which should be integrated into every day nursing activities. Aiken (1970) made a comment that teaching is not "to do teaching" the night before surgery or the day of discharge, but everyday the nurse should be teaching patients to utilize their coping mechanisms to deal with the environment more effectively. While accepting such comment the present author suggests that there are some stressful events such as surgery that are unique and distinctive. These require supplementary preparation. Teaching at the time of need may be more efficient and møre appropriate than when the demand for teaching is uncertain or not strong enough to motivate an individual to learn.

4.4 Basic Assumption Underlying Preoperative Teaching

Preoperative teaching is regarded as an effective tool used as a means of preparation for patients awaiting for surgery. It is a common term found in most nursing text books, but means different things to different nurses. The problems of preoperative teaching are parellel with the problems of patient teaching in general.

The present study was based on assumptions derived from previously reviewed literature:

(1) An individual can be prepared for stressful life events. With adequate preparation, the individual will demonstrate appropriate coping mechanisms resulting in successful recovery and stable state of his psychological well being.

(2) An individual facing surgery and hospitalization is regarded as a stressful subject with observable and assessable manifestation of physiological and psychological disturbances which are inter-related to one another affecting the rate of recovery and psychological welfare of the individual.

(3) One of the nursing functions is to utilize and individuals coping mechanism to deal with the environment more effectively. For preoperative patients, such utilization is done through preoperative teaching.

(4) Preoperative teaching should be systematically organized in terms of structure, content and evaluation process. Indicators

used for evaluation of its effectiveness should be based on scientific support.

(5) It is anticipated that a preoperative patient is experiencing some degree of psychological disturbance i.e. anxiety; therefore the function of a nurse is to minimize the patient anxiety to the level where it will have a positive effect upon his condition.

Apart from these basic assumptions preoperative teaching is regarded as an open gate to effective communication. It is the time that the nurse can supply the patient with the information relevant to his needs and problems, as well as providing support for his emotional needs.

It is the time that the patient is initially encouraged to be actively involved with his case, gaining more confidence and control over himself and his environment: thus contributing to the effectiveness of his care (Tryon and Leonard, 1965). It is anticipated that the patient with this supplementary preparation will recover more rapidly physically and psychologically.

4.5 The Significance of Preoperative Teaching

The results of nursing studies have contributed to the need for preoperative teaching. Which can be regarded as a means of providing information to patients. The study by Pender (1974) found that approximately 85% of the 162 hospitalized patients interviewed in her study wished that they would have received more information about how to care for themselves at home, the effect their illness would have on their daily lives, possible complications and the prevention of future

illnesses. Meyers (1964) suggested that giving a patient specific information from which he can construct an impending stressful situation helps decrease his tension and increase his comfort. In other words, telling the patient what is going to happen to him can decrease tension and make him more comfortable during stressful events throughout hospitalization.

The problems confronted with preoperative teaching are similar to those of patient teaching in general. Lindeman (1972) developed and tested a group teaching method in order to remedy a situation where lack of time was said to account for lack of teaching. Girouard (1978) used the clinical specialist as a change agent in her study to improve quality and evidence of preoperative teaching in the ward setting. A deficit in the amount of preoperative teaching provided for patients was found by Weiler (1968). The patient wished additional instruction about psychological responses, pain, progressive patient care and deep breathing and coughing exercises. Prsala (1974) commented that most surgical patients have little knowledge or only a vague idea of what is going to take place, thus the need for information is obvious. She further suggested that the admission period should be the key time for interaction with the surgical patient, so that anxiety can be reduced and nurses can demonstrate their interest in patients as individuals. The importance of nursing approaches on admission was also recognized by Hayes (1966).

Identifying the need of preoperative patients, Ryan (1975) reported that 84% of the 150 patients interviewed had preoperative fears. Studies by Carnavali (1966) and Wolfer and Davis (1970) found similar concerns among the patients they interviewed.

Nursing research has demonstrated the benefits of preoperative teaching. Janis (1974) found that patients prepared psychologically were able to adjust more rapidly in the postoperative period. Lindeman and Van Aernam (1971), Putt (1970), Scholdfelt (1971) and Schmidtt and Wooldridge (1973) have demonstrated that there are psychological and physiological benefits which patients derive from teaching. Bendixen (1965) stated that respiratory and circulatory complications remain the major sources of morbidity and mortality in both medicine and surgical illness. Hodgson and Good (1964) claimed that one out of every 500 surgical patients could be expected to die of pulmonary embolism. Resent studies by Ayres and Giannelli (1967), Bendixen (1965), Dumas and Leonard (1963) identified preoperative instruction about exercises as a possible means of preventing pulmonary and respiratory complications.

4.6 Nursing Approaches in Preoperative Teaching

The term preoperative teaching even though a common term used in many nursing text books, is still a vague, collective term open to different interpretations. Preoperative teaching, then, means different things to different nurses. To one it means answering the questions the patient asks. To another it means attempting to reduce anxiety. To the third it means telling the patient that he will need to deep breathe, cough and move after surgery. Lindeman and Van Aernam (1971) through their observation of preoperative teaching in various hospitals commented that it tends to resemble "telling" more than "teaching" and consists of general vague statements rather than specific instructions. The evidence following this is that of confusion within both nurses and patients. Lack of agreement on what content should be taught,

how and when gives little assurance to the nurse, she is then teaching what she thinks is best for the patient. On the patient side, there are two aspects of the problem, confusion and lack of information. The patient may get different information on the same subject from various members of the health team, and even from different nurses. This easily leads to confusion if such information is not congruent. The other is that since there is no actual agreement and evaluation on this teaching aspect of care, carried out and patients find themselves unsatisfied with lack of information. Patient ignorance as perceived by nurses can derive from either confusion or unsatisfactory lack of information in previous experience.

Thus, the need for an appropriate and well organized body of content and methods of teaching in the preoperative stage is becoming increasingly clear. After searching through literature it is surprising how little has been done in this area, despite the early recognition of the teaching function of the nurse. There was only one discussion on preoperative teaching of deep breathing, coughing and bed exercises reported in 1941 by Dripps and Waters. Preoperative teaching tended to be practiced in the manner of an art rather than having firm scientific support. A more scientific approach to evaluating preoperative teaching was not really initiated until the late 1960's, for example, the work of Johnson and Dabbs (1967), Healy (1968), Dumas and Leonard (1963), and Egbert, Battit, Welch and Bartlett (1964). Lack of proper methodology and appropriate tools to measure the effectiveness of the teaching was the major weakness with much of the early research. This might be one of the factors contributing to lack of preoperative teaching as the nurses were probably uncertain of the effectiveness of preoperative teaching.

In a somewhat similar way to Wolfer's concept of patient welfare and physical recovery which leads to two major aspects of nursing functions, Boore (1977) looked at two major aspects of nursing functions in preoperative care: physical and psychological preparation. The early work in preoperative teaching which emphasized physiological aspects of care, especially with the teaching of deep breathing and coughing exercises. The early work on the other aspect, psychological care was the study of the effect of nursing care on the incidence of postoperative vomiting by Dumas and Leonard (1963). In their study, the experimental treatment was "directed toward helping the patients attain a suitable psychological state of surgery" by using an interpersonal nursing approach. The study used only one dependent variable, the incidence of postoperative vomiting. The incidence in postoperative vomiting in the recovery room was lower in the experimental group than in the control group.

Egbert et al. (1964) used a more informative approach and discussed with patients prior to operation the pain which is likely to be experienced postoperatively and the measures which would be available to control it. The amount of analgesia needed postoperatively diminished and the patients were discharged from the hospital more rapidly. However, the subjects were also taught how to relax their abdominal muscles. In this case, it becomes difficult to distinguish between the effect of the psychological and physical relaxation, unless one likes the premise that physical relaxation can only be completely attained if a person is psychologycally well prepared.

In a similar way to the "interpersonal nursing approach" as presented

by Dumas and Leonard (1963), an approach described as "nurse-patient interaction process" was introduced. Instead of supplying patients with information specific to preoperative care and postoperative condition, this style of approach aims to relieve psychological stress by directing attention toward patients as individuals, and their immediate needs, perception of illness and treatment. However, using interpersonal skills in supporting psychological well being in the patients alone might not be sufficient and appropriate to their needs as it was found in a recent study by Felton, Huss, Payne and Srsic (1976). The study was conducted to compare differing approaches to preoperative preparation. The finding was that the patients who were provided with information and were taught exercises and also were given the opportunity to discuss their feelings, had higher scores indicating psychological well being after operation than either of the control group who received no special preparation or those who received a "therapeutic communication" (or interpersonal nursing) approach. This finding indicates that in working with patients with physiological disturbance or injury, nursing intervention can not be either only physiologically oriented or psychologically oriented but requires an integrated concept of both.

4.7 Methods and Techniques used in Preoperative Teaching

Although group teaching has been used extensively in such areas of health education as prenatal care, postpartum etc., it was not introduced into the preoperative teaching area until the work of Mezzanotte in 1970. In the introduction to her study, Mezzanotte reports finding herself impressed with the evidence of successful use of group teaching in other areas of patient education whereas preoperative was mainly on

a one to one basis. The problems were found in both patients and nurses. On the patient side, since one-to-one teaching takes a considerable amount of time, the result is that in busy wards some surgical patients are receiving only a minimal amount of instruction. Due to the time and place of teaching, patients might not be able to concentrate on what the nurse is saying and thus fail to pick up important and relevant points. On the nurse side, due to the time factor and increased administrative tasks and various other factors patient teaching in the preoperative period may be insufficient or even the first item to be discarded under the pressure of work. Focussing on problems arising from patients and nurses, Mezzanotte instructed 24 patients in groups of four at a time. The content taught was on techniques of deep breathing, coughing and exercising and what to expect pre and post-operatively. All were instructed in the evening before elective abdominal surgery. Each group session lasted 30 minutes. After the patients had recovered sufficiently (usually five to seven days post-operatively) they were interviewed by the nurse investigator, following specific guidelines. She claimed that all except one patient, were enthusiastic about the group teaching. The patients did seem to recall and use instructions they received and there were some side benefits from group participation. Twenty out of twenty-four patients stated they preferred group instruction to individual instruction and twenty-three patients stated that they would recommend group instruction if a relative or friend wern to have surgery.

Mezzanotte's study may be too limited to permit definite conclusions, but it does lend credence to the idea that group techniques would be an effective method for instructing patients preoperatively.

The major weakness in her study seemed to be in the methodology and evaluation part. First, it was a one group study with no other group for comparison. Secondly, the evaluation method used was patient interview only. Also as a one-man study, the dual role of the nurse investigator and nurse interviewer could have influenced some of the patients responses. Mezzanotte suggested that since preoperative instruction had been given to the group, the nurse then could spend more time with those patients who do have special problems or who need specific attention, thus she had not neglected the needs of the many for the few.

Following Mezzanotte's study is the work of Linderman and Van Aernam (1971) comparing the effects of structured and unstructured preoperative teaching. Unstructured teaching was defined as any instructions given to patients providing that definite nursing procedures or policies describing preoperative teaching did not exist. Each nurse taught what, when and how she felt was correct. Also each nurse determined for her patients the priority given to preoparative teaching. The structured teaching included specific steps to be taken before implementation e.g. the objectives were defined, a teaching plan including process and content was well formulated and staff were retrained for teaching. The results were that both the effectiveness of structured preoperative teaching and the value of it in terms of patient recovery were evident by the decreased length of hospital stay and the higher score on the tests of ventilatory function. These differences were significant at .05 level. However, such findings did not directly answer the question of "Does structured preoperative teaching reduce postoperative respiratory and circulatory complications?", although

they confirmed that structured preoperative teaching helped to increase ventilatory function as measured by vital capacity, maximum expiratory flow rate and forced respiratory volume. The structured teaching helped patients to breathe and perform bed exercise more effectively than those patients receiving constructured teaching.

A year later, Lindeman (1972) conducted another study aimed to compare the effects of two different nursing approached, individual and group in preoperative teaching. The variables used were postoperative ventilation function, length of hospitalization, postoperative need for anaesthesia and length of learning time. Three of these derived from the first study. According to her findings, group teaching was found to be effective and more efficient than individual teaching. However, the emphasis of the study was on physiological aspects of care.

Another interesting approach to preoperative preparation is a project carried out in the Halifax Infirmary in Canada (Prsala, 1974). The project was started in February 1973 with the stated objective to counteract the patient's anxiety and lack of preoperative teaching. An admission unit was established to admit only patients scheduled for elective surgery. The patients stayed in the unit for almost the whole period of their preoperative day (8.00 a.m. - 4.00 p.m.) and were transferred in the late afternoon to the ward in which they would have the remainder of their stay. No patients were kept over night. The first aim was to help the patient scheduled for elective surgery to adjust to the hospital environment and alleviate the fear of the unknown. Consequently, immediately after the patient enters the unit, he is informed about his length of stay in the admission unit and the

type of tests and preoperative procedures he will undergo there. "Routine" procedures such as blood pressure, pulse rate etc. are taken. Both individual and group teaching is used. The patient is informed about the time of the operation and the expected length of hospitalization. Deep breathing, coughing and moving exercises are taught, also information about tests, preoperative medication. recovery room and other post-operative routine is provided and shown by means of a slide show. Prsala claimed that such a unit, ensures that when explanations are given and teaching is done, it creates a feeling of togetherness for patients and gives them an opportunity to express their fear of surgery. However, one might question the idea of establishing a separate unit for admission and preoperative teaching, on the grounds that preoperative teaching should be considered as part of the whole preparation procedure for which the nurse in the surgical ward should be responsible. It might be better for the patient to get settled initially in the ward in which he is going to stay rather than being shifted from one ward to the other. On the staff side, Prsala claimed that the nurses in surgical units were very enthusiastic and readily accepted the idea of having a separate unit for preoperative preparation. However, one can consider this as fragmentation of care as opposed to the total or comprehensive care we are trying to encourage. Besides which creation of a separate unit requires time and money. It might not be a practical idea in terms of hospital expenditure. The use of staff and facilities already available may be more economical and as efficient as having extra staff and facilities.

Another study similar to the Halifax Infirmary experience, but more on psychological aspects of care is the project reported by Skillings

(1977). It was described as a campaign to fight the fear of the patients on coming for surgery. The aim was to provide information and to give support. The approach used was a group teaching session officially called "presurgical information and support session". The admitting department personnel who normally send preadmission information to the patients enclosed an "invitation to dinner". On admission to the hospital, the patient and two family members were given tickets for evening meals.

The presurgery "dinner party" was attended by surgical patients for the following day, their families, the hospital chaplain and a nurse from a surgical ward as hostess. Dinner was followed by an informative slide and dialogue programme covering physical setting of the hospital including operating and recovery rooms, and experiences such as pain and recovery from anaesthesia. This programme might be valuable in terms of emotional preparation and a shared experience between patient-family-staff, but how much patients actually increase their knowledge by means of the "party" is doubtful. The only measure used to evaluate the effectiveness of this programme was the patients expression of appreciation.

McCone (1973) reported a preadmission patient teaching unit organized in the Montreal General Hospital. The clinic's aims were to initiate personal contact with the patient, to acquaint the patient with the purpose and nature of activities carried out pre and postoperatively in any type of surgery, to provide an opportunity for questioning, and to offer the advantage of group learning. It was claimed that the clinic had successfully achieved its aims with patients responding

positively. Timing may have been a factor in lowering anxiety as patients had two weeks of getting prepared for what would happen in hospital. The fact that preoperative teaching was done a certain length of time prior to surgery did not affect the patients' memory as McCone claimed that the patients remembered activities taught, and mostly initiated them during the postoperative period. However, apart from including memory as an another assessing variable, McCone's evaluation measure is in similarly with Prsala (1973) and Skillings in that it used only subjective measures such as patient's feelings and opinions, especially feelings of appreciation.

Fortin and Kirouac (1976) conducted a randomized controlled trial of preparative patient education in a large Montreal hospital. It was intended to accelerate the operated patient's return to the usual activities of daily living. The programme was planned by nurses and the teaching done by a nurse as part of the preadmission procedures usually undertaken 15 to 20 days before the actual admission to the hospital. The sessions were conducted once a week in the hospital and no more than seven patients took part in each session. Patients were encouraged to ask questions. A tour of the hospital areas where the patients would eventually receive care concluded the session. The findings were that the patients who received this care recovered from the operation more satisfactorily than the control group of patients and thirty-three days later these patients were still in a significantly better condition that the other group. However, as the teaching was done sometime prior to surgery, other factors may have interfered. The idea of a hospital tour is new, but might not be the most practical and acceptable if there are other ways of helping the patients to become familiar with the

environment that can create the same effect. The other point is that since the preparation was done at some time prior to the actual admission, what number of patients that it could reach is still doubtful. This is so also with Skilling's study. Even though, the programme was counted as part of the preadmission procedures, it might not be feasible for some patients to attend the programme all through in practice.

The other different approach in this area is the study by Girouard (1978) using the clinical specialist as change agent in solving the lack of preoperative teaching. The investigation was conducted to answer the questions: would the presence (availability) of the clinical specialist employing a strategy of planned change cause nurses to engage in a greater amount of preoperative teaching? The findings were (1) even though there was no significant change in nurses opinion and activities towards preoperative teaching in the experimental ward, (2) they did change performances, i.e. more frequent recording of pre-operative instruction having been given to patients appeared in the nursing Kardex and nurses notes. Using frequency of recording as an indicator, the experimental group did significantly more operative teaching than the control group and showed a significant increase in frequency of preoperative teaching over what they had done before entering into the "planned change" programme. However, using the record as a measure, it may not have been valid, as there was no guarantee that such events had taken place. Also content of teaching depended on the nurses inclination at that time rather than on an organized and systematic teaching plan. Another risk of using a clinical specialist is that there is a danger that staff at the level

likely to have the closest contact with patients may not appreciate the importance of preoperative teaching. There are two main studies in the recent nursing literature from the United Kingdon, Hayward (1975) and Boore (1976). Both used the experimental method of study. Hayward studied the effect of preoperative preparation on postoperative pain in general surgical patients. The preparation given to the experimental group patients included information about procedures and conditions patients would be likely to experience, discussion about pain and methods of pain relief, teaching of deep breathing and leg excercises. The study was conducted in two hospitals. The overall findings showed that the experimental patients became relatively pain free more rapidly and required significantly less analgesics than those of the control group. In addition, they obtained higher scores on several physical indicators and psychological tests used.

Boore (1976) examined the effect of preoperative preparation similar to that given by Hayward (1975), on biochemical indicators of stress and a number of measures. A reduced level of corticosteroid hormone secretion and the lower incidence of infection were found among the patients in the experimental group as compared to those of the control group.

4.8 Method and Selection of the Teaching Tools used in the Present Study

To provide necessary information in a form that would encourage self learning activities as well as being a means of communication, the use of printed material in booklet form is selected. The booklet provided basic information to the patients as well as giving them

specific ideas about what would happen to them during different periods of hospitalization. Hayward (1975 p. 44) stated that "perhaps the major weakness with the method of information giving used in the hospital is that the over-whelming majority of patients are told, i.e. a verbal approach." Ley and Spelman (1967) reviewed attempts to measure the account of information that patients remember at various periods of time following instruction. General findings were that content and accuracy of recall are dramatically affected by the passing of time. The authors suggested that more attention should be paid to developing ways by which patients can be given information in writing so that it can be easily assimilated, and repetition on rereading then becomes feasible.

Mohammed (1964) in her study of patient's understanding of written health information found that 43% of the patients were unable to profit from any written health materials. The finding of the study could result from the test materials used in that they were not relevant directly with the patients, and the form (multiple choice type of test) may have been too complex. This suggests that the effectiveness of written communication depends not only on the material itself, but also on its suitability for particular patients. In the present study, the use of the booklet was not the only means of patient teaching. It was used in conjunction with a group teaching discussion session. The booklet provided the patient with some baseline information before engaging in other activities associated with learning.

Group teaching works to reinforce, clarify and correct the patients understanding of surgery and also provides him with information

to help recovery (Lindeman, 1972; Schrader, 1977). Group teaching enables a nurse to reach many patients in the same time (Marram,1978). Within the group setting, discussion among patients is encouraged. It is anticipated that the patient will feel less alone if he actually sees and talks with other individuals also scheduled for surgery. Hearing others voice their concerns, fear and expectations may encourage him to do the same. Reinforcing of information by the nurse might do a great deal to help the patient cognitively structure his forthcoming experience in an accurate and meaningful manner. Group learning may also encourage the patient toward self care behaviour (Valentine,1970).

In the present study, an audiovisual presentation was selected consisting of a slide programme providing information about procedures and the physical setting the patient is likely to go through. Familiarity with the environment and knowing what to expect may help a great deal in adjusting to the stressful events as shown in one study by Lederer (1958). It was found that the patients who are in an unfamiliar environment and are unaware of the expectations experience more stress than the patients who are familiar with the environment and role expectation. Thus, in this study as well as showing the patient slides of the hospital, group session always included one patient who already had some experience of hospitalization and surgery. It was anticipated that this would be beneficial to the patients who had not had such an experience.

Preoperative teaching in this study is also regarded as an open gate to effective communication between patient and nurse in which it was claimed to have a positive effect on patient rate recovery as in the

study by Kaur and Chay (1976). Patient participation will be encouraged right from the beginning as Wilson (1969) noted that "one of the most interesting current developments in nursing" was a move to reverse the habit of staff directiveness and to increase patient participation.

The present study regarded the use of qualified staff as appropriate persons to do the teaching. Effectiveness of teaching by unqualified and less experiences personnel may be questioned. The study by Beckly (1958) of patient teaching by student nurses showed that students tended to teach patients the content they themselves were learning at that time, not necessarily relevant to the patients needs or problems.

The group teaching session will be done in the evening before surgery. The anticipation of the time used is 30 to 45 minutes. Preventing overload of information and patient readinesss for information had been taken into consideration in this study. A recent study by Felton et al. (1976) reflected that a lot of time and too much information given to the patient may not necessarily have a positive effect (e.g. the average length of time for the experimental group was 88 minutes; during that time the patient was shown a set of photographs, two films, observed a demonstration followed by practice of exercises). It seemed that the patient may not have had much time to himself but would be dancing around to the staffs demands on him. In the same study, when patient outcomes i.e. postoperative pulmonary complications were examined, it was found that 80% of the experimental group patients who received such intensive preparation reported to have some type of pulmonary complication.

Similar to Felton et al. (1976), Keller (1965) attempted to reduce identified anxiety by an information giving experience of "five" visits. The findings indicated that the patients receiving the information had increased anxiety levels and those who did not have this experience had significantly decreased their anxiety level. Thus, such studies indicated that, for some patients, information, instead of reducing fear of the unknown, increases anxiety. How we go about teaching is probably more important than what we teach. For example, the experience of having five visits may be the actual source of anxiety rather than the operation itself or it even adds more anxiety and fear to what the patient is experiencing already. It seems that the most appropriate time to provide information is on admission day and the time spent with patients is important. A lot of information and time spent does not indicate that patients anxiety has decreased.

Preoperative teaching: everybody's business?

As shown in a study reported by Egbert et al. (1964), doctors also are aware of the significance of preoperative preparation and claimed that doctor-patient rapport has a significant influence in reducing postoperative pain and other ill effects of surgery. Several studies have been done also by operating room nurses concentrating on preoperative visits (Lindeman and Stetzer, 1973; Dirksen and Shewchuk, 1975; Shelter, 1972; and Ridgeway, 1976). Each claimed that preoperative visits by the operating room nurses are beneficial to the patients postoperative condition and regarded it as an expansion of the role of operating room nurses.

Findings from these various studies are appreciated by the present author as providing more recognition for the significance of pre-operative preparation by various members of the health team, e.g. as an integrated service between nursing and social work (Murphy, 1977). Much would be gained by every member of the health team taking an active part and contributing to the preoperative preparation for surgical patients, providing that nurses still realize that patient teaching is one of their primary functions. Gruendemann (1977) argues that preoperative teaching by all possible means is part of the nursing process. However, the original concern in the present study is not with too many people "doing" the teaching, but with the lack of teaching. Every member of the health team may claim teaching is one of their functions, but that they actually participate in patient teaching is less clear.

CHAPTER 5

FORMULATION OF HYPOTHESES AND THE RESEARCH DESIGN

The present study was designed to investigate the effect of a specially designed preoperative teaching programme on postoperative recovery and welfare. In this chapter, the general and specific hypotheses are presented, and selected variables are identified in the early part of the chapter. In the second part, the design of the study including subjects, setting and instruments used are discussed In the final section, the experimental treatment procedures of the study, that is, the structured preoperative teaching programme is presented.

5.1 Hypotheses

5.1.1 The general hypothesis

The general hypothesis tested in this study was that special preparation for surgery in the form of structured preoperative teaching, would decrease stress and anxiety occasioned by surgery and hospitalization, and be associated with improved postoperative psychological welfare and more rapid physical recovery.

5.1.2 Psychological welfare criterion measures

It was predicted that compared with control group subjects, experimental group subjects would:

i. report less psychological disturbances in the postoperative period while in hospital,

ii. experience less anxiety in the post-operative period as indicated by the surgical patient anxiety scale prior to the time of discharge,

iii. show less degree of deviation in selected-physiological indicators of anxiety i.e. systolic blood pressure level, pulse and respiration rate,

iv. demonstrate a better state of psychological well being after the four weeks of being discharged from hospital.

5.1.3 Physical recovery criterion measures

It was predicted that compared with control group subjects, experimental group subjects would:

i. require less analgesics and report less complaints of pain in the overall postoperative period,

ii. experience less nausea, vomiting, urinary retension and fewer post-operative complications over all body systems, including signs and symptoms of local and systemic infection,

iii. experience a better sleep pattern and require less sedation in the postoperative period,

iv. resume normal body function earlier with respect to oral intake, bowel motion, and full mobility,

v. be discharged earlier, report a more rapid return to work and less difficulties in adjusting back to normal daily activity.

5.1.4 Complex criterion measures

It was predicted also that compared with control group subjects, the experimental group subjects would demonstrate a better general condition in the following aspects; physical, sensory, cognitive clarity, psychosocial and communication in the 48 hours following the operation.

5.2 Definition of the Major Terms used in the Study

Physical recovery. The process of restoration and/or attainment of normal anatomical structure and physiological functioning. This process or set of processes is largely biological in nature and is determined predominately by the patient's illness, current and post physical condition, type, extent and success of surgery or other treatment, and the type and quality of physical care.

Psychological welfare. The complex, multidimensional and changing affective and cognitive state of an individual as he undergoes hospitalization and surgery. The term "welfare" refers to a class of variables which described a patient's general psychological state on an evaluative continuum.

Stress. The non-specific reaction of the body to a stressor or stressors as well as highly specific neuroendocrine reactions involved.

Anxiety. An alarm reaction appearing whenever there is a threat to the organism, and becoming abnormal only in terms of intensity, the cues which evoke it, or the form which it takes. Thus, this refers to stress

responses which form a pattern of behaviour, both physiological and psychologigal, that is observable by the subject and other people.

Structured preoperative teaching programme. An organized and specially developed preoperative teaching programme which aims to put the pre-surgical patient in the best possible condition physiologically and psychologically to withstand the demand of any stressors acting upon him. The structured preoperative teaching programme used in this study incorporated both self directed-learning activity and teaching-learning activities in a group situation.

The concept of stress and anxiety used was based on the work of Selye (1950, 1956, 1974) and Lazarus (1966, 1971). The definition of physical recovery and psychological welfare were based on the concept presented by Wolfer (1973).

5.3 Identification of Variables

In this study, the independent variables consisted of a structured preoperative teaching programme (as described fully in later parts of this chapter). Operational definitions of dependent variables as derived from the hypothesis included the following:

Psychological disturbance during the period of hospitalization - any comment or statement concerning a patient's psychological and emotional condition as recorded in the nurses' notes e.g. depressed, anxious, worried.

Psychological well being after discharge from hospital - statements made by patients concerning feelings about themselves in relation to hospitalization and surgery compared with how they viewed themselves prior to such events.

Analgesic consumption - the total number of oral and parenteral analgesics administered throughout the postoperative period.

Complaints of pain - patient's report of pain both directly and indirectly associated with surgery as recorded in the nurses' notes during the postoperative period which covered the period from entering the recovery room to the time of discharge from hospital.

Nausea and vomiting - patient's report of nausea and vomiting or evidence of vomiting as observed and recorded by nurses in the post-operative period.

Urinary retension - this was defined by the time between surgery and when the patient first voided as observed and recorded in the nurses' notes. In case of a patient having an indwelling catheter, the time was counted from its removal until the patient first voided.

Deviation in systolic blood pressure level - deviation of ± 10 mmHg of systolic blood pressure from the baseline level as recorded by doctor on day of admission.

Disturbance in pulse rate - deviation of ± 10 beats of radial pulse rate from the baseline data as recorded on admission.

Postoperative complication - any signs and symptoms of infection or abnormalities occurred within the body systems during the post-operative period as recorded in the nurses' notes.

Pattern of sleep and number of sedatives required - report of sleep pattern as observed and recorded by the night staffs and the record of any sedatives given during the postoperative period.

Selected normal body function indicators - time taken in resuming ordinary diet, time to first bowel motion and time to be fully mobilized as observed and recorded by nurses.

Length of hospital stay - the number of days in hospital with day of admission and the day of discharge being counted as a day. For subjects admitted for preoperative medical work up, the day before surgery was counted as day one.

Normal daily activities - activities in patient's daily life including personal hygiene, household activities, sleep pattern, work or job associated-activities and leisure and pasttime activities, e.g., getting up in the morning, bathing, washing dishes, typing, gardening etc.

Overall general condition - subjective evaluation of independent nurse observer on the following aspects of the patient's condition; physical, sensory, cognitive-clarity, psychosocial and communication aspects in the first 48 hours post operation.

5.4 Design

A control group design using before and after measures was used. In order to avoid a confounding effect due to passing of information between the experimental and control groups, the groups were taken sequentially rather than concurrently with the experimental treatment being conducted prior to the study of the control group experience. Experimental group patient received a structural preoperative teaching programme while the control group was undergoing the usual hospital routine for postoperative preparation. The latter differed from the former with respect to the amount and the specificity of the content and the degree of structure of the learning situation. There was no formal nursing procedure or policy statement describing routine post-operative teaching. Moreover, when such teaching was given it was not certain whether it was carried out by qualified or other staff. Selection of subjects extended over 12 weeks (5 weeks for the experimental group and 4 weeks for the control group) starting from September to November, 1979. All data collection, including follow up information, was completed by the end of December.

5.5 Subjects

Patients meeting the following criterias served as subjects:

(1) age fifteen years or above.

(2) admitted under non emergency condition, i.e. elective admission.

(3) Scheduled for any type of surgery under general anaesthesia.

(4) agree to participate in the study, and also be able to read, write English and with no obvious speech difficulty.

In this study patients with manifest abnormalities in mental state, patients without lower limbs, paraplegics, hemiplegics and patients with severe comorbidity due to deseases such as pulmonary emphysema, chronic respiratory distress and coronary diseases were excluded. Patients admitted from 17 September to 17 October, 1979 served as the experimental group. Patients admitted from 20 October to 28 November, 1979 served as the control group. Matched pairs of patients were formed between the two groups using matching variables, such as sex, type of operation. It was not possible to match all patients according to the selected variables. However, attempts to match patients according to sex had been successful; thus there were 16 female and 14 male patients in each group. The total number of patients involved with the study was 60 (32 female and 28 male). The mean age of the two groups differed by 3.14 years (control group mean was 41.87 years versus 38.73 years in the experimental group). The mode of each group was the same, at 26 years. The difference was not considered great enough to be clinically significant. It was, therefore, concluded that in terms of both sex and age, the two groups of patients could be considered as coming from the same population (see section A, Chapter 7 for details).

5.6 Setting

The study was conducted at a 600 bed regional hospital and in six surgical wards with the total of 180 beds. The staff pattern and number were similar in each ward. Registered staff (i.e. registered general and comprehensive nurses) were responsible for patient care

throughout the whole 24 hours of care. As well, there were those who worked under the supervision of registered staff, i.e. enrolled nurses and student nurses. There was no significant change in the staff allocation or turnover during the time the study was conducted. The method of nursing care delivery used in most wards included aspects of both task and case assignment.

In terms of ward environment, although four wards used in the study were situated in the new section of the hospital whereas the other two situated in the old section of the hospital, the physical layout of the wards, especially the patient's room and facility allocation did not differ greatly. The major difference concerned facilities e.g. in the new block, several additional rooms such as a staff conference room an an inquiry office separated from the nurses' office.

5.7 Instruments

The instruments used were specially developed for the present study. They were:

(1) tools developed to assess the patient's level of state anxiety by means of both subjective and objective measurement. Subjective measurement involved development of anxiety rating scale i.e. the surgical patient anxiety scale (SPAS) whereas the objective measurement concerned physiological indicators i.e. blood pressure, pulse and respiration rate,

(2) the Patient Condition Evaluation Form (PCE) which was used by independent nurse observers to evaluate various aspects of patient's condition in the 48 hours after operation,

(3) the Daily Activity Checklist (DAC) which was used by patients to report how they viewed themselves and their condition during the four week period after discharge from the hospital,

(4) the overall information form which was used to collect general and specific information of the patient's condition, and

(5) additional questionnaire which was used in conjunction with the Daily Activity Checklist (DAC).

5.7.1 Subjective and objective measurement of patient's state anxiety

Since anxiety was considered as a major variable associated with patient recovery, anxiety measures were necessary. There were two major types of anxiety measurement in this study, subjective, using specially developed scale and the other, objective by means of instrumental measurement of three selected physiological indicators, i.e. systolic blood pressure, pulse and respiration rate. Detailed description of these two types of measurement and the procedures associated with them is as follows:

(a) The Surgical Patient Anxiety Scale (SPAS: Appendix 5.1)

Theoretical basis and development: The SPAS was based on the S-R Inventory by Endler et al. (1962) which attempted to measure the anxiety proneness of individuals in response to specific situations. This approach requires the respondent to rate the strength of his responses to 11 different situations (e.g., "you are crawling along the ledge high on a mountain side", "you are getting up to make a speech

before a large group"). It is considered as an estimation of the way the person habitually responds to potentially anxiety invoking situations (i.e. "trait anxiety"). The original S-R Invertory consisted of situations thought to be familiar to college students, including social and non-social situations varying from non-threatening to threatening.

Two studies using S-R Inventory of anxiety as a measurement tool were found in the nursing literature (Wolfer and David, 1970; Hayward, 1975). In both studies, the original S-R Invertory had been modified to suit the characteristics of the subject and setting i.e. the hospital environment. The S-R Invertory was claimed to be suitable in both studies, except for some problems with length (Wolfer and Davis, 1970).

Reason for selection and modification of the S-R Inventory: The S-R Inventory was selected as a suitable measurement tool because specific situations relevant to the purpose of the study can be chosen, as well as the responses. Since the modes of responses were rated depending upon the degree of individual reaction to the situation, specific responses to specific situations can easily be located. These were 11 situations and 14 modes of responses in the original S-R Inventory and these modes were mainly physiological responses. Wolfer and David (1970) modified 5 situations to be more suitable for patients in their study and added one situation, thus made the total situation up to 12. They reported some difficulties in administering the inventory that it was rather too long and tedious for many of the patients. The problem might be that of adding one more situation while maintaining all 14 modes of responses. Later, Hayward (1975) presented the modified S-R

Inventory in the format of 10 situations and 9 modes of responses plus 2 supplementary questions. Each response was rated on a five point scale, with the highest score indicating high anxiety. The format of the present SPAS was based on Hayward's presentation, but with entirely different situations (stimuli), some additional modes of responses and also a systematic pattern of arrangement for response choices.

Descriptions of the SPAS: The SPAS consisted of 20 situations which specifically related to the experience of surgery and hospitalization. It had three major sections, stimuli, responses and additional questions:

(1) stimuli: There were 20 situations based on stresses and stressful events as presented in the studies by Bruegel (1972); Graham and Conley (1971) and Lazarus (1966). Some concerned actual experiences that might occur in the process of surgery and hospitalization. The 20 situations were categorized into four major components, they were anxiety resulting from inability to control one's environment, anxiety resulting from anticipating pain and fear of pain, anxiety resulting from anticipating anaesthesia, its effect and possibility of death, and the fourth component, anxiety resulting from the possibility of cancer and other unexpected events. The description for each situation and some examples of the actual stimuli are shown in Table 5.1.

TABLE 5.1: Description of the SPAS Items

Component 1: Control of Environment	Component 2: Pain	Component 3: Anaesthesia and death	Component 4: Cancer and uncertainty
S1.1 Impression of admission period.	S2.1 Anxiety resulting from hearing others experience of pain.	S3.1 Anxiety when realizing the old patient next doors death.	S4.1 Anxiety associated with possibility of cancer.
S1.2 Anxiety when the doctor stated that surgery would be necessary.	S2.2 Anxiety from not being able to control pain.	S3.2 Anxiety of being "unable to breathe" (an open gate to death).	S4.2 Anxiety associated with uncertainty in medical diagnosis
S1.3 Anxiety resulting from the responses of the family members,	S2.3 Anxiety of being "forced" to accept pain.	S3.3 Anxiety of "being -not being" in the operating room environment.	S4.3 Anxiety of not being informed about possible loss of an organ of the body.
S1.4 Anxiety resulting from hospital procedures.	S2.4 Anxiety resulting from past experience of pain.	S3.4 Anxiety of "being-not being" associated with anaesthesia.	S4.4 Anxiety from anticipating loss of job.
S1.5 Anxiety resulting from having ones privacy interfered with by other patients.	S2.5 Anxiety associated with experience of pain.	S3.5 Anxiety about being put into a category concerning with "sickness and death".	S4.5 Anxiety resulting from possible association between present surgery and previous stressful life events.

The following exerpts are some examples of SPAS situations:

S1.1 I waited for the doctor in his room. It was gloomy and the room was very small. I was alone.

S2.1 The patient next to me woke up during the night. He had been dreaming that someone was making a cut through his body, "It was very painful for me, even though it was only a dream, but it is really going to happen to you.

S3.1 The man in the next room died last night. I heard someone say "he is too old for that type of operation" and I thought of myself.

S4.1 The doctor said they would have to do a tissue "biopsy" on me, something about screening for cancer.

(2) Responses: There were 10 modes of responses in the SPAS. The first 5 were classified as physiological and based on the concept of stress responses under the alarm reaction as conceptualized by Selye (1956). The selected physiological responses were an increase in heart rate, a decrease in saliva secretion, sweating, interference of nerve supply to gastrointestinal system and interference with normal muscle tissues. The other 5 modes of responses were classified as psychological based on the concept of psychological stress as presented by Lazarus (1966); Appley and Trumbull (1967). The selected responses were aggression, projection, seeking for outside help, frustration and the subjects actual perception of such events. Opportunity for subjects to add an additional mode of response was provided by an open ended

item. However, this additional response was not included in total scoring as most subjects tended to repeat or express their responses similarly to the selected ten modes of responses. Thus, these ten modes of response can be seen as an appropriate representation of the range of subject responses.

(3) Additional questions; There were two questions aimed to evaluate the degree of imagination developed in each subject and to measure the occurrence of such situations in their part experience. It was hypothesized that these two variables might influence the subject's pattern and degree of responses, thus affecting their anxiety level.

The SPAS was a self-administered paper and pencil instrument. Instructions for completing it appeared on the front page. In the actual procedure, the nurse investigator read the instruction along with the subject and explained if any part was not clear to the subject. The subject then began working on the test under supervision. Instruction and explanation would be given only in terms of the meaning of the term to avoid any interferences with the subject's degree of responses, the nurse investigator would leave the patient and come back to collect the completed test, usually 3-4 hours before the start of the scheduled teaching session for the experimental group, and 1-2 hours after the SPAS was given to the control group patients. Time used in completing the scale varied from one individual to the other. The average time was 30 minutes.

Test for appropriateness of the SPAS: The SPAS was first tested against three different groups of subjects prior to the actual experiment. The first group comprised of 7 subjects, all were registered nurses and students studying toward a degree in nursing studies. The second group consisted of 5 surgical patients awaiting for surgery the next morning. The last group consisted of 5 non-nurse and non-student subjects. The group of nurses acted as a panel investigating the structure, content and presentation of the test while the other two groups were subjects to be tested. Each component of the SPAS was criticized by the panel members. The instruction and some items were modified in such a way that they could be readily understood. Finally, each SPAS items were noted by the panel members. The result for the group were; the mean degree of imagination was 71 and the average total score was 449.

Then, the SPAS was subsequently administered to the other two groups. Most subjects were able to identify the selected situation and modes of responses. The degree of imagination was high in both groups. Thus, in terms of content and structure of the SPAS, it appeared to be a suitable tool for its intended purpose of measuring presurgical anxiety.

(b) Objective measurement of anxiety: three selected physiological indicators

In combination with the SPAS, three physiological indicators namely, systolic blood pressure, pulse rate and respiration rate are selected as objective measures of anxiety. These three variables have been accepted as appropriate indicators of stress by various authors in the nursing literature (Elms, 1964; Graham and Conley, 1961; Johnson, Dabbs and

Leventhal, 1970; Wolfer and Visintainer, 1975). The primary criteria and the method of obtaining data are as follows:

(1) The blood pressure, pulse rate and respiration recorded on admission to the ward were used as the baseline dats.

(2) subsequent observation including

(a) the blood pressure, pulse rate and respiration rate as taken immediately prior to the time of surgery either by an anaesthetist or ward staff,

(b) any records of blood pressure, pulse and respiration rate on arrival, during and before leaving the revovery room.

(c) if continuing after the subject was back in the ward, then observation of blood pressure, pulse and respiration rate taken between 4-6 p.m. of each hospital day would be used, thus avoiding the possibility of spontaneous variations over time.

These raw data were then subjected to a second set of criteria and scored as followed:

(1) an increase or drop of 10 mmHg of systolic blood pressure, 10 points in pulse rate and 5 points in respiration rate were recorded as a change (+ or -),

(2) any increase or drop less than 10 mmHg in systolic blood pressure, 10 points in pulse rate and 5 points in respiration rate were regarded as "no difference (0)",

(3) if such data were not available in the patient's record (either not being recorded or not being taken), it was presumed that the patient's level of blood pressure, pulse and respiration rate had not deviated from the baseline data. Thus, it would be regarded as "no difference (0)" for that particular hospital day.

Instruments and methods used to record the selected indicators were a stethoscope, and sphygmomanometer (the procedure recommended by the American Heart Association) for measuring brachial artery blood pressure; the basic nursing procedures were used for obtaining radial pulse rate and respiration rate. The accuracy of these data was dependent on the hospital staff. Originally it was thought that the nurse investigator could record vital signs, but because of difficulties with respect to timing and the possible effects on the patient's perception of the situation, it was decided to obtain the data from a secondary source, that is, patient's records.

For the purpose of this study, a systolic range of ± 10 mmHg, ± 10 points range of pulse and ± 5 points range of respiration rate were considered as adequate allowance for an observer error, and for extra subject fluctuation overtime. McBryde (1964) reports that even with diastolic pressure the spontaneous can be as great as 25 mmHg in some instances. Pulse rate is also subjected to wide fluctuation due to the great lability in the neuro circulatory system. However, the possibility of wide variation of blood pressure and pulse rate was reduced by excluding patients with known neurological, renal and cardiac diseases and by specifying a standard setting time on recording.

5.7.2 The Patient Condition Evaluation Scale

(PCE: Appendix 5.2)

Description: The Patient Condition Evaluation Scale was developed for use as an indicator of patient condition within the 48 hours following the operation. It was decided to be used by an independent nurse observer who took no part in the experimental procedures but was responsible for patient care in clinical situation. The patient was evaluated in relation to the following aspects:

(a) Physical: condition indicating adequate breathing, sleep, food and fluid intake, mobility and maintainance of physical hygiene.

(b) Sensory: condition indicating pain and freedom from pain, comfort, physical adjustment, alertness to the ward environment and ability to cope with the present environment.

(c) Cognitive-clarity: condition indicating level of understanding of treatment and care given; orientation to time, place and person; reason for being in hospital and ability to explain what has been done to her/him in terms of treatment and care.

(d) Psychosocial: condition indicating patient's mood in the presence of visitors; ability to control and express his emotions; acceptance of being hospitalized; interest in own progress and maintainance of physical appearance.

(e) Communication: indication of free communication to the nurses,

other patients and family; degree of verbal expression and ability to answer questions directly.

(f) Overall evaluation: brief summary consisting of an evaluation of patient condition with regards to degree of wellness, mobility, freedom from pain, physical adjustment and degree of self acceptance.

Scoring: Each item was rated on a five point scale giving a total score of 150 (including the overall evaluation aspect). The reason of adding an overall evaluation apart from looking at the summation score from categories a, b, c, d and e was to check intrarater reliability, i.e., congruency between total evaluation score obtained from category f and total of other subscores would be taken as evidence of consistency in the nurses perception.

Administration of the rating scale: As the scale was used by an independent nurse observer, two levels of nurses were selected, supervising level nurses i.e. registered staff in charge or charge nurse and the second level, bedside care given level; student nurses and enrolled nurses. As most wards, in the present study, used case assignment to patient's allocation, it was not difficult in terms of administering the scale to find out which nurse was responsible for which patient and what particular period of time. The scale was presented to the nurses at both levels usually in the late evening. This was considered the most appropriate time since it was the time the nurses started to write the report (nurses' notes) and it was after a reasonable time of observing the condition of the patients. Therefore, staff were more likely to

concentrate on answering the questions as they were phrased rather than giving predetermined responses. Upon completion, the forms were either handed back to the nurse investigator in person or placed in the ward locker to be collected the next morning.

5.7.3 The Daily Activity Checklist

(DAC: Appendix 5.3)

Description: The content of the checklist form consisted of 30 daily activities. These activities were described in the actual form, e.g. bathing, showering, driving. As this checklist was prepared to be used by the patients to provide a self report and assessment of their own process. The listing of specific activities would enable them to think more directly about actual performance. The 30 activities were categorized into groups, i.e. daily hygiene care, household activities, sleep pattern, work or job associated-activities, leisure and past time activities. The blank space was provided under the last group of activities under the heading "others you may add", so that the patient could add more activities as they wished.

Apart from the checklist, both groups of patients, the control and experimental groups would receive an additional questionnaire which will be discussed in detail later in this section.

Scoring: Each activity was rated on a five point scale (0-4) ranging from restricted (0), extremely difficult (1), very difficult (2), a little difficult (3) to no difficulty which was given the highest score at 4, and giving a possible total score of 120. In case of an activity which the patient does not normally do, the respondent was instructed to

strike it out. The total score for that particular item would remain at 4. In case of an additional activity by patients, no extra score would be added to the total score (120), but it was taken into consideration as a supplementary to enrich the nurse investigator's knowledge of the patient's condition.

Administration of the follow-up questionnaire and check list:
The questionnaire and checklist were mailed to the patients after the four weeks of being discharged from the hospital. It was an attempt to compare how patients in each group coped and how rapid they were in resuming their daily living activities. By means of self assessment, the patients reported the way they viewed themselves. The questionnaire and checklist covered both physiological and psychological (welfare) aspects of their condition.

5.7.4 The Overall Evaluation Form

(Appendix 5.4)

This form was developed in order to obtain data from another secondary sourse i.e. patient records. The following information about patients was collected:

(a) Demographical data: e.g., age, sec, occupation, marital status.

(b) General information related to hospital admission, e.g. previous admissions, date of admission and discharge, diagnosis and operation, type and date of operation.

(c) Term of operation is; duration of the actual operation and time spent in the recovery room.

(d) Period of significant events occurring during the postoperative period: e.g., pain and selected physiological and psychological indicator of anxiety.

Indicators such as complaint of pain and analgesic consumption were recorded each day. Each day was counted from 7 a.m. to 7 a.m. the next morning, that is, the day of operation extended until 7 a.m. the following morning from which time the beginning of the first postoperative day was counted, and so with each succeeding post-operative day.

Other data obtained included general description of patients as perceived by the nurse investigator during the period of observation. These included such things as physical appearance, communication pattern, problems and other profiles that were relevant to patient's physical recovery and his welfare.

Physiological and psychological indicators taken from the records were quantified by counting number of times they appeared on the nurses' records in each day. Exceptions were those of blood pressure, pulse and respiration rate which were simply taken as they were, and then examined later according to the criteria as stated in the previous section of this chapter.

5.7.5 Additional questionnaire

(Appendix 5.5)

Six questions were developed and mailed together with the Daily Activity Checklist to patients after the four weeks of discharge. The experimental group patients were asked two more questions concerning their opinions about the usefulness of the booklet and the structured preoperative teaching programme. In the six general questions, the first two concerned with the time before resuming work, while the third concerned with difficulty in adjusting to daily activities. This particular question was used in conjunction with the Daily Activity Checklist (DAC) score. The fourth and fifth questions concerned adequacy in preparation for discharge, the most helpful person in preparation for discharge, and events in hospital which patients remembered most clearly. Finally, patients were asked about how they felt about themselves at that moment. This question was used as an indicator of the patient's psychological state at that time.

5.8 The Structured Preoperative Teaching Programme

5.8.1 Preparatory phase

Prior to implementation of the structured preoperative teaching programme, it was necessary to (1) define and describe the programme for the information of the hospital staff and to gain their cooperation, (2) formulate a teaching plan which delineated the content and process of preoperative teaching, and (3) develop teaching aids for use in the study and which could be used later by hospital staff.

To accomplish these preparatory steps. first the Director of

of Hospital Nursing Service and all the surgical supervisors including operating theatre supervisors and surgical ward charge nurses were informed of the study. It was agreed that the study was to be carried out in all surgical wards, excluding orthopaedic wards and as the programme would be beneficial to the patients, the hospital staff would encourage as many patients as possible to join the programme, although the final decision rested with the patients themselves. The senior surgeon was informed and so were all surgeons in charge of each surgical wards. Most involved in the study admitted the lack of preoperative teaching in their wards and were very enthusiastic about the proposed programme. Agreement was reached on the premise that preoperative teaching is one of the nurses' important functions and responsibilities.

To accomplish step two, the nurse investigator formulated a teaching plan based on the principles presented by Pohl (1973). From those principles, specific teaching actions were derived as follows:

i. Analysing the needs and problems of the learners (patients) before attempting to guide.

ii. Give an orientation type of information in general in the initial phase of teaching.

iii. Encouraging learners (patients) to share and discuss with each other their feelings toward surgery.

iv. Encouraging learners (patients) to learn by means of self directed-activities and emphasize (demonstrate) the importance of self care in the convalescence and subsequent period.

The booklet "Preparation for Surgery: General Information for Surgical Patients". It was developed to encourage self learning activities, to serve as the means of providing information and also as a guideline for hospital staff. The information in the booklet was initially gathered from related literature then was circulated among surgical supervisors and charge nurses for comments[1]. Their comments led to some minor revision before printing. The final booklet (appendix 5.6) contained the following information:

- general policy of the hospital
- understanding surgery
- admission to the hospital
- patient's room and facilities
- physical preparation
- preoperative procedures
- the importance of anaesthesia
- recovery room
- reducing and preventing pain and postoperative
- complications
- postoperative exercises and early ambulation
- care of wound
- anticipating time of discharde
- maintainance and getting back to the routine way of life
- self care i.e. personal responsibility for health
- common terms used in the surgical ward

[1] One postgraduate student who at that time worked as a part time surgical ward supervisor also took part in this process.

As it was presumed that familiarity with the environment and process that is likely to be experienced by each individual is necessary, it was decided to use an audiovisual aid to help the teaching session. This also would be beneficial to both nurse teacher and patients in terms of the content consistency and the motivation to learn. Since suitable teaching aids were not readily available, it was necessary to develop one. It was decided to use a sound and slide presentation. The equipment was simple to operate, easy to transport and could project a clear picture on the wall, thus avoid the need for transporting a screen. In developing the slides, organization and instruction for each slide were examined by the senior surgical supervisors, the operating theatre supervisors, and charge nurses and by the nurse investigator as well until it was judged to be appropriate.

The slide programme (appendix 5.7) consisted of 12 slides, each encased in a plastic disc and set in a plastic oblong cartridge which was inserted into a projector. As each slide was being projected, the record was played. The projector was a separate machine from the record player, needing to be operated by hand in synchrony with the recording. However, the process proved to be very simple.

The slide programme contained the information about physical preparation, usual events of the night before surgery, the day of surgery as well as information about anaesthesia, operating and recovery room. Instruction in the slides was similar to the booklet, thus it reinforced what the patient had read from the booklet, but its content was more specific.

In the final stage before implementation, the teaching programme was tried with a group of preoperative patients and also presented to a group of nursing supervisors for comments until it was found to be appropriate both in terms of content and procedure. There was an evidence in the pilot group patients that sex difference might play a major role in the process of group interaction.

5.8.2 Implementation phase

All patients who met the requirements of the study, during September and October, 1979, were assigned to the experimental group. Patient teaching was carried out in the evening before surgery, and the session was conducted by a research assistant working on a voluntary basis. The research assistant was a registered nurse in her final year of a bachelor degree in nursing studies. The author acted as a co-leader of the group as well as a participant observer. The booklet was distributed to subjects soon after admission to the ward. Time for the group session was limited between 30-45 minutes (6.00 p.m. - 6.45 p.m.), so that it would not interfere with the visiting time. During the half hour prior to the actual teaching time, the leader and co-leader (research assistant and the author) conferred about each patient's concern and needs, and what information should be added or emphasize according to those needs.

5.9 Procedures

5.9.1 The experimental group procedures

Shortly after the subjects had arrived in the ward, they would be approached by the nurse investigator who introduced herself in a similar patter as follows:

"My name is ————————. I am a nurse doing some studies about surgical patients. As I understand, you are going for surgery tomorrow. We are interested in how you feel about this matter - going for an operation. Each person may respond differently but we are interested in how you feel in your own experience. I have a list of questions (showing SPAS) which I hope you will not mind answering".

If the patients agreed to participate, they would be asked to complete the questionnaire and then are informed about the preoperative teaching programme, its purposes and why it was organized. The subjects then were given the booklet to read and invited to attend the teaching session in the evening. The venue decided upon was that convenient to most patients. The subjects were informed that the teaching session would include a slide show and discussion, and that they could ask questions and discuss any issues which they concerned. Most subjects agreed to participate and were very enthusiastic about the whole programme, except one patient who was suspicious whether it was the hospital requirement should he attend the programme. Explanation was given that it was a co-project between the university and the hospital and that patients did not have to attend unless they wished to do so. The subject, then decided to participate and was satisfied with the programme afterwards.

The evening group sessions were usually held in the ward visitor's room. The group was expected to be small i.e. not more than seven patients. The leader and co-leader attended every session. The group discussion was taped, so that group members responses and group interaction could be examined.

The group leader approached each group with the similar initial statement,

"My name is ————————. We are here tonight to talk about your surgery, but more specifically about you and how each of you feel about your surgery. It is also an opportunity for you to ask any questions or share with us anything that worries you. First of all, we have prepared some slides which tell you the kind of things that will happen to you tomorrow. Before we start the slide show, it may be a good idea if we can take turns to introduce ourselves first ......". After each member took turn to introduce themselves, the slide show began.

The slide show was followed by the health teaching and group discussion. The discussion was initiated and carried on by the group and the content of the discussion may vary from group to group. However, it was anticipated that there are common elements shared in each group session. The four stages of the group process are:

(1)) Health teaching. The group leader assured the patients that they could have an active role in their own care. She would suggest things that they could do to promote their own recovery e.g. post-

operative exercises. She would reinforce some information in relation to the booklet and slides.

(2) Orientation type of information. This type of information, e.g. hospital procedures was prevalent in most teaching sessions. Mostly, the patients initiated this type of discussion. The nurse encouraged any quiet members of the group by assisting them to clarify their cognitive understanding.

(3) Request for knowledge. When the group member became familiar and more comfortable with the group, they tended to request new knowledge especially that relating to themselves. The patients would be encouraged to share what they know with each other, and the nurse teacher enhanced their responses with additional pertinent information. At times, she clarified the point and corrected the misconception.

(4) Discussion of feelings about surgery. Achievement of this phase was seen as one of the main objectives for the teaching programme. When patients shared their feelings concerns and experiences, the nurse teacher assisted them in exploring these concerns and supported them when necessary.

At the end of the session, the group leader would thank the patients for coming and for their participation, and wish them the best for the forthcoming events (summary of steps in teaching-learning activities was shown in appendix 5.8).

Manipulation of the group composition

One of the twelve learning principles as presented by Pohl (1973) stated that "effective learning requires active participation". If an individual is to learn, he must be actively involved in the learning process. The function of the nurse in this case is to provide an opportunity for participation and to encourage the learner to take advantage of them.

Unfortunately, in the area of preoperative group teaching, group composition as a learning variable has not been researched. Therefore, the question was taken up in the present study. In this particular investigation, it was assumed that patient participation, as indicated by degree of patient interaction with other members of the group, is an important part in the learning process.

The composition of the group was manipulated so that there would always be at least one group member with previous experience of surgery. If the experimental subject for a particular session did not include such a person, then another patient from the ward was introduced into the group. It was assumed that patients with previous experience of surgery could assist the new patients in learning and that they might act as a catalyst to the group interaction. Each group consisted of:

(1) experimental patients either with or without any previous experience of operation or hospitalization.

(2) other patients in their convalescence period who were invited to join the group or who requested to join the group, and

(3) the group leader (the research assistant) and the co-leader (the author). Both the leader and the co-leader wore casual dress anticipating that the absence of uniform would help to counter any stereotyped views of nurses that patients mught hold.

Two aspects of the group function were included in the analysis of group sessions, the structure (sociometric) and the content (interactive). The main variables involved in manipulating group composition were type of operation, nature of illness and sex. Pilot work already undertaken suggested the relevance of sex as a variable affecting reactions to stress. As a discrete variable sex is readily manipulated, so it was decided to examine the effect of the sex structure of the group on the degree of member participation (or interaction).

Sociometric measurement was modified from Bales' method of recording (Bales, 1970) and Murray (1956). For original Bales' method of recording, the unit of interaction recorded was a single speech with the additional property that for every 15 seconds a speaker continued, the act was rescored. Rescoring the acts every 15 seconds was imposed so that the number of scores for a person reflects the time he takes up in participation. In his study the data was taken from verbal communication i.e. when a member spoke and to whom he spoke. The degree of group interaction were based on the unit of interaction i.e. single speech (or statement) made regardless of time factor.

Interactive measurement, the analysis of the content of the verbal interaction, was based on Murray's method (Murray, 1956). The criteria for content analysis are shown in appendix 5.9. In brief,

there were three major categories of analysis, the positive, negative and neutral aspects. The positive aspects concerned with expressions that were likely to lead to learning, e.g., expression of needs for orientation type of information, requesting of knowledge, sharing of health knowledge and discussion of feeling about surgery. Negative aspects were resistance to participate, hostility whereas neutral aspects were indifference and evidence of passive learning (see appendix 5.9 for details).

5.9.2 The control group procedures

Control patients were those admitted during October and November, 1979. This was after the experimental group in order to avoid cross contamination from experimental subjects sharing their experience with other patients. The control group received no nursing intervention beyond that routinely provided by hospital nursing staff. This routine nursing care was received also by the experimental patients. It consisted mainly of "task-oriented" physical preparation, although it might include as well instructions for coughing and deep breathing exercises. Preparation provided by the regular hospital staff did not include the group approach utilized by the nurse investigator.

The summary of the actual procedures for both groups was shown in Table 5.2. The data collection process was divided into 5 subphases:

Table 5.2: Illustration of the Experimental and Control Group Procedures

	Admission phase	Assessment phase	Input-implementation phase	Evaluation phase	Follow up phase
EXPERIMENT	Routine Hospital Admission procedures	(1) general information obtained from the admission office in terms of age, sex, marital status, diagnosis and type of operation, ward allocation. (2) approaching the subjects' administration of SPAS (preoperative). (3) resulting from (2), discussion between the group leader and co-leader prior to the teaching session of particular issue that was to be brought up in the teaching apart from the "set topics" with reference to each patient's needs and problems.	(4) the booklet "Preparation for surgery" was given to the patients. (5) the evening and teaching session between 6. p.m. - 6.45 p.m. on the day before the operation day.	(6) Use of independent nurse observers during the 48 hours post operation to evaluate the patient's condition. (7) administration of the postoperative SPAS (selected four highest score items) (8) collecting of physio-logical indicators in each post operative day.	Administration of DAC and questionnaire on the fourth week after discharge from hospital.
CONTROL	Routine Hospital admission procedures	(1) general information obtained as above (2) approaching the subjects administration of preoperative SPAS.	(3) Hospital routine for pre-operative patients.	(4) use of independent nurse observer during the 48 hour post operation to evaluate the patients' condition. (5) administration of the postoperative SPAS (Selected four highest score items). (6) collecting of phydio-logical indicators in each postoperative day.	Administration of DAC and questionnaire on the fourth week after discharge from the hospital.

5.10 Data collection

Data collection took place over the period of four months from September to the end of December. The nurse investigator had access to all the patients' records. Thus, apart from the daily collecting data from the patients' records in the ward, records were reviewed later in the Medical Record Department, in order to recheck for the accuracy and to obtain missing data.

The return of the DAC and questionnaire was satisfactory for the experimental group (26 out of 30, or 86.67% return). The number of questionnaires initially returned was very low in the control group (16 out of 28)[1], so a reminder and another copy of the questionnaire were sent to the non-respondents in early January. This increased the total return to 22 out of 28 (78.5%) which was decided to be sufficient for a comparison study.

5.11 Analysis of data

Statistical Package for the Social Sciences (SPSS), a system of computer programs developed by Nie, Hull, Jenkins, Steinbrenner and Bent (1970, 1975) was used in the data analysis process. The data was processed on B6700 Burrough computer at Massey University.

When the data were collected, they consisted of the overall data collection sheet, preoperative and postoperative SPAS, DAC and questionnaire

[1] Two of the control group patients died before the four weeks period, one at hospital, one immediately after the second admission to the hospital since the condition was deteriorating.

sheets and the PCE sheets for each subject. These data were then transcribed into large coding sheets (an example shown in appendix 5.10). Several data files were created for convenient processing of data.

CHAPTER 6

THE EFFECT OF GROUP COMPOSITION ON MEMBER PARTICIPATION IN THE TEACHING-LEARNING PROCESS: AN ANALYSIS OF THE GROUP SESSIONS

A brief review of the small group developmental process will be presented in the first part of this chapter. The apparent effect of sex composition of the group on member participation will be reported followed by discussion of its implication for practice.

6.1 A Review of Small Group Development Process

Duration of group life can be expected to influence amount and rate of group development (Tuckman, 1965). Being a group with a short life span, it can be anticipated that a group formed for purpose of preoperative teaching will show only the early stage of the group developmental process. Consequently, the group developmental process described in the literature (Bales, 1950; Bennis and Shepherd, 1956; Tuckman, 1965; Martin and Hill, 1957) is of limited relevance here.

In the initial stage, members test the group and leader to discover how they will respond to various statements. Grotjahn (1950) refers to an initial period of orientation and information exchange while King (1959) labels initial testing and orienting behaviour as acclimatization. Powdermaker and Frank (1948) and Abraham (1949) described the initial period as one of orientation and testing where group members attempt to relate to the leader and to discover the structure and limit of the group session.

Thrope and Smith (1953) and Osberg and Berlinger (1956) in therapy groups with hospitalized narcotic addicts, described the initial stage of resistance, silence and hostility followed by a testing period where patients attempt to discover what behaviours the therapist deems acceptable. Shellow, Ward and Rubenfeld (1958) who worked with institutionalized delinquents described two such stages of resistance and hostility preceding the testing stage. Tuckman (1965) called this early stage one of testing and dependence.

In this early stage, there are always attempts to discover the nature and boundaries of the group task (Tuckman, 1965) through discussion of irrelevant and partially relevant issues (Bion, 1961; Martin and Hill, 1957), discussion of peripheral problems (Stoute, 1950), discussion of symptoms (Bach, 1954), or grouping about the institutional environment (Shellow, et al., 1958).

Martin and Hill (1957) presented six phases of group development and suggested that individual "unshared behaviour" is a common characteristic of the initial phase. In this time groupness is minimal. There is no identification of the group as such. There may be some private and egocentric conception about the group being a source of personal advantage. In this phase, the only functional evidence of groupness is the contrality of the leader who provides a focal point around which the members tend to revolve in their private orbits. Similar to what Martin and Hill labelled as "unshared behaviour", isolation and dependence on the leader, Consini (1957) identifies "hesitant participation" as the main feature in the initial stage of the group process.

In the group where tasks are defined, members attempts of orientation toward the tasks will be more direct e.g. attempts to define the situation (Powdermaker and Frank, 1948), mutual exchange of information (Grotjohn, 1950). There may be attempts to establish a relationship with the leader through rapport and confidence (King, 1959). Consini (1957) considered attempts to overcome suspicion and fearfulness of a new situation as direct means to task orientation.

To sum up, the initial stage in the sequence of small group development can be seen as one of dependence-interdependence where dependence-testing-sharing are the main characteristics of the process. However, as those observations were based on the therapy groups where the major concerns were with psychoemotional problems of group members, these characteristics may or may not be so clearly observed in the group sessions of the present study. Marram (1978) considered a group session with presurgical patients as a therapeutic group where it emphasized working with "normal" or basically healthy individuals. Such individuals may suffer from situational crises, that is coming for surgery and being hospitalized, in which certain emotional reactions may be painful and distressing to them. Thus, in this way, he/she may be prone to psychoemotional disturbances unless supported and well informed about the forthcoming events. The primary objective of organizing this type of group is to assist an individual in a situational crises to cope successfully. This type of group deals with "preserving" mental and psychological health of the individual under stress especially resulting from certain physical illness or disturbances.

The group teaching in the present study is claimed to be an educative as well as preventive tool in preoperative nursing intervention. How much learning was achieved with each group is an important issue to examine. At the same time, the degree to which group members can express their problems, fears, uncertainty and feelings openly in the group setting is another point for examination. In this case the basic premise is that the higher the frequency of interaction among members and with the nurse leader, in regard to expressing needs, requesting and sharing knowledge and discussion of feelings, the closer members come to achieving the group goals.

6.2 General Characteristics of the Teaching Sessions

Over a period of six weeks (from mid September to mid October, 1979) twelve sessions were conducted, an average of two sessions a week. A total of forty eight patients joined the session, of whom thirty were experimental patients. For all twelve sessions manipulation of the group composition according to previous experience with surgery was achieved i.e. there was at least one person with previous experience of surgery in each session (see section about manipulation of the group composition, chapter 5). The group members came from all walks of life although the majority were retired persons or housewives. On average, the group consisted of four patients with an average time for the whole session of 19.50 minutes including the actual teaching session which ran for ten minutes. The sessions were held in the evening around 6 p.m. prior to the hospital evening visiting hours.

In terms of type of operation (nature of illness and site of

operation), there usually was a mixture at each session ranging from major to minor abdominal operations to local superficial operations such as excision of breast lump, excision of infected skin lesion. In some sessions there were two or more group members who were having a similar type of operation.

With respect to the selected variable, sex, there were eight homogeneous groups (female or male group) and four heterogeneous groups (mixed group)[1]. The general characteristics of the groups in terms of time spent in each session, number of group members and the age range were shown in Table 6.1.

[1] The category was based on the patients' characteristics excluding the leader and co-leader who were both female.

Table 6.1 Group characteristics according to sex and age difference (time spent for each session included)

Number of group session	Type of group	Time used (mins)	Number of attendance *		Age range (yrs)			Average age
			Experimental	Non experimental	Highest	Lowest	Diff.	
1	Hetero.	20	2	3	68	43	25	55
2	Hetero	25	2	4	68	28	40	39
3	Hetero	25	3	1	53	16	37	39
4	Homo.	15	4	1	29	16	13	24
5	Homo.	15	3	0	53	16	37	42
6	Homo.	15	2	3	59	18	41	38
7	Homo.	15	5	0	75	16	59	34
8	Homo.	14	3	0	51	25	27	41
9	Homo.	40	2	1	27	23	4	25
10	Homo.	15	1	2	68	29	39	48
11	Hetero.	20	1	3	44	17	27	30
12	Homo.	15	2	0	72	27	45	49

* The number of patients attending ranged from 2 to 6 patiets per session.

6.3 Structure of Group Interaction Process: Sociometric Measurement

In examining the group interaction by looking specifically at the two categories of verbal interaction, patient-to-patient and patient to nurse, it was found that interaction between patient and nurse was higher than patient and patient. From Table 6.2, only 19.81% of the total patient statements were between patient and patient, as opposed to 80.19% being made directly to the nurse. This reflects identification of the nurse as leader of the group and recognition of her role as information giver.

Table 6.2 Sociometric structure of group verbal interaction in the twelve sessions

Number of Session	Total interaction	Categories of interaction	
		patient to nurse	patient to patient
1	51	42	9
2	37	37	0
3	131	111	20
4	24	24	0
5	71	71	0
6	10	10	0
7	10	10	0
8	94	78	16
9	193	116	77
10	43	44	3
11	103	87	16
12	82	54	28
total	853	684	169
%	100%	80.19%	19.81%

Comparison of interaction structure (i.e. who was involved in the interaction) was made between heterogeneous and homogeneous groups. From Table 6.3, the results appeared to be that in the homogeneous group setting, the degree of patient-to-patient interaction was higher than in the heterogeneous group setting (23.35% opposed to 13.87%).

Table 6.3 Sociometric structure of homogeneous-heterogeneous group interaction

(a) Homogeneous group*

Session No.	Total number of interaction	Categories	
		Pt - nse	Pt - Pt
4F	24	24	0
5M	71	71	0
6M	10	10	0
7M	10	10	0
8F	94	78	16
9F	193	116	77
10M	47	44	3
12F	82	54	28
Total	531	407	124
%	100	76.65	23.35

* The letter "F" and "M" indicated that the group was either all male or all female.

(b) Heterogeneous group

Session No.	Total number of interaction	categories	
		Pt - nse	Pt - Pt
1	51	42	9
2	37	37	0
3	131	111	20
11	103	87	16
total	322	277	45
%	100	96.03	13.97

There were two other factors that may have affected interaction structure in each session. One was the time factor (average time used = 18.00 and 22.50 minutes in homogeneous and heterogeneous group respectively), the other factor was the number of attending (mean = 3.62, 4.45 patients per session in homogeneous and heterogeneous group respectively). To stabilize such factors, each type of interaction was calculated as a proportion of the total interaction which was equal to 1. Hence, x^2 test for the significant difference between proportions was applied to the data. It was found that the difference between the two groups in terms of patient-to-nurse and patient -to-patient interaction were significant at better than 1 percent level (x^2 calculated = 11.13 whereas x^2 required = 6.64 at .01 level df = 1). This indicated that there was a significant difference in the type of patient interaction between homogeneous and heterogeneous group.

See addendum in rear pocket

The patients in homogeneous group interacted with one another more than patients in the heterogeneous group (23.55% opposed to 13.97%). It may be that patients were more relaxed and felt free to converse with the group of their own sex.

Male homogeneous and female homogeneous groups were compared also. From Table 6.3 (a), there were four male groups and four female groups. Comparison of the actual and percentage of patient interaction was shown in Table 6.4. The previous x^2 procedure was applied. It was found that there was a significant difference between the two groups in the types of interaction, in the direction that members of all male groups had less interaction among themselves in the group of their own sex than female patients. The difference was significant at better level than 1 percent level (x^2 estimated = 22.89 whereas at .01 level, df = 1 , x^2 required = 6.64).

See addendum in rear pocket

Table 6.4 Comparison of sociometric structure of interaction between female and male homogeneous group.

Group	Categories of interaction				total	%
	Pt - nse		Pt - Pt			
	actual	%	actual	%		
Female homogeneous	272	69.21	121	30.79	393	100
Male homogeneous	135	97.83	3	2.17	138	100

Figure 6.1 gives an overall picture of the sociometric interaction structure in three groups with different sex composition. Member

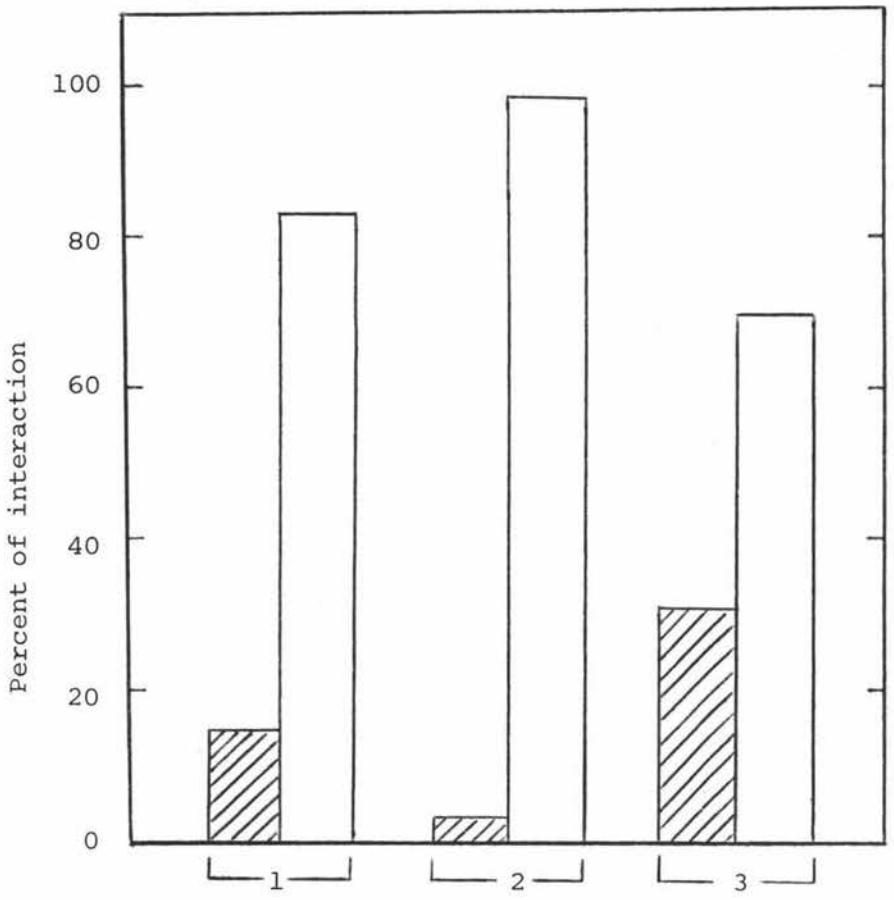


Figure 6.1 Illustration of differing pattern of interaction within female and male homogeneous groups and heterogeneous groups.

1 = Heterogeneous group

2 = Male homogeneous group

3 = Female homogeneous group

patient to patient interaction

patient to nurse interaction

interaction was greater in the female homogeneous group. The all male groups had the least interaction among members, but would interact directly with the nurse.

It can be concluded that the sex composition of the groups affected the group interaction. Patient-to-patient and patient-to-nurse interaction were different in the three types of group, male, female homogeneous, and heterogeneous.

6.4 Content Analysis of the Group Discussion: Interactive Measurement

Each session was taped. The presence of the tape recorder was obvious to the patients although they were not informed directly that the session would be taped[1]. The tape was then transcribed and analysed according to the criteria in appendix 5.9. One objective of the analysis was to examine whether or not the teaching session had achieved its purposes i.e. how much patients were able to share with the group and in what ways. The analysis for the total group is shown in Table 6.5.

[1] This was done in order to prevent any interference e.g. hesitation to interact etc. The tape recorder was used in the first part of the session i.e. with the slide programme, thus its presence and manipulation seemed to be acceptable to the patients.

Table 6.5 Content analysis of the overall patient interaction in the twelve group sessions according to the selected categories

Categories \ Session	1	2	3	4	5	6	7	8	9	10	11	13	Total interaction	%
A. Positive aspect														
1. Expressing needs: for orientation type of information.	5	0	16	0	6	0	0	1	3	1	0	1	33	3.87
2. Requesting knowledge.	2	9	8	6	3	1	5	3	18	7	2	5	69	8.08
3. Sharing health knowledge and health-illness related experiences.	5	10	25	0	6	0	2	19	63	17	31	8	186	21.81
4. Discussion of feelings about present-past surgery and hospitalization.	23	3	39	6	34	2	0	32	64	8	355	37	283	33.81
B. Negative aspect														
5. Resistance to learning.	0	1	0	1	17	4	0	1	0	2	12	17	55	6.45
C. Neutral aspect														
6. Indifference and passive participation .	16	14	43	11	5	3	3	38	45	12	23	14	227	26.61
Total interaction	51	37	131	24	71	10	10	94	193	47	103	82	853	-
%	5.98	4.34	15.36	2.81	8.32	1.17	1.17	11.02	22.62	5.51	12.08	9.61	-	100

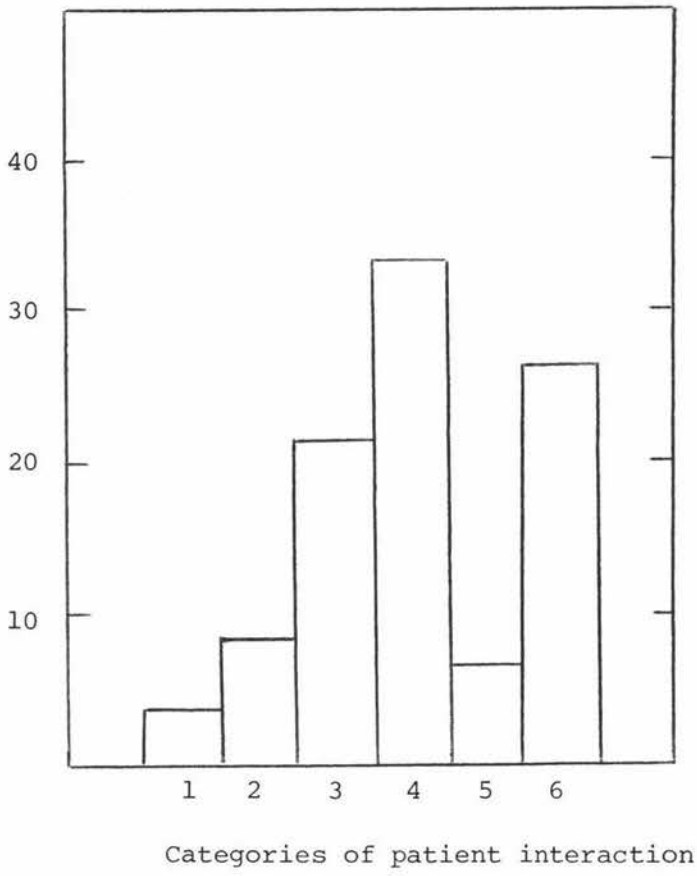


Figure 6.2 Analysis of the overall patient statements according to the six selected categories as followed:

1 = Expressing needs for orientation information

2 = Requesting knowledge

3 = Sharing health knowledge and health and illness-related experience

4 = Discussion of feelings about the past and present operation and hospitalization

5 = Resistance to learning

6 = Indifference or passive participation

In the overall analysis of the group sessions, discussion of feelings about past-present surgery and hospitalization ranked highest followed with neutral interaction and sharing of health knowledge and health-illness related experience.

The proportions between positive:negative and neutral types of interaction were 11:1:5 (571:55:227). Hence, the group teaching sessions had served to encourage patients to express their feelings and to share experiences. The evidence of resistance to learning was very low.

Having established that group composition influenced the amount and direction of interaction with the group, further investigation was done to examine whether differing group composition might affect the ways in which patients interact within the group. Comparison between homogeneous and heterogeneous group interaction is shown in Table 6.6.

Table 6.6 Actual frequency and percentage of interaction under each category*

(a) Homogeneous group

Categories	Session No.								Total	%
	4	5	6	7	8	9	10	12		
1	0	6	0	0	1	3	1	1	12	2.26
2	6	3	1	5	3	18	7	5	48	9.04
3	0	6	0	2	19	63	17	8	115	21.66
4	6	34	2	0	32	64	8	37	183	34.46
5	1	17	4	0	1	0	2	17	42	7.91
6	11	5	3	3	38	45	12	14	131	24.17
total	24	71	10	10	94	193	47	82	531	-
%	4.52	13.37	1.88	1.88	17.70	36.35	8.85	15.45	-	100

(b) Heterogeneous group

Categories	Session No.				total	%
	1	2	3	12		
1	5	0	16	0	21	6.52
2	2	9	8	2	21	6.52
3	5	10	25	31	71	22.05
4	23	3	39	35	100	31.06
5	0	1	0	12	13	4.04
6	16	14	43	23	96	29.81
total	51	37	131	103	322	-
%	15.84	11.49	40.68	31.99	-	100

* Classification of interaction as shown in Table 6.5.

From Tables 6.6.(a) and (b), it appeared that the two groups followed a similar pattern of interaction i.e. sharing of feelings was the most frequent interaction. This was slightly higher for homogeneous groups (34.46% to 31.06%) as also were requests for health knowledge (9.04% to 6.52%).

Within the homogeneous groups more detailed comparisons are shown in Table 6.7.

From Table 6.7, it appears that the two groups followed a similar pattern of interaction, but expressing needs for orientation type of information and also resistance to learning were higher in the all male group, than in the all female group. Further discussion is presented in the following section.

6.5 Discussion of Sex and its Effect on Degree of Interaction, Information Sharing and Resistance to Learning

Sex and its effect on verbal interaction: understanding the group composition and its relationship to the group interaction is essential for examination of the overall group process. Since sex difference was the most clearly distinguished variable, its effects were examined specifically.

In the homogeneous group setting, female patients seemed to be able to express themselves verbally more than male patients although group size may have been an influence here. The average size of the male groups was 4 patients compared to 3 patients for female groups.

Table 6.7 Analysis of group interaction for male and female homogeneous group

(a) Female homogeneous group

Session No.	Categories of interaction*						Total interaction
	1	2	3	4	5	6	
4	0	6	0	6	1	11	24
8	1	3	19	32	1	36	94
9	3	18	63	64	0	45	193
12	1	5	8	37	17	14	82
Total	5	32	90	139	19	108	393
Percentage	1.27	8.14	22.90	35.37	4.84	27.48	100
Rank	6	4	3	1	5	2	-

(b) Male homogeneous group

Session No.	Categories of interaction						Total interaction
	1	2	3	4	5	6	
5	6	3	6	34	17	5	71
6	0	1	0	2	4	3	10
7	0	5	2	0	0	3	10
10	1	7	17	8	2	12	47
Total	7	16	25	44	23	23	138
Percentage	5.07	11.59	18.12	31.88	16.67	16.67	100
Rank	6	5	2	1	3.5	3.5	-

* Classification of each category was shown in Table 6.5.

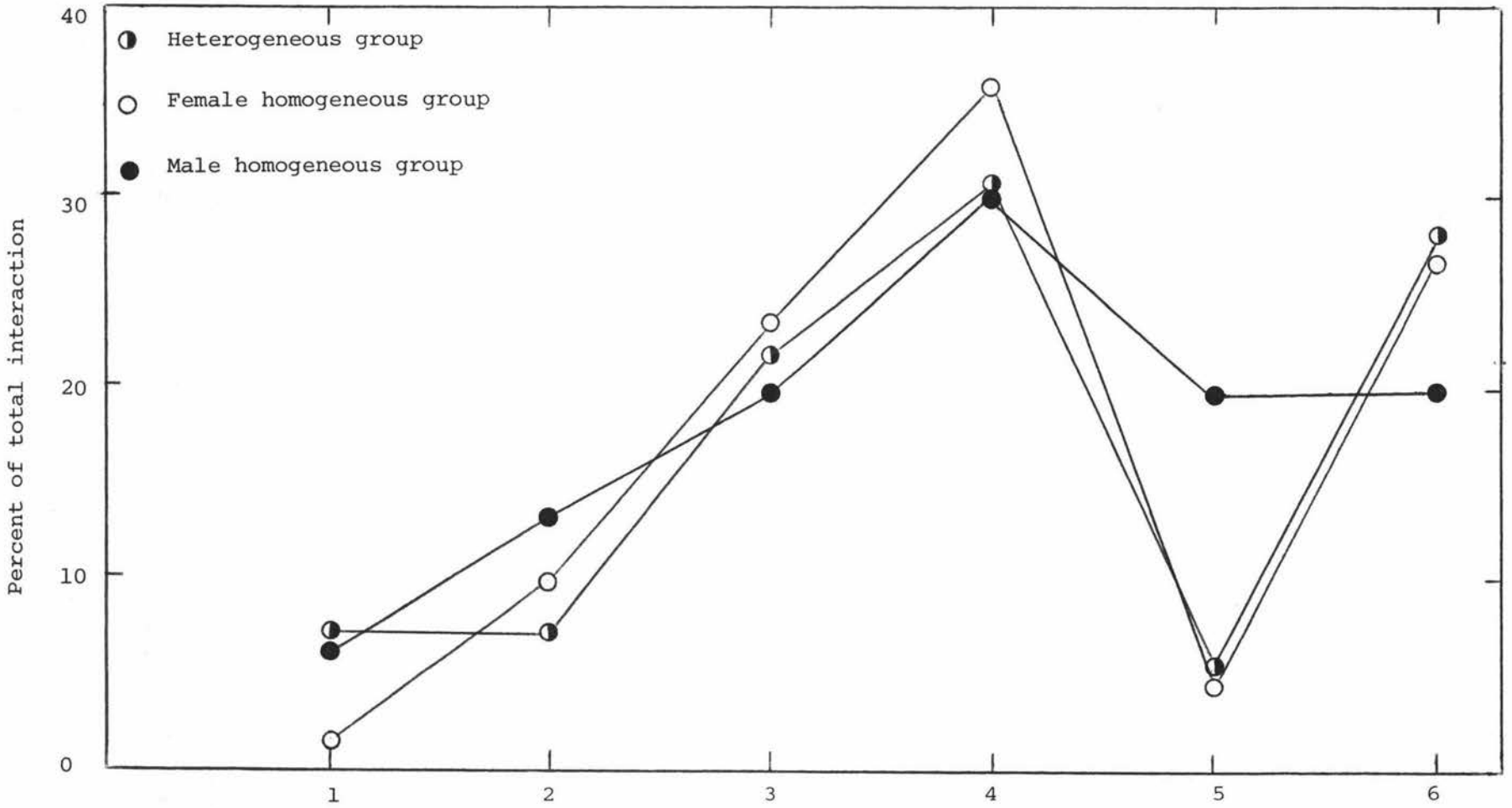


Figure 6.3 Comparison on the pattern of interaction between male and female homogeneous and heterogeneous groups. 1 = Expressing needs for orientation type of information, 2 = Requesting for knowledge, 3 = Sharing health knowledge and health and illness related experience, 4 = Discussion of feelings, 5 = Resistance to learning, 6 = Passive participation.

Patient-to-patient interactions were also higher in female groups. This was apparent particularly in session 9 (appendix 6.1). The group consisted of three women one who was very nervous at the beginning of the session. During the discusion part, with envouragement and support, she was able to express her fear, doubts and concerns with other group members. She admitted that she was "scared". This patient was relaxed and appeared to be comfortable during and after the session. This may be contrasted with Session 7 (appendix 6.1) consisting of 5 male patients where patient initiated interaction (both patient-to-patient and patient-to-nurse) was very low. One patient for cholecystectomy kept to himself and sat quietly throughout the session. On preoperative contact, he stated that there was nothing for him to worry about and he was not concerned about the operation. This patient had some difficulties in his postoperative period and gradually admitted that he was actually worried about his operation. The evidence supported the argument proposed by several authors, as discussed earlier (e.g. Janis, 1958), that if the patient takes a more realistic view, accepts his anxiety and is able to express his doubts, fear and anxiety verbally, then it is likely that he will be more ready to accept an unpleasant experience occurring in the post-operative period. By verbalizing his anxiety, the person makes it possible for support and correction of any misunderstanding to be given by the nurse and by other group members.

Encouragement for patients to talk and discuss particular issues and concerns was provided by the group leader in all sessions. These efforts appeared to be least effective in the male homogeneous groups. In three of the four sessions, there was very little interaction at patient-to-patient level i.e. patients talked to the nurse rather than

to each other. The male patients tended to express their feelings of anxiety etc. more on one to one basis e.g. during contact with the nurse investigator in the preoperative and postoperative period. Some male patients behaved differently in the homogeneous group setting compared to when they were on one-to-one contact, especially in terms of verbalizing their worries, concern or fear. It may indicate that organizing group teaching with patients of their own sex might not be helpful to male patients as this prevents them from expressing, sharing and discussing things which they might have done on a one to one approach. For female patients, having members of the same sex only may prove more helpful, e.g. in session 8 (appendix 6.1) where two female patients shared the "common concern" with one another at a deeper level especially on family matters and relationships with spouses.

In contrast to the limited interaction of male patients in the homogeneous group setting, male patients in heterogeneous groups appeared to be more vocal. For example, in seccion 11 where the male patient acted as a central person in the group.

Information sharing in relation to different group composition:

Sharing of health knowledge and health illness information was more evident in homogeneous groups, particularly in the all female groups. Type of operation may have had some effect on this aspect of group interaction as female patients with a similar operation seemed to "pair" with one another and share information. This was less evident with male patient group. For example, session 7 and 8, in session 7 there were two male patients scheduled for the same type of operation.

Although they were informed by the group leader that their operations would be similar in nature, during the session, the patients only looked at one another without any other responses. In session 8, after being informed that they were having the same operation, the two female patients began sharing experiences about the diagnostic procedures they had been through. The mutual feelings lead to expression of concern for the other member in the group i.e. the two patients asked the third patient directly what type of operation she was going to have and whether she was worried about it or not. The two patients continued to support one-another throughout the whole period of hospitalization. Nothing of this nature happened in the male group.

One can argue that it is more likely for patients coming from the same ward to support one another in the group and to continue in this supportive role than is the case when group members come from different wards. However, this was not always the case. Once relationships between patients were established, these were likely to carry on through the postoperative period e.g. going to visit one another in different wards in the postoperative periods, e.g., appendix 6.1 session 1: A young patient who came into hospital for diagnostic operation of cancer went to visit the older patient who actually had recurrence of simple squamous cell carcinoma admitted for excision of affected skin lesion. During the session, the older patient acted as a "supporter" and shared her experience of surgery with the younger patient; session 3: After this session, during the postoperative period a woman with herniorrhaphy went to visit the other one with cholecystectomy in an other ward and encouraged her to

mobilize by taking turns to visit one another. Hence, being in the same ward may help in terms of establishing the relationships among patients, but it does not necessarily mean that a relationship can not be established between patients from different wards.

One might suggest also that age difference between members could be another factor affecting the type and pattern of group interaction. Yet in session 4 (appendix 6.1) where all five patients were in the same age group, the interaction was low, but this may have been due to the fact that there were two hospital nurses present at the session; thus affecting the group composition. Hence, in this study, the systematic age difference in group composition were insufficient for the effect of the variable to be tested.

Resistance to learning: This was shown in a higher degree in male homogeneous group than in the other two group settings (16.67% of total interaction compared to only 4.04% and 4.84% in the heterogeneous and female groups). The result might be due to the fact that both group leader and co-leader were female and therefore the female patients may have felt more free to verbalize.

There were some differences between the behaviour of a male patient in a homogeneous group and another in a heterogeneous group setting in terms of resistance to learning, even though both had experienced operation and hospitalization several times previously. In the homogeneous group setting, the person shared with the group his experience, but not the feeling toward such experience. The other, in a heterogeneous group shared both with the group. The first one

appeared to resist assimilation of information from the discussion, while the second one picked up relevant information, related to his own experience and shared it with the group. Thus, characteristics of the group setting appeared to influence the reaction of the member toward the whole group session.

6.6 Findings in Relation to Other Studies and Implications for Practice

The findings of this investigation indicate that sex composition of groups affects the type and pattern of interaction among members. Several studies have concentrated on behavioural aspects and findings support the hypothesis that while men and women are equally capable of performing a wide range of activities, their differential socialization leads men to select more of a task emphasis and women to select more of a social-emotional emphasis in both family interaction and in mixed group tasks (Pearsons and Bales, 1955; Strodtbeck and Mann, 1956).

Further studies on sex composition in relation to interaction style were concerned mainly with leadership aspects, e.g. high dominance women will assume leadership over low dominance women, but not over low dominance men (Megaree, 1969). Although men have been found to be less conforming and better problem solvers than women, in a group setting the expression of these traits is affected by sex roles pressures operating in a group setting (Sistrund and McDavid, 1971).

A study conducted by Aries (1976) of interaction pattern and themes in male, female and mixed groups showed similar findings to the

type and pattern of interaction in the present study. Aries' study revealed that there are differences in the characteristic social interaction for men and women in single-sex and mixed groups. differences that reflect the sex role demands of conventional society. Men and women in these groups expressed different aspects of themselves in the content and structure of their groups when interacting with members of the same and the opposite sex. Men had a more personal orientation in the mixed setting, addressed individuals more often, spoke more about themselves and their feelings, while in an all-male setting, they were more concerned with the expression of competition and status. Women in all female groups shared a great deal with each other. In the mixed group, though, women had minimal contact with other women and allowed men to dominate.

In the same study, differences in interpersonal style are further supported by examining the amount of interaction addressed to the group as a whole rather than to individuals. Significantly more interaction was addressed to the group as a whole in the all male groups than in the all female groups. This finding was similar in nature to the finding of types of interaction between patient to nurse and patient to patient in the present study. Significantly more interaction was between patient to nurse (who was used as a means of communicating with the whoel group) in the male group and in the female group (97% and 3% of patient-nurse and patient-to-patient interaction respectively for the male group versus 69% and 31% for the female group). This suggests that the male patients rarely spoke to one another.

In terms of closeness, Aries (1976) found that male patients in an all male group avoid the closeness evoked by pairwise contact, and so they avoid one to one contact. This was evident in session - (appendix 6.1) between the two patients with the same age range and type of operation. Pairing was more evident in a mixed group setting (sessions, 2 and 5, appendix 6.1).

In terms of intimacy and openness, males in the all male group talked very little about themselves, their feelings or their relationship with significant others. On the other hand, in all female groups, members shared a great deal of information about themselves, their feelings and their relationships with others.

The implications of such findings depend upon the purpose for which the group is formed. They appeared to be relevant for preoperative teaching as outlined in this study. However, it has to be pointed out here that sex composition of the group, while it was the one most closely analysed in this study, is not the only factor affecting the group interaction. Age, type of operation and other variables have all to be taken into consideration.

The most favourable group composition that enables members to learn and share with one another tends to be heterogeneous i.e. a mixed sex group with members of different ages and types of operation including different experience associated with operation or hospitalization. A group member with previous experience can stimulate discussion and may act as a group leader at times. Other trends observed concerned:

(1) Age; the older patient in the group appeared to be more egocentric in terms of the content of their interaction. This can distort the group learning process.

(2) Similar type of operation; this did not appear to have any systematic influence in the male groups, but in the female group, it served as a "common core" to the discussion.

(3) Previous experience; preferably there should be at least one person in the group with previous experience of surgery, who can act as a reference person or work in cooperation with the nurse leader. In the heterogeneous groups this role tended to be taken by a male and this may be more acceptable by the group members.

Since it has been accepted that effective learning requires active participation (Pohl, 1973), factors affecting the degree of member participation in the group teaching situation should be identified and understood. In this chapter, type and pattern of patient interaction with respect to group's sex composition has been discussed. Analysis concerned two aspects of the group functioning, namely structural (sociometric) and content (interactive) features of group interaction. The implication for practice is that understanding such affects of group composition with respect to sex and other variables, the nurse may be able to manipulate group composition in order to create an optimal learning atmosphere for each individual member.

CHAPTER 7

RESULTS

In this chapter, the presentation of data had been divided into four major sections. The first section contains sample characteristics i.e. age, occupation, marital status, previous hospitalization and operation, and type of operation. The second section contains the actual findings with respect to the three major groups of criterion measures, welfare, physical recovery and complex criterion measures, In the third section, some additional findings such as attitude toward the structured preoperative teaching programme are presented. In the last section, intercorrelations between the selected variables are shown in specific to the major tool used, i.e. SPAS.

SECTION A

7.1 Sample Characteristics

The total sample was sixty patients, 30 experimental and 30 control subjects. There was an equal number of female and male in each group. An attempt to match control subjects with those in experimental group on the basis of sex was successfully achieved. In each group, the number of female and male subjects was 16 and 14 respectively.

7.1.1 Age:

The average age for the control group was 41.87 years as compared to 38.73 years in the experimental group. The difference was not great and was thought to be within normal limits of sample

variation[1]. However, it may appear as there were more young patients in the experimental group than in the control group (Table 7.1). 53% of the experimental group patients were between 16-29 years of age as opposed to 30% of the same age range in the control group.

7.1.2. Occupation and marital status

The majority of the female subjects were housewives. Among the presently employed sample, half were engaged in agricultural type of occupation e.g. farm supervisor, farmers and the other half were professional workers such as a nurse, an engineer and a university lecturer. There were three students in the experimental group. The majority (75%) of the total sample were married.

7.1.3 Previous hospitalization and operation

In terms of previous hospitalization over 30% of the control group represented no previous hospitalization whereas in the experimental group the figure was 20%. For half of the control group, it was their first operation, as it was for only one third of the experimental group. However, the number of patients having more than one previous operation was higher in the control group (11 out of the total 30 patients as compared to only 3 out of 30 in the experimental patients).

[1] Mean difference of age between the two groups was 3.14. Mode was equal at 26 years.

Table 7.1 Sample characteristics: the control and experimental groups

Characteristics	Control group		Experimental group		Total sample	
	actual frequency	%	actual frequency	%	actual frequency	%
Sex						
Male	14	46.67	14	46.67	28	46.67
Female	16	53.33	16	53.33	32	53.34
Age						
16-29	9	30.00	16	53.34	25	41.67
30-44	10	33.34	4	13.33	14	23.33
45-59	7	23.33	6	20.00	13	21.67
60+	4	13.33	4	13.33	8	13.33
Occupation						
Housewife	16	53.35	13	43.33	29	48.34
Retired	2	6.67	3	10.00	5	8.33
Employed	12	40.00	11	36.67	23	38.33
Student	0	0	3	10.00	3	5.00

Table 7.1 (cont'd)

Characteristics	Control group		Experimental group		Total sample	
	actual frequency	%	actual frequency	%	actual frequency	%
Marital status						
Married	28	93.33	17	56.67	45	75.00
Single	0	0	7	23.33	7	11.67
Widower	2	6.67	5	16.67	7	11.67
Divorced	0	0	1	3.33	1	1.66
Previous hospitalization[1]						
None	10	33.33	6	30.00	16	26.67
One	3	10.00	15	50.00	18	20.00
More than one	17	56.67	9	30.00	26	43.33
Previous operation[2]						
None	15	50.00	10	33.33	25	41.67
One	4	13.33	17	56.67	21	35.00
More than one	11	36.67	3	10.00	14	23.33

[1] Including obstetrics

[2] Excluding normal obstetrics cases

Of the total sample, for 25 out of 60 patients (41.67%), this present operation was their first experience of surgery. The overall sample characteristics are shown in Table 7.1.

7.1.4 Type of operation

For both control and experimental group, type of operation was classified into three groups; abdominal surgery, non abdominal surgery and investigative procedures (appendix 7.1). Table 7.2 shows that half of the total sample were admitted for abdominal surgery (e.g. appendiectomy, herniorrhaphy, gastrectomy) and the remainder came in for other operations (e.g. thyroidectomy, coccygectomy excision of hydrocoele). Differences between the two groups in terms of operation were not great.

Table 7.2 Sample distribution according to type of operation,: the control, experimental and total groups*.

Types of operation	Control		Experimental		Total sample	
	No. of Pt.	%	No. of Pt.	%	No. of Pt.	%
A. Abdominal surgery	16	53.34	14	46.67	30	50.00
B. Non abdominal surgery	13	43.33	14	46.67	27	45.00
C. Investigating procedures	1	3.33	2	6.66	3	5.00

* Details of specific type of operation are shown in appendix 7.1.

SECTION B: FINDINGS

In this section, data are examined in relation to three major sets of criterion measures, psychological welfare, physical recovery and complex criteria. The findings are presented in relation to the specific hypothesis stated in chapter 5.

7.2 Psychological Welfare Criterion Measures

It was hypothesized that the experimental group patients undergoing the structured preoperative teaching programme would:

- report less psychological disturbance in the postoperative period while in hospital
- show less anxiety as subjectively measured by the surgical patient anxiety scale prior to the time of discharge
- show less deviation in systolic blood pressure level, pulse and respiration rate during the time in hospital
- demonstrate a better psychological well being after discharge.

7.2.1 Psychological disturbances in the postoperative period

The evidence of psychological disturbances was taken from the nurses' record in each day of hospitalization for each patient. It was found that there were 12 recorded evidence of psychological disturbance in the control group whereas there were only 4 recorded evidence in the experimental group. However such difference was not statistically significant ($p > 0.20$; details of disturbed behaviour are shown in appendix 7.2).

7.2.2 Anxiety level as indicated by SPAS

The general SPAS which consisted of 20 situations was administered to each patient in the preoperative period. It was used to identify the particular stressors or situations that worried the patient most, as well as to indicate the patient's general level of anxiety at the time. There was evidence that specific situations contributed a great deal to the general level of anxiety (as measured by the total SPAS score). On that basis, it was decided to use only the four highest scored SPAS situations to retest in the postoperative period. These four items were then called the specific SPAS. As each individual reacted differently to the SPAS items presented, the specific SPAS situations differed from one individual patient to another. For each subject, comparison was made between preoperative score and post-operative score of the specific SPAS. With the correlation coefficient of 0.86, it was evident that the specific SPAS reflected general SPAS score, and the former had the advantage of requiring less time to administer.

The difference between means of preoperative and postoperative specific SPAS score was tested. The result was that the control group patient SPAS score remained much the same while the experimental group SPAS score had decreased significantly at 1% level of significance in the postoperative period (Table 7.3).

Table 7.3 Comparison of pre and postoperative specific SPAS score between the control and experimental group.

Groups	Mean Preop.SPAS	Mean Postop. SPAS	Mean difference	Standard deviation	Standard error	t-value
Control	123.24	120.00	3.24	49.03	9.11	0.36[1]
Experimental	98.73	79.30	19.45	27.41	5.01	3.88[2]

[1] at degree of freedom = 28 1% level, t required = 3.674

[2] at degree of freedom = 29 1% level, t required = 3.659

Details of specific SPAS score, difference in range of score in pre andpostoperative period for each individual patient and shifting of the SPAS score in terms of ranking can be found in appendix 7.3

Thus, the finding supported the hypothesis with patients who had undergone a structured preoperative teaching programme showing a significantly decreased level of anxiety in the postoperative period, whereas for patients undergoing routine preoperative care, the anxiety level remained unchanged.

7.2.3 Deviation in systolic blood pressure, pulse and respiration rate[1]

For systolic blood pressure and pulse, the raw data in their original form were used. These were transcribed from the nursing or medical note according to the criteria in quantitative for deviation from baseline data as previously described. The number of deviations (both increased and decreased deviation) was counted for each patient and these were totalled for the group (see appendix 7.4).

The x^2 test for the significance of difference between proportions for independent samples was used. The null hypothesis was that the group will not differ in terms of frequency of deviation.

See addendum in rear pocket

From the results, it was obvious that a significant difference existed between the control and experimental group with respect to deviations of vital signs from baseline data. Positive deviation of blood pressure and pulse occurred more frequently in the control group, whereas in the experimental group, negative deviations were now frequent. The lower part of Table 7.4 illustrates the proportion of positive and negative (+ and -) deviations in relation to total observation.

As the evidence of recording was very rare for respiration rate data, this indicator was omitted from the study. Usually, patient

[1] Criteria and definition of "deviation" for these three selected physiological indicators were previously discussed in chapter 5, including the method of obtaining such data.

See addendum in rear pocket

Table 7.4 Illustration of frequency and proportions of deviation in systolic blood pressure level and pulse rate between the control and experimental group

(a) Systolic blood pressure

Frequency

Group	Deviation +	Deviation -	Total
Control	38	23	61
Experimental	15	40	55
Total	53	63	116

Proportion

Group	Deviation +	Deviation -	Total
Control	0.62	0.38	1.00
Experimental	0.27	0.73	1.00
Total	0.46	0.54	1.00

x^2 = 14.16 whereas at .001 level,

df = 1 x^2 required = 10.83

(b) Pulse rate

Group	Deviation +	Deviation -	Total
Control	57	31	88
Experimental	57	64	121
Total	114	95	209

Proportion

Group	Deviation +	Deviation -	Total
Control	0.65	0.35	1.00
Experimental	-.47	0.53	1.00
Total	0.55	0.45	1.00

x^2 = 6.61 whereas .05 level

df = 1 x^2 required = 3.84; hence .01 < P < .02

respiration rate was taken on admission day and was not taken as regularly as blood pressure or pulse in the subsequent time of hospitalization.

7.2.4 Psychological state after discharge

Patient subjective evaluation of themselves was used as an indicator of their psychological state[1]. Each patient was asked the question; "How do you view yourself at this stage?" and required to rate themselves according to four categories. i.e.

(1) Nothing different from what you used to be

(2) A little bit different

(3) Very different

and

(4) extremely different.

Then they were asked to elaborate on the response selected. The results of this closed question were as follows:

[1] The question was attached to the Daily Activity Checklist which was mailed to the patients after the four weeks of discharge from hospital.

Table 7.5 Distribution of self ratings of psychological state for the control and experimental group*

Categories of responses	Frequency of responses			
	Control N = 22		Experiment N = 26	
	Actual	%	Actual	%
(1) Nothing different from what you used to be	13	59.09	12	46.15
(2) A little bit different	8	36.36	10	38.47
(3) Very different	0	0	2	7.69
(4) Extremely different	1	4.55	2	7.69

* There were 6 patients in the experimental group and 8 in the control group who did not respond. Two in the latter group died within two weeks after the operation.

From the findings, about 60% of the total responding patients in the control remained their "same self" as opposed to 46% in the experimental group. The rest (40%) of the control group patients who viewed themselves as "a little bit different" were found to have some difficulties in physical adjustment e.g. changing position, pain. The only one control patient who found herself extremely different from what she used to be commented that this was because of the absence of pain. However, she further commented that she got very depressed and was put on "some tablets" to take at night by the doctor.

Comments from the experimental group who found themselves different from what they used to be were similar to those of the control group i.e. difficulties in physical adjustment e.g. backache, fatigue. There was no evidence of disturbed or depressed behaviour as in the control group. Most showed positive thinking e.g. one stated surgery was not so frightening as she thought it was. One stated she developed the attitude of "getting well" quickly and it was that attitude that helped in preparation for her discharge (see description of patient comments in appendix 7.5).

It was the weakness of the question that made it difficult to draw any conclusion in relation to the stated hypothesis. Patients' perception of themselves can only be categorized in simple quantitative form, but its precision may be lacking.

7.3 Physical Recovery Criterion Measures

In this aspect of recovery, complaints of pain, analgesic consumption, evidence of nausea, vomiting and postoperative complications, sleep pattern and sedative consumption, and time before resuming normal body function (i.e. oral intake, bowel movement and full mobility) were taken as indicators. Also, length of hospital stay and time before resuming normal daily living activities at home were considered.

7.3.1 Complaints of pain and postoperative analgesic consumption

Complaints of pain were taken from the nurses' notes throughout the postoperative period (from the time in recovery room up to the time of discharge). The reliability of this measure depended on both patients and nurses, the first one for report of pain and the other for observation and record of pain and pain relief measures.

In the experimental group, complaint of pain was intense in the first three postoperative days and subsided rapidly over the following days. It is possible that preinformation about pain and pain relief measures given to the experimental patients through the information booklet and group teaching-discussion, might have affected their judgement about pain and it was appropriate to seek pain relief.

Due to the explicit difference in frequency of complaints according to time it was decided to separate the postoperative time into two periods, the first four days postoperation including operative day and subsequent time. The t-test was then applied to test the difference in mean complaint of pain between the control and experiental patients over each of these periods (Table 7.6).

Table 7.6 Comparison of frequency complaint of pain between the control-experimental patients according to time

Time	Frequency of complaint of pain		t-value*
	Control	Experimental	
Operative day	30	34	
1st postoperative day	14	25	
2nd postoperative day	12	14	0.10
3rd postoperative day	13	9	
4th postoperative day	5	3	
5th postoperative day	7	3	
6th postoperative day	8	2	
7th postoperative day	6	0	
8th postoperative day	5	0	2.33
9th postoperative day	3	0	
10th postoperative day	4	0	
11th postoperative day	4	0	
Total	111	90	

* At .05 level of significance, df = 58 t required = 2.01

For the first four days post operation, the evidence of complaint of pain was not different between the two groups. In the subsequent period from the fifth postoperative day onward, mean complaint of pain was significantly different between the two groups ($0.5 < p < .02$) with the experimental group making fewer whereas in the control group patients, the evidence in complaint of pain remained consistent throughout the subsequent postoperative period.

According to the hypothesis that the experimental group will make fewer complaints of pain than the control group patients, this was significantly evident after the fourth day post operation.

The difference in mean number of complaints of pain between the two groups was not significant ($p > .20$) over the first postoperative period even though it appeared in the records that the experimental group patient made more complaints of pain.

Postoperative analgesic consumption was measured by frequency of analgesis administration, taken from the nurses' records (nurses' notes, nurses' medication record and narcotic drug administration book). Analgesics were categorized according to route of administration, oral and parenteral. The most frequent drugs used for parenteral route were Morphine and Pethidine. The oral analgesics frequently used in both group were Paracetamol, Digesic and Soluble Aspirin. Comparison between experimental and control group with respect to total analgesic consumption in relation to time is shown in Table 7.7.

Table 7.7 Comparison between the control and experimental groups on postoperative analgesic consumption*

Time immediate postoperation and subsequent time	Number of analgesic consumption				Total number of analgesic consumption (times)	
	Parenteral Route		Oral Route			
	Control	Experimental	Control	Experimental	Control	Experimental
Operative day (Recovery room to 7 a.m.)	33	37	6	10	39	47
1st postoperative day	24	33	10	16	34	49
2nd postoperative day	5	5	10	11	15	16
4th postoperative day	4	0	3	9	7	9
5th postoperative day	5	0	6	4	11	4
6th postoperative day	8	0	9	4	17	4
7th postoperative day	6	0	9	3	15	3
8th postoperative day	6	0	9	3	15	3
9th postoperative day	1	0	8	0	9	0
10th postoperative day	0	0	7	0	7	0
11th postoperative day	0	0	8	0	8	0
Total	103	87	94	73	197	160

* N = 30 Subjects in each group

The control group patients stopped all analgesics by the 12th postoperative day.

The experimental group patients stopped all analgesics by the 9th postoperative day.

Analgesic consumption was higher in the experimental group than in the control group over the first postoperative day, although the total consumption for the experimental group was less than that of the control group. However, the difference was not statistically significant ($t = 0.71$, $p > .20$). By the fourth day, patients in the experimental group no longer required pain relief injections whereas some members of the control group continued to require this intervention until the ninth postoperative day. It was found also that some control group patients received oral pain relief until the 12th post-operative day, whereas for the experimental group patients the need for pain relief appeared to stop on the 9th postoperative day.

With different patterns of pain relief consumption apparent within the two groups of patients in relation to time, t-tests were applied separately for the two time periods: (i) from immediate postoperation up to the fourth postoperative day and (ii) subsequent time, there was no significant difference in the number of pain relief medication given between the two groups ($t = 0.35$, $p > .20$ at $df = 58$). Opposed to this finding, in the subsequent period the difference was significant ($t = 2.26$, hence $.02 < p < .05$ at $df = 58$). The findings were similar to those in terms of frequency in complaint of pain.

Overall, in terms of complaint of pain and analgesic consumption, there was no difference between the two groups in the immediate post-operative up to the fourth postoperative day. In the subsequent time, from the fifth postoperative, the picture is different. The experimental group showed significantly less evidence of pain and of analgesic consumption, thereby partially supporting the hypothesis.

Comparison between the two groups in terms of analgesic consumption (oral and parenteral route) and complaints of pain in relation to time was shown in Figure 7.1, 7.2, 7.3 respectively. It is apparent that complaints of pain did not coincide with the analgesics taken. This again may be due to some limitation of the nurses' records, i.e. the nurses may not always have recorded the complaint of pain which was the cue for analgesic administration.

7.3.2 Evidence of nausea, vomiting, urinary retention and postoperative complication

Nausea and vomiting: It was hypothesized that the experimental group patients would experience less evidence of nausea, vomiting, urinary retention and fewer postoperative complications than those in the control group. Nausea and vomiting were taken as indicators of physical recovery although their psycho-physiological nature was appreciated. The basic assumption was that with sufficient and appropriate preoperatove prevention, the experimental patients would be more able to withstand any unpleasant side effect of immediate and subsequent postoperative periods than the control group patients. Data were obtained from the nurses' records starting with the recovery room and extending through until the time of discharge.

There were ten recorded evidence of vomiting in the control group in the operative day, compared to only three evidence in the experimental group. Evidence of nausea was very rare in the records. None appeared for the control group at any time, but there were three evidence of recording in the experimental group in the first postoperative day.

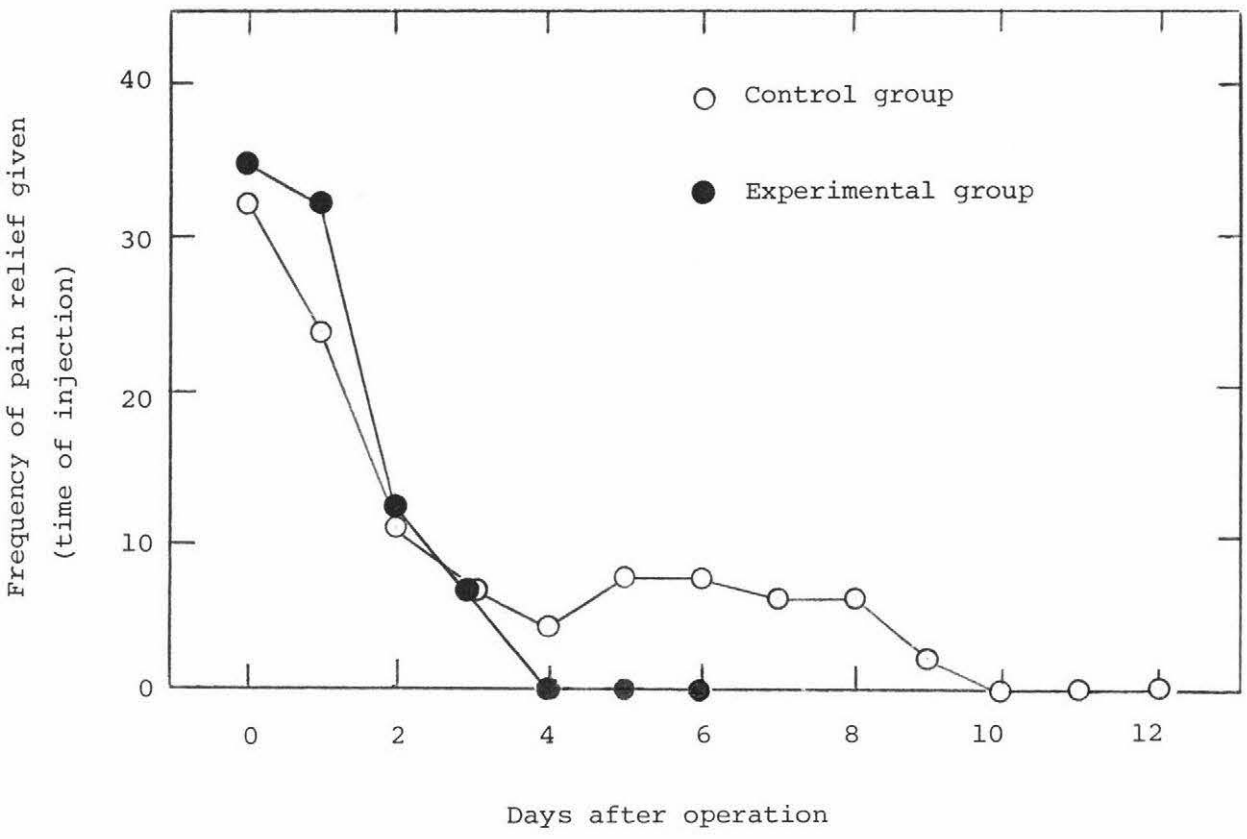


Figure 7.1 Comparison of parenteral analgesic consumption between the control and experimental groups according to time.

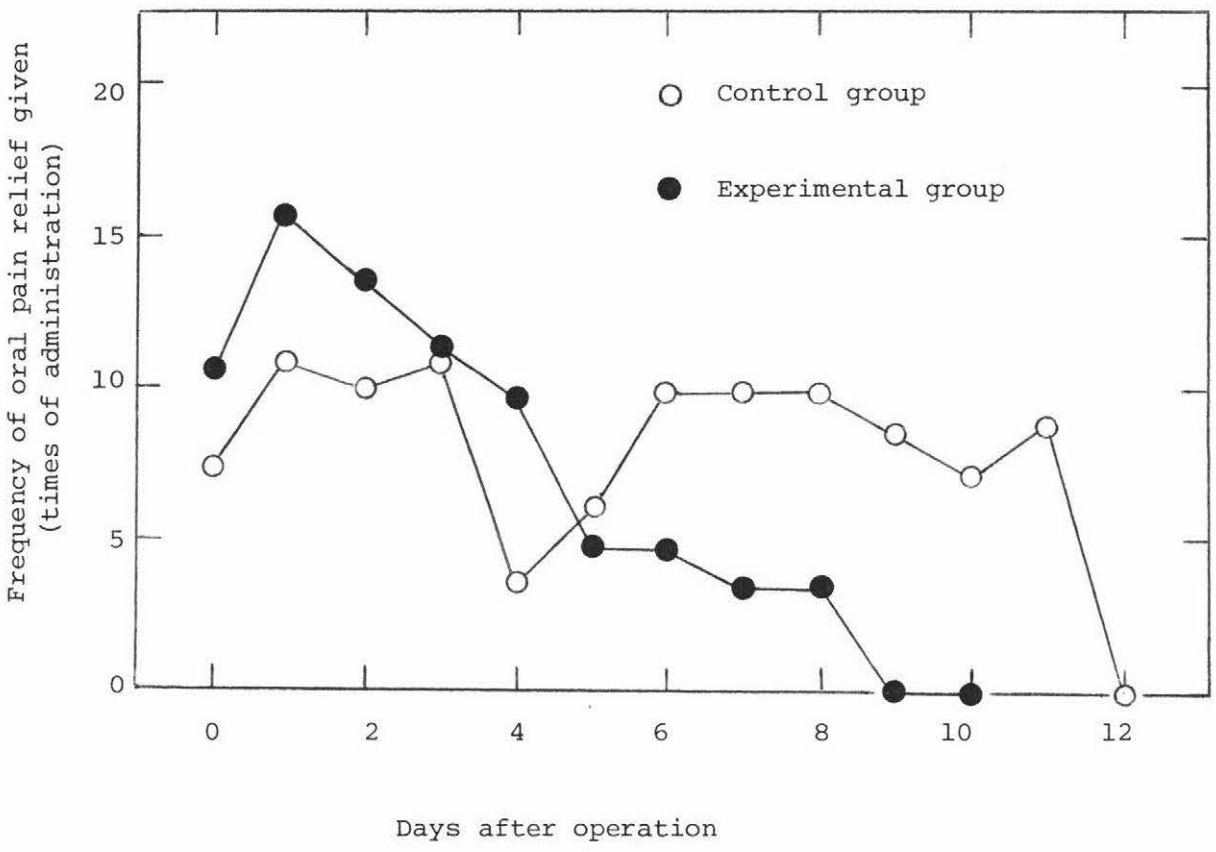


Figure 7.2 Comparison of oral analgesic consumption between the control and experimental group according to time.

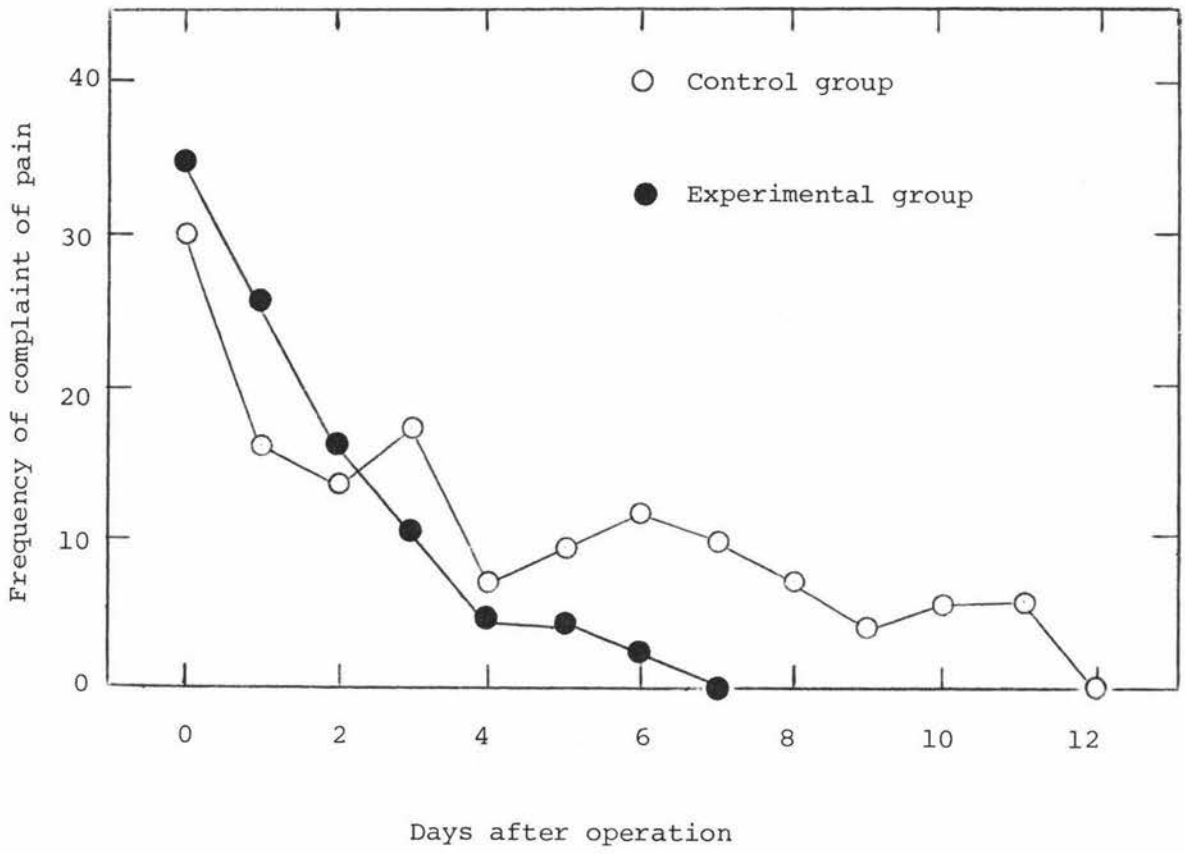


Figure 7.3 Comparison of frequency in complaint of pain between the control and experimental groups according to time.

For both control and experimental groups, there was no recorded evidence of postoperative nausea and vomiting after the fourth day post-operative (Table 7.8).

Table 7.8 Incidence of postoperative vomiting as compared between the control and experimental groups

Groups	No. of evidence according to time									
	operative day*		1st postop.		2nd postop.		3rd postop.		4th postop.	
	actual	%**	actual	%	actual	%	actual	%	actual	%
control (N = 20)***	10	50.00	5	25.00	5	25.00	0	0	0	0
Experimental (N = 8)	3	37.50	4	50.00	0	0	1	12.50	0	0

* Inluding incidence recorded in the recovery room.

** Percentage of the total recorded evidence

*** N = total number of recorded evidence.

There was insufficient data to make any real comparison concerning postoperative nausea. For the incidence of vomiting, the difference in means of recorded evidence between the two groups was significant at .05 level ($t = 2.66$ whereas, at .05 level, $df = 7$ t required = 2.37).

See addendum in rear pocket

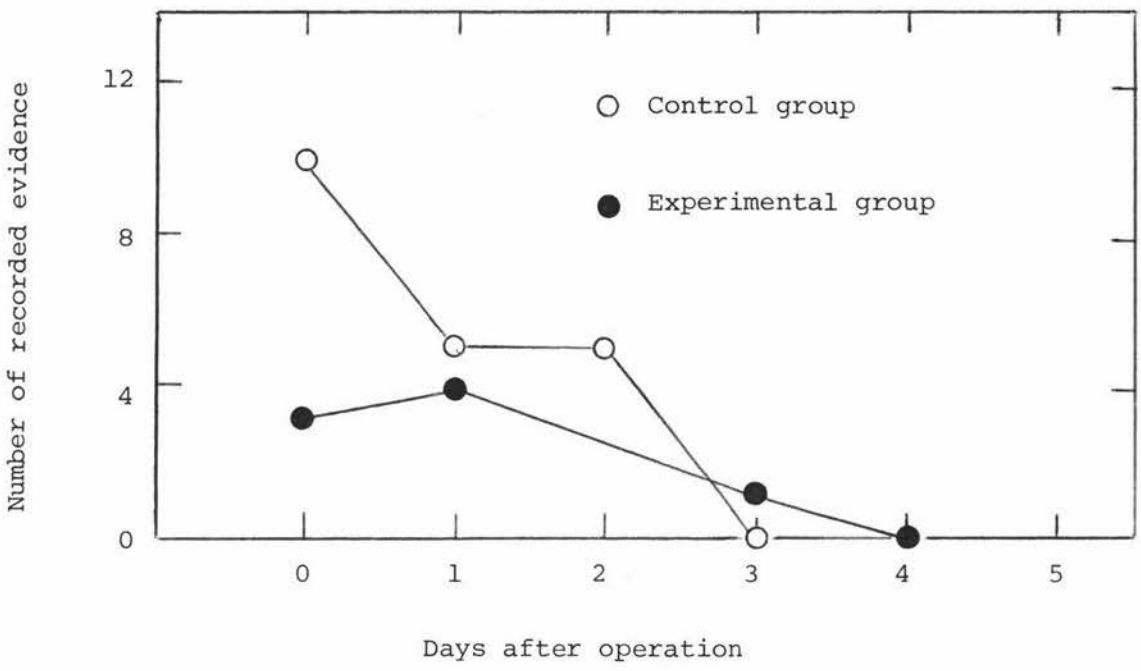


Figure 7.4 Incidence of postoperative vomiting compared between the control and experimental groups.

Urinary retention and postoperative complications: Urinary retention was included with other postoperative complications, as alone the frequency was not sufficient for a basis of comparison (i.e. there were only two recorded cases of urinary retention in the experimental group). Postoperative complications referred to any signs and symptoms of infection, abnormalities, disturbances occurred within the body system as observed and recorded by nurses in the nurses' notes (Chapter 5). It was hypothesized that evidence of postoperative complications will be less in the experimental group patients than in the control group patients. The actual recorded evidence is shown in Table 7.9.

T-test was applied to test the difference between means of recorded evidence in postoperative complications between the two groups. The result showed a significant difference between the two groups in terms of evidence of postoperative complications ($t = 2.10$ whereas at .05 level $df = 23$, t required $= 2.07$). Excluding evidence of nausea and vomiting, t-test was again applied to the rest f the data. Again, the result yielded the same finding ($t = 2.34$). Thus, the hypothesis was supported.

See addendum in rear pocket

7.3.3 Pattern of sleep and sedative consumption

Pattern of sleep was recorded per case per night. Through the selected postoperative period, i.e. up to the twelth day post operation. The finding was that the experimental group appeared to have slept better than the control group (there were only 9 recordings of "sleepless" nights in the experimental group patients compared to 26 recorded case incidence in the control group). T-test was applied

Table 7.9 Incidence of postoperative complications for both control and experimental groups*

Groups	Number of recorded evidence according to time												Total recorded evidence
	Operative day	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day12+	
Control (n = 30)														
Actual frequency	19	13	18	4	3	5	3	3	3	2	3	1	0	77
% of the total	24.67	16.87	23.37	5.20	3.90	6.49	3.90	3.90	3.90	3.60	3.90	1.30	0	100
Experimental (n = 30)														
Actual frequency	3	11	5	2	2	1	2	0	0	0	0	0	0	26
% of the total	11.54	42.31	19.23	7.69	7.69	3.85	7.69	0	0	0	0	0	0	100

* Evidence of nausea, vomiting and psychological disturbances i.e. withdrawn, anxious etc were included.

Details of postoperative complications: description and body systems involved are shown in appendix 7.2.

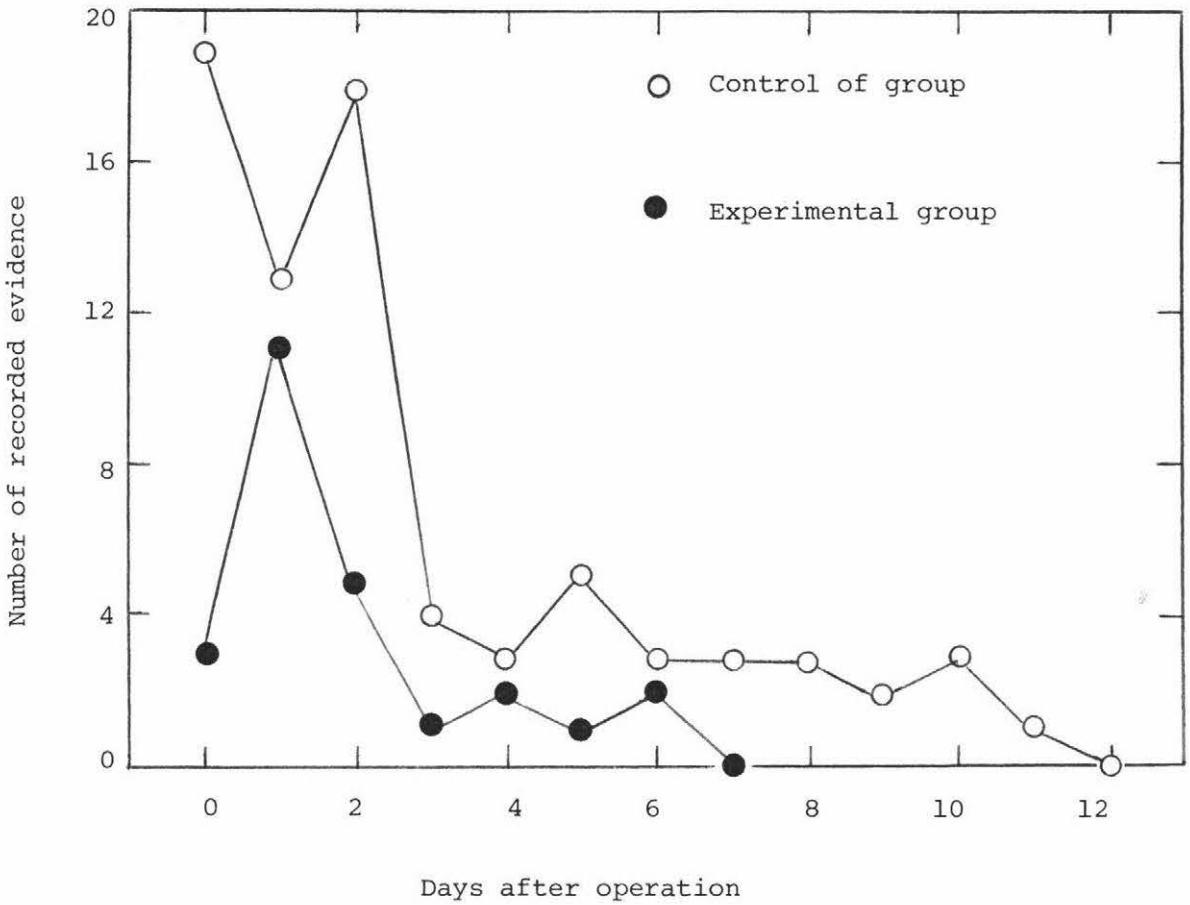


Figure 7.5 Incidence of postoperative complications in relation to time for the experimental and control groups (including nausea and vomiting).

See addendum in rear pocket

and it was found that the difference in pattern of sleep was statistically significant (t = 2.26 whereas at .05 level df = 25 t required = 2.06).

Within this, the number of sedatives taken was obtained for comparison. It was found that both groups were taking about the same quantity of sedatives (i.e. number of tablets taken; the most frequently used was Mogadon), but slightly higher in the experimental group ($\bar{x}$ experimental = 2.30 tablets/patient / total stay whereas $\bar{x}$ control was 2.27 tablets /patient/total stay). However such difference was not significant ($p > 0.20$).

Table 7.10 illustrated pattern of sleep between the two groups. The finding had supported the stated hypothesis.

Table 7.10 Comparison between the control and experimental group pattern of sleep*

Group	Op night	Postoperative day											
		D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D 12+
Control	0	6	5	3	3	1	2	1	1	1	1	1	1
Experimental	4	2	0	1	0	1	0	1	0	0	0	0	0

* Number of cases recorded as having inadequate sleep (i.e. poor sleep, intermittent sleep, slept at times, sleepless night, broken sleep, slept at intervals, awake all night etc.).

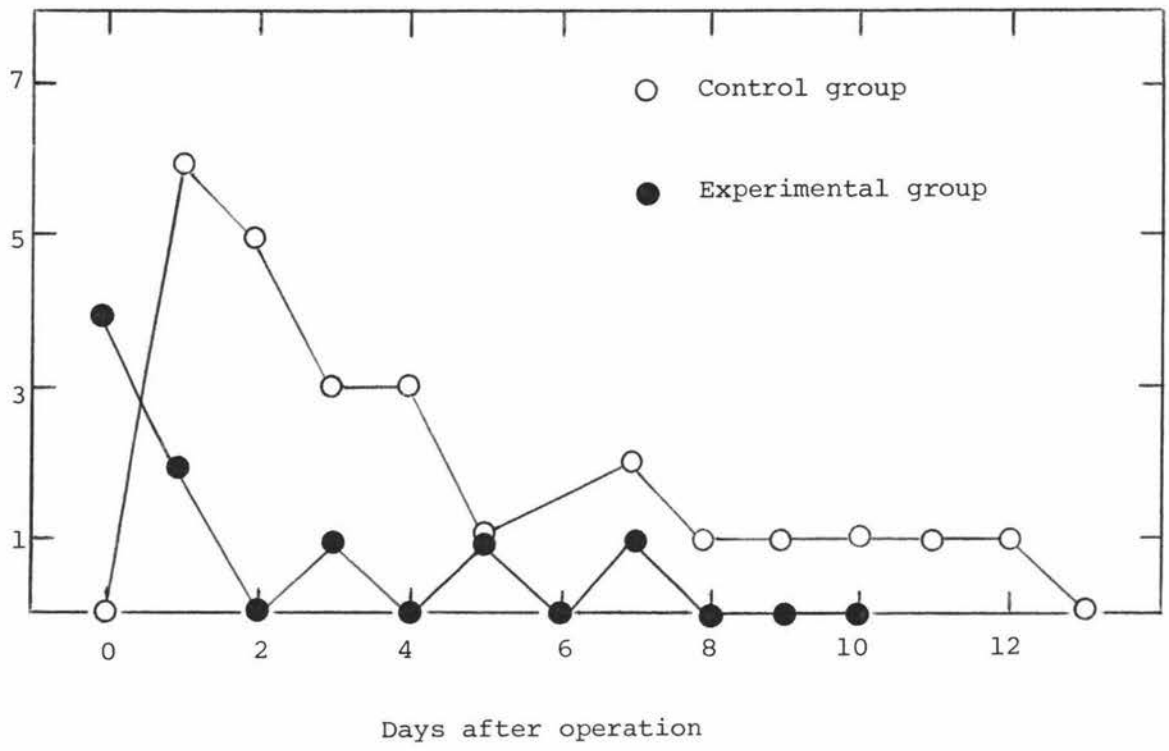


Figure 7.6 Number of patients reported as having inadequate sleep during postoperative periods compared between the control and experimental groups.

7.3.4 Time taken to resume normal body function with respect to oral intake, bowel motion and full mobility

As data were obtained from the secondary source i.e. nurses' record, there was a problem with unavailable data. For this reason, time to resumption of ordinary oral intake (i.e. eating) was abandoned as a measure.

Bowel motion: In both groups, there was equal number of cases having their first bowel motion at some stage in the hospital (Table 7.11) i.e. 16 cases out of the total 30 cases (53%). Of the remainder (47%), a few had constipation and needed some medical measures, and more than half of the total remainder had no record.

To eliminate the problem of missing data, x^2 test of independent was applied to the available data within the first week of post-operative period (up to the 7th postoperative day) only. The result was that there was no difference between the control and experimental group patients (x^2 = .60 whereas at .05 level of significance df = 1 x^2 required = 3.84).

Mobilization: In the experimental group, there were 29 recorded cases (96%) recorded as being fully mobilized while in hospital[1] whereas there were only 24 recorded cases (80%) recorded of same in the

[1] One experimental patient was discharged in the first day post operation before any assessment could be made, thus there was no record of how well he mobilized (A 16 year old student with infected toes).

Table 7.11 Comparison between the control and experimental groups with respect to time before resuming normal bowel function and full mobilization*

(a) First bowel motion

Groups	Number of recorded cases overtime												
	Op Day	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12 +
Control	0	0	1	5	3	3	1	0	2	1	0	0	0
Experimental	0	2	1	3	5	1	2	2	0	0	0	0	0

$x^2 = 0.60$; not significant

(b) Full mobilization

Groups	Number of recorded cases overtime												
	Op Day	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12+
Control	1	2	2	3	3	1	4	2	2	1	2	1	0
Experimental	2	3	10	5	4	4	0	1	0	0	0	0	0

* In applying the statistical procedures, the time was counted for the first week after operation (up to day 7).

control group. The rest were having difficulties in mobilization or on bedrest or restricted activities[2].

Again the x^2 test was applied to recorded cases in the first week postoperation (up to the 7th post operative day). The result indicated a significant relationship existed between the two groups and in the direction of earlier mobilization in the experimental group (x^2 = 11.88 whereas .001 level of significance, df = 1 x^2 required = 10.83).

7.3.5 Length of hospital stay, time elapsed before returning to work and difficulties in adjusting to normal daily activities

Length of hospital stay: Length of hospital stay was selected as one indicator of physical recovery. It was hypothesized that the experimental patients would be discharged sooner than those of the control group resulting in a shorter hospital stay. There were many factors influencing this variable e.g. hospital policy, physician preference ets. However, there was general agreement on criteria for discharge as shown in the final part of the booklet"Preparation for Surgery". This assumed that patients would be in hospital until they were able to cope with most of their physical activities, and that their general condition with respect to medical assessment was satisfactory.

[2] For the remainder, 6 control patients, 4 still had difficulties in mobilization, of the other 2, 1 was confined to bed due to her critical condition, the other was on restricted activities due to the development of postoperative pulmonary emboli. Examples of recording in this category were as up and about quietly, up and about in moderation, resting in bed most of duty etc. as opposed to the recorded cases of having full mobilization, these were recorded as up and about, up and about freely helping around ward.

T-test of significant difference between means of the independent samples was applied. The result did not support the stated hypothesis (Table 7.12). However the experimental group appeared to be more homogeneous i.e. smaller variance.

Time elapsed before returning to work: This data was obtained by means of a questionnaire which was mailed to each patient by the fourth week after discharge. Two questions related to job-work were included in the main questionnaire. The actual data are shown in Table 7.13.

Apparently from Table 7.13 (c), there were 10 patients (54%) who returned to work during the three weeks period after discharge whereas there were 10 patients (38%) of the experimental group reported of same. The remainder, 12 and 16 cases in the control and experimental group respectively had not returned to work until sometime after the three weeks. x^2 test of independence was applied to these data. There was no significant relationships between the two observations (x^2 = 0.24 where x^2 required at .05 level df = 1, is 3.84).

Difficulties in adjusting back to normal daily activity: There were two forms of self rating measurement used as measured for this aspect of physical recovery: one involved as direct question for overall assessment, and the other appeared in the checklist form for each particular activity. In the first case, the question asked was "Overall, did you have any difficulty with your daily activities?" and for the other, the Daily Activity Checklist (DAC) was developed

Table 7.12 Comparison of length of hospital stay between the control - experimental groups

Comparison	Groups		
	Total	Control	Experimental
Mean	7.85	8.40	7.30
Variance	18.57	26.52	10.63
Range	20.00	20.00	12.00
Sum	471.00	252.00	219.00
STD Error	0.56	0.94	0.60
STD Dev	4.51	5.15	3.26
Maximum	1.00	1.00	2.00
Minimum	21.00	21.00	14.00

t = 0.99 whereas at .05 level of significance

df = 58, t required = 2.01

Table 7.13 Comparison between the control and experimental groups with respect to time elapsed before returning to work

(a) If working, when did you return to work?

Groups	Time elapsed after discharge and before returning to work			
	1 week	2 weeks	3 weeks	4 weeks or more
Control (n = 22)	1	1	-	5
Experimental (n=26)	2	2	-	2

(b) If not employed, when did you return to the job you normally do?

Groups	Time elapsed after discharge and before returning to job one normally does			
	1 week	2 weeks	3 weeks	4 weeks or more
Control (n = 22)	5	2	1	7
Experimental (n = 26)	4	2	-	14

(c) Combined data from (a) and (b)

Groups	Time elapsed after discharge and before returning to work							
	1 week		2 weeks		3 weeks		4 weeks or more	
	Actual	%	Actual	%	Actual	%	Actual	%
Control (n = 22)	6	27.27	3	13.64	1	4.55	12	54.54
Experimental (n = 26)	6	23.07	4	15.39	0	-	16	61.54

Table 7.14 Comparison of the Daily Activities Checklist score between the control and experimental groups

Group / Number of respondent	Daily Activities Checklist Score								t-value
	Mean	Variance	Range	Sum	STD Error	STD Dev.	Minimum	Maximum	
Control (N = 22)	109.46	99.21	31.00	2408.00	2.12	9.96	89.00	120.00	0.76**
Experiment (N = 26)	105.80	421.12	86.00	1751.00	4.03	20.52	34.00*	120.00	

* There was one patient in the experimental group who previously had a stroke, and was living under institutional care i.e. a war veteran, home as he had no family of his own. Sone activities he rated as restricted and this might have affected the total groups score. However due to direct observation during the postoperative period this patient functioned in his full capacity as he was preoperatively.

** $p > .20$ that this difference was not significant.

(appendix 5.3). The DAC score indicated how well patients were coping with adjusting back to their daily living activities i.e. high score indicated high level of appropriate coping whereas low score indicated the opposite.. It was hypothesized for both measures that the experimental group patients would show higher level of coping, i.e. less difficulty in adjusting back to their daily activities, than those in the control group.

The DAC score (appendix 5.10): The patients were asked to rate themselves with respect to five categories of activities of daily living (as described fully in chapter 5). The results of total rating between the two groups are shown in Table 7.14. The total possible score is 120.

The results showed that there was no significant difference between means of the DAC score between the two groups ($\bar{x}$ control = 109.46 whereas $\bar{x}$ experimental = 105.80 $p > .20$). Hence, neither group had difficulty in adjusting back to their daily routines that were significantly different from one another (Table 7.14).

Overall self assessment: Associated with the DAC finding, the patient responses to the overall self assessment question are;

Table 7.15 Patients' responses in terms of difficulties in adjusting back to normal daily activities as compared between the control and experimental group.

Question: Overall, did you have any difficulty with your daily activities.

Groups	Patients' responses							
	Not at all (1)		Only a few (2)		Difficult (3)		Very difficult (4)	
	Actual	%	Actual	%	Actual	%	Actual	%
Control (n = 22)	8	36.36	9	40.91	2	9.09	3	13.64
Experimental (n = 26)	3	11.54	20	76.92	-	-	3	11.54

Dividing the patients' responses into two categories; one of those who viewed themselves as having a few difficulties (including no difficulty) and the other with difficulty (including very difficult), x^2 test of independence was applied. The finding was there was no difference between degree of difficulty in adjusting back to daily activities between the two groups ($x^2 = 1.07$ $0.10 < p < 0.50$ $df = 1$). From Table 7.15, about 77% of the control group patients having a few or no difficulties compared to 88% of the experimental group. In the same time those having difficulties and high degree of difficulties in adjusting back to their daily routines was slightly higher in the

control group (13.64% opposed to 11.54% of the experimental patients).

However, for both measures in adjusting back to daily living routines. The stated hypothesis was not supported. Comparison of DAC score between the two groups with respect to its categories are shown in appendix 7.6.

7.4 Complex Criterion Measures: The PCE Score

The patient condition evaluation form was used by the two level of nurses; supervising level (i.e. charge nurse and staff nurse in charge) and bedside care given level nurse (i.e. staff nurse, enrolled nurse and student nurse) for each individual patient during the 48 hours post operation. These nurses were responsible for the total patient care within that period of time, thus it was expected that they would be the ones most likely to know the patients condition. The decision, to use the two levels of nurse was based on the assumption that the more information about a patient that one can get, then the more accurate one's perception of that patient's condition is likely to be. The bedside care level nurse can contribute a lot in terms of evaluating the patient's condition as she is the one who is likely to be in close contact with patients in the process of care. In the same time, professional judgement in regard to knowledge and experience of supervising level nurse would also contribute to accuracy in perception of patient's condition.

The PCE consisted of six different aspects of patients general

Condition, physical, sensory, cognitive clarity, phychosocial, communication and overall evaluation which summed up the picture of each individual patient from the nurses' point of view. Comparisons were made between the control and experimental group according to each category. Mean scores under each category were obtained for both groups and a t-test applied (Table 7.16).

As shown in Table 7.16, there was no significant difference between the two groups either for mean subscores or total score ($t = 0.25$ whereas at .05 level, $df = 58$, t required = 2.002). Hence, it could be concluded that from the independent nurses' point of view, there was no difference between control and experimental group in terms of the patients' overall condition during the 48 hours post operation, even though the actual score was slightly higher in experimental groups.

See addendum in rear pocket

Again, in each particular category, it appeared as though the experimental group was rated higher in most aspects, except physical and cognitive clarity in which the average scores between control and experimental group were 18.97, 21,95 to 18.26 and 21.67 respectively. The relatively higher t-value for the communication aspect ($t = 1.54$), though not significant at 0.05 level suggests that from the nurses' point of view, the experimental group patients communicated better than those of the control group.

The total Patient Condition Evaluation score (A, B, C, D and E score) was compared with overall evaluation score (F). They were

Table 7.16 Comparison for means PCE score according to its categories between the control and experimental groups.

Categories of Patients' Condition Evaluation	Groups	N*	$\bar{X}$	STD DEV.	Var.	ΣX	ΣX^2	t-value	
A. Physical aspect	Control	59	18.97	5.28	27.46	1119	22843	0.61	No significant difference at .05 level T expected 1.981
	Experiment	58	18.26	3.60	12.71	1059	20073		
B. Sensory aspect	Control	59	18.61	4.76	22.24	1098	1746	0.58	
	Experiment	58	19.02	3.66	13.44	1122	22112		
C. Cognitive clarity aspect	Control	59	21.95	3.38	11.23	1295	29087	0.67	
	Experiment	58	21.67	3.20	10.05	1257	27825		
D. Physocial aspect	Control	59	19.83	4.68	21.50	1170	24470		
	Experiment	58	20.74	3.18	9.95	1203	25529		
E. Communication aspect	Control	59	19.17	4.18	17.20	1132	22734	1.54	
	Experiment	58	20.24	3.28	10.60	1174	24378		
F. Overall evaluation	Control	59	17.42	4.76	22.28	1028	19226	0.40	
	Experiment	58	18.38	2.78	7.58	10666	20032		

See addendum in rear pocket

* N = total number of nurses' evaluation on patients' condition.

highly correlated (r total group = 0.76)[1]. It may be concluded that the nurses' perception of patients' condition were consistent even though different forms of measurement had been used.

Details and comparison between Patient Condition Evaluation Score as assessed by the two levels of nurses are shown in appendix 7.7.[2] The two levels of nurses did not show any difference in their perception of patients' condition in terms of mean PCE Score ($p > 0.20$) and there was high positive correlation between scores derived from the two observations ($r = 0.88$).

In conclusion, the stated hypothesis was not supported, i.e. there was no difference between the two groups with respect to their conditions over the first 48 hours post operation as observed by the independent nurse observers.

[1] Correlation coefficient between PCE Score and Category F were 0.86, 0.60 and 0.76 with control, experimental and the total group respectively. All were significant at .001 level.

[2] The actual nurses' comments on patients' condition were included in this appendix.

SECTION C

7.5 Some Additional Investigations Within Control and Experimental Groups

7.5.1 Time in operating room and recovery room

A record of the time spent in the operating room and in the recovery room was obtained from the patients records. For the total group, on average each patient spent about an hour in the operating room and $1\frac{1}{6}$ hours in the recovery room. There was no difference between the two groups with respect either to time spent in the recovery room or in the operating room. However, there was a suggestion that the experimental group spent less time in the recovery room ($0.05 < p < 0.10$). Hence, the experimental group may have shown better recovery at the outset and been transferred back to the ward sooner. However, due to many factors affecting this trend, no firm conclusion can be drawn at this point.

7.5.2 Preparation at the time of discharge

Degree of preparation: Responses to the question "Were you well prepared at the time of discharge?" for the two groups are shown in Table 7.18.

Table 7.17 Comparison of time spent in operating room and recovery room between the control and experiment group.

(i) Time in operating room* (minutes)

Group	N**	$\bar{x}$	Variance	Range	Sum	STD Error	STD DEV.	Minimum	Maximum
Control (30)	24	59.17	2381,85	215.00	1420.00	9.96	26.22	10.00	225.00
Experiment (30)	29	57.20	727.25	105.00	1430.00	5.39	26.97	15.00	120.00
Total group (60)	53	58.16	1505.93	215.00	2850.00	5.54	38.81	10.00	225.00

(ii) Time in Recovery room*** (minutes)

Group	N	$\bar{x}$	Variance	Range	Sum	STD Error	STD Dev.	Minimum	Maximum
Control (30)	25	76.00	687.00	105.00	1900.00	5.24	26.22	30.00	135.00
Experiment (30)	30	66.03	193.53	56.00	1915.00	2.58	13.91	35.00	90.00
Total group (60)	55	70.65	438.72	105.00	3815.00	2.85	20.95	30.00	135.00

* Time of commencing anaesthesia to time finishing operation.

** Number of recorded cases as there were some missing data.

*** Time of 1st entry of recording of vital signs to last entry of recording of vital signs in recovery room.

Table 7.18 Patients' responses with respect to degree of preparation for discharge.

Groups	Not at all	Partly prepared	Well prepared	Very well prepared
Control (N = 22)	7	7	6	2
Experimental (N = 26)	7	7	8	4
Total group (N = 48)	14	14	14	6
%	29.16	29.16	29.16	12.52

The finding yielded that there was no difference between the two groups in their opinions concerning preparedness for discharge. For the total group, about 30% of the patients felt that they lacked preparation, and only 12% felt that they were well prepared for discharge.

The most helpful person in preparing for discharge: Responses to the question of "who was the most helpful person in preparing you for discharge?" are summarized in Table 7.19.

Table 7.19 Patients' opinion about person most helpful in preparing for discharge*

Groups	Nurse	Doctor	Others**	Nobody	Everyone
ontrol (n*** = 25)	17	4	2	1	1
Experimental (N = 36)	13	8	14	1	-
Total group (N = 61)	30	12	16	2	1
%	49.18	19.67	26.23	3.28	1.64

* Some patients rate more than one item.

** N = number of responded items.

*** Others referred to other than staff, oneself, relatives, friends and spouses, district nurses, a friend with same operation, other patients.

The results showed that nurses are seen as the most helpful persons. The doctor was regarded as less helpful than relatives, friends and other patients in ward. The feeling of "no one was really helping" occurred only once in the control group.

7.5.3 The most remembered event in hospital

The purpose of this question was to investigate how patients perceived their stay in hospital and whether they regarded it as pleasant or unpleasant. The findings are shown in Table 7.20.

Table 7.20 The most remembered event in hospital*

	Unpleasant experience				Pleasant experience		
Groups	Going to operating room	Recovery from Anaesthesia	Pain	other**	Getting to know people	Having a resting time	other***
Control (n = 33)	4	6	6	1	10	6	-
Experimental (n = 34)	8	4	5	6	4	5	2
Total (n = 67)	12	10	11	7	14	11	2
%	17.91	14.93	16.42	10.45	20.90	16.42	2.99

* Some patients rated more than one item.

** Unpleasant other = boredom, noisy patients in ward, wanting to go home, despair, seeing sick patients.

*** Pleasant other = friendly patients in room and ward.

For the total group, approximately 60% of the events patients could recall while staying in hospital were unpleasant experiences. The experimental subjects remembered unpleasant events more than the control group i.e. up to 67% of the total events compared to 51% of the control group. This difference was not significant

$\chi^2 = 6.10 \quad .10 < p < .30$

7.5.4 Patients' opinions toward the structured preoperative teaching programme

Two questions were asked regarding how helpful the booklet and the structured teaching programme were in preparing patients for events before and after surgery. The responses are summarized in Table 6.21.

Table 7.21 Patients' opinions regarding the use of booklet and teaching programme in relation to their surgery (N = 26)

Questions regarding	No effect	Rubbish or nuisance	Slightly helpful	Very helpful	No responses
Use of booklet	1	1	13	10	1
%	3.85	3.85	50.00	38.45	3.85
Attitude toward the teaching programme	1	1	12	12	-
%	3.85	3.85	46.15	46.15	

The result showed that the majority of patients (over 90%) showed positive responses toward the use of the booklet and teaching programme. Less than 10% regarded them as having "no effect" or "Rubbish and nuisance". However with patients who has positive responses there might have been some interpersonal factors affecting comments toward the overall teaching programme.

SECTION D

7.6 Intercorrelations Between the Selected Variables

In addition to the hypothesis testing just described, selected variables were intercorrelated in order to identify their overall pattern of association. Such variables included some biodemographic information, health-illness related data such as age, number of previous hospitalizations etc. physical recovery criterion measures, psychological welfare and complex criterion measures. The Surgical Patient Anxiety Scale score (Total SPAS) was used as an independent variable in this analysis. The intercorrelation between these variables was tested as follows:

(1) Total SPAS and SPAS subscores with age, number of previous hospitalizations and operations, number of SPAS situations which the respondents had actually experienced, and degree of their imagination.

(2) Total SPAS and SPAS subscores with selected physiological measures, i.e., length of hospital stay, complaints of pain and pain relief given (or analgesic consumption), time in operating and recovery room.

(3) Total SPAS and SPAS subscores in relation with the two measures used i.e. Daily Activity Checklist (DAC) score and Patient Condition Evaluation (PCE) score.

The whole procedure was done through SPSS using subprogram Pearson Correlation. The resulting correlation matrices are shown in Table 7.22 and 7.23. Further details are given in appendix 7.9.

7.6.1 Correlations between the total SPAS and SPAS subscores with biodemographic and health-illness related experience variables

From Table 7.22, age was found to be negatively related to the total SPAS score, i.e. the higher the age, the lower the SPAS score. This was interpreted that the older patients showed less anxiety to surgery and hospitalization than the younger patients. The relationship was highly significant in the total group and varied in level of significance in the control and experimental group.

At the same time, number of previous hospitalizations and operations was not significantly related to the degree of anxiety. In other words, these variables were independent of one another, i.e. having more previous hospitalizations and operations did not guarantee that the patient would experience less anxiety in the present admission. The actual correlation coefficient indicated as trend for inverse relationship, but it did not allow very much insight into these relationships ($r = -0.01$ and -0.15 for number of hospitalizations and operations respectively).

It was found that patient's previous experience and level of anxiety were independent of one another. An anticipated inverse relationship was indicated (r total group = -0.02), but with no statistical significance. This was interpreted that having had

experience of such situations before does not guarantee that the patient would be "immunized" or "acclimatized" to the situation.

The degree of imagination was found to have a significant relationship with level of anxiety (total SPAS) in the total and experimental group. This indicated that patients who had a higher degree of imagination experienced a higher level of anxiety. This relationship did not hold in the control group in which age might have played a significant role. About 70% of the control subjects were over 30 years of age opposed to only 47% of the experimental subjects (Table 7.1). There was a tendency that older patients showed a lower degree of imagination (r total group = -0.15). Thus, older patients who had a lower degree of imagination experienced less anxiety when compared with younger patients.

In relation to the SPAS components, age again seemed to play a major role, for the total group, the older patients seemed less concerned about inability to control the environment, pain or cancer. The similar pattern of relationship was found in both experimental and control group, but with a different level of significance.

The highest contribution to the SPAS score came from component 4 which is anxiety resulting from anticipation of the possibility of cancer and other uncertain outcomes.

Table 7.22 Intercorrelations between the patients' preoperative anxiety level (SPAS) and their biodemographic, health and illness-related experience.

(a) Total group

Variables	1	2	3	4	5	6	7	8	9	10
1. Age										
2. # Previous Hsp.	0.01									
3. # Previous Ops.	0.10	0.85***								
4. Situation	-0.07	0.09	0.11							
5. Imagination	-0.15	-0.16	-0.17	0.34**						
6. SPAS 1	-0.48***	0.08	-0.13	0.05	0.30**					
7. SPAS 2	-0.45***	0.05	-0.09	0.07	0.13	0.65***				
8. SPAS 3	-0.30*	-0.08	-0.13	-0.11	0.20	0.54***	0.78***			
9. SPAS 4	-0.38**	-0.05	-0.16	-0.06	0.21	0.74***	0.62***	0.59***		
10. Total SPAS	-0.47***	-0.01	-0.15	-0.02	0.25*	0.85***	0.86***	0.83***	0.88***	

* Significant at .05 level

** Significant at .01 level

*** Significant at .001 level

Table 7.22 (Cont'd)

(c) Experimental group

Variables	1	2	3	4	5	6	7	8	9	10
1. Age										
2. # Previous Hsp.	0.09									
3. # Previous Ops.	0.12	0.93***								
4. Situation	-0.18	0.12	0.09							
5. Imagination	-0.86	-0.13	-0.18	0.38*						
6. SPAS 1	-0.60***	-0.02	-0.12	-0.01	0.37*					
7. SPAS 2	-0.49**	-0.11	-0.13	0.05	0.39*	0.85***				
8. SPAS 3	-0.27	-0.19	-0.20	-0.01	0.38*	0.75***	0.90***			
9. SPAS 4	-0.56**	-0.11	-0.21	-0.01	0.31	0.85***	0.90***	0.78***		
10. Total SPAS	-0.51**	-0.12	-0.18	-0.01	0.39*	0.93***	0.95***	0.93***	0.92***	

* Significant at .05 level

** Significant at .01 level

*** Significant .001 level

Table 7.22 (Cont'd)

(b) Control group

Variables	1	2	3	4	5	6	7	8	9	10
1. Age										
2. # Previous Hsp.	-0.17									
3. # Previous Ops.	0.10	0.56**								
4. Situation	0.03	0.06	0.21							
5. Imagination	-0.21	-0.23	-0.11	0.28						
6. SPAS 1	-0.41*	0.25	-0.15	0.07	0.18					
7. SPAS 2	-0.38*	0.36*	-0.03	0.12	0.01	0.52**				
8. SPAS 3	-0.33	0.15	0.02	-0.21	0.22	0.39*	0.56**			
9. SPAS 4	-0.24	0.02	-0.08	-0.11	0.06	0.65***	0.50**	0.46**		
10. Total SPAS	-0.41*	0.21	-0.08	-0.05	0.15	0.82***	0.76***	0.73***	0.86***	

Abbreviations used in the table

# Prev. Hsp.	=	Number of previous hospitalizations
# Prev. ops.	=	Number of previous operations
Situation	=	Number of SPAS situation happened in the actual patient previous experience
Imagination	=	Capacity to imagine SPAS situation actually happening to them
SPAS 1	=	Component 1: Inability to control the environment
SPAS 2	=	Component 2: Pain
SPAS 3	=	Component 3: Death and anaesthesia
SPAS 4	=	Component 4: Cancer and uncertainty
Total SPAS	=	Total SPAS score derived from the four components

7.6.2 SPAS and selected physical criterion measures

In Table 7.23 (a), a trend toward a inverse relationship between the total SPAS and length of hospital is apparent (significant at .01 level). Seemingly, the patients with higher degree of preoperative anxiety were discharged sooner. It might be that the patient with higher level of preoperative anxiety made more effort toward recovery room or on the other hand, the patients with lower level of pre-operative anxiety may have denied their exact feelings toward surgery; thus were not ready for the unpleasant effects of the process resulting in prolonged hospitalization. This will be discussed further in the next chapter. For both control and experimental group this relation-ships also evident (at .05 level of significance).

Apart from the above finding, there were no significant relation-ships between the total SPAS score and other selected physical criterion measures. In other words, postoperative measures such as complaint of pain, analgesic consumption, time in operating room and recovery room were independent from preoperative anxiety level.

7.6.3 The SPAS in relation to Daily Activity Checklist (DAC) and Patient Condition Evaluation (PCE) score

Lastly, correlations between the three major tests used in the study, SPAS score (preoperative anxiety level), PCE score (immediate postoperative condition) and DAC score (ability in adjusting back to daily activity after discharge) were investigated. The findings indicated that the three measures were independent of one another.

Table 7.23 Intercorrelations between the patients' preoperative anxiety level (SPAS) and selected physical recovery criterion measures

(a) Total group

Variables	1	2	3	4	5	6	7	8	9	10
1. Total SPAS										
2. SPAS 1	0.86***									
3. SPAS 2	0.86***	0.65***								
4. SPAS 3	0.84***	0.54***	0.77***							
5. SPAS 4	0.87***	0.74***	0.62***	0.60***						
6. Length of hospital stay	-0.37**	-0.32	-0.40*	-0.29*	-0.29*					
7. Time in operating room	-0.05	-0.10	-0.12	0.03	-0.02	0.25				
8. Time in recovery room	-0.08	-0.04	-0.24	-0.08	0.05	0.34*	0.39**			
9. Complaints of pain	-0.09	-0.07	-0.14	-0.08	-0.05	0.60***	0.09	0.15		
10. Pain relief given	-0.17	-0.13	-0.25	-0.12	-0.10	0.54**	0.43**	0.28*	0.65***	

* Significant at .05 level

** Significant at .01 level

*** Significant at .001 level

Table 7.23 (Cont'd)

(b) Control group

Variables	1	2	3	4	5	6	7	8	9	10
1. Total SPAS										
2. SPAS 1	0.83***									
3. SPAS 2	0.76***	0.52**								
4. SPAS 3	0.73***	0.40*	0.56**							
5. SPAS 4	0.86***	0.65***	0.50**	0.46*						
6. Length of hospital stay	-0.38*	-0.30	-0.40*	-0.27	-0.27					
7. Time in operating room	-0.05	-0.13	-0.14	0.11	-0.02	0.18				
8. Time in recovery room	-0.22	-0.20	-0.43*	-0.13	-0.03	0.37	0.44*			
9. Complaints of pain	-0.14	-0.13	-0.22	-0.07	-0.08	0.67***	0.01	0.15		
10. Pain relief given	-0.17	-0.17	-0.27	-0.03	-0.11	0.54**	0.47*	0.22	0.62***	

Table 7.23 (Cont'd)

(c) Experimental group

Variables	1	2	3	4	5	6	7	8	9	10
1. Total SPAS										
2. SPAS 1	0.92**									
3. SPAS 2	0.95***	0.85***								
4. SPAS 3	0.93***	0.75***	0.90***							
5. SPAS 4	0.92***	0.85***	0.80***	0.78***						
6. Length of hospital stay	-0.41*	-0.43*	-0.42*	-0.32	0.37*					
7. Time in operating room	-0.07	-0.06	-0.10	-0.08	0.02	0.47*				
8. Time in recovery room	0.09	0.12	0.03	0.04	0.14	0.19	0.40*			
9. Complaints of pain	-0.05	-0.03	-0.06	-0.04	0.49**	0.49	0.24	0.06		
10. Pain relief given	-0.19	-0.12	-0.25	-0.24	-0.11	0.53**	0.30	0.38*	0.73***	

* Significant at .05 level

** Significant at .01 level

*** Significant at .001 level

In other words there were no significant relationships existing between the three measures (details are shown in appendix 7.8).

However, between the SPAS and PCE, the anticipated relationship appeared to have a positive nature. This may be interpreted that the patients with higher anxiety in the preoperative period appeared to cope well in the immediate postoperative period. In a close examination of PCE score in relation to SPAS, there was a positive relation by supervising level nurse (see appendix 7.9 PCE 1, r total = 0.252 whereas r required at .05 level = 0.254). This was higher in the experimental group patients ($r = .39$, significant at .05 level) than of the control group ($r = .18$, $p > .20$). This finding may be interpreted that the patients with higher anxiety levels in the pre-operative period appeared to cope well in the immediate postoperative period. Since such evidence was found only in the experimental group, it may indicate that with special preoperative preparation, the experimental group patients could benefit from such a programme resulting in a better immediate postoperation condition as evaluated by the supervising level nurse even though the preoperative anxiety level was high.

The correlation coefficient between SPAS and DAC indicated an inverse relationship. However, without regarding its level of significance, this may be interpreted that patients with higher levels of preoperative anxiety appeared to have more difficulty in adjusting back to their daily routine resulting in a low DAC score.

Between DAC and PCE score, a low correlation did not give very much insight into the relationship, even though it indicated positive nature of the relationship, i.e. patients with better immediate post-operative condition demonstrated a better level of adjustment back to their daily routine after discharge. However, resulting from the finding that may be due to the number of subjects used, it can only be stated that the two variables were independent of each other, i.e. the better the patients' immediate postoperative condition did not indicate how well they adjusted back to their daily routine at home. Further investigation is suggested if the nature of such relationships is to be confirmed.

CHAPTER 8

CONCLUSIONS, DISCUSSION AND IMPLICATIONS FOR PRACTICE

8.1 Summary of the Results

In this study, it was predicted that those patients undergoing special preparation for surgery, that is structured preoperative teaching, would experience less stress and anxiety, demonstrate a better postoperative psychological state, and gain physical recovery sooner than those without special preparation. In general, the main hypothesis was supported, but some specific measures may require further evaluation before firm conclusions can be drawn. The specific results presented in chapters 6 and 7 are summarized in the following:

(1) The Surgical Patient Anxiety Scale performed well as a measure of situational anxiety. The postoperative SPAS score was significantly decreased in the experimental group as compared with the preoperative SPAS score whereas the postoperative score for the control group remained unchanged. Thus, the experimental patients with special preoperative preparation experienced less anxiety postoperatively than those who did not have any special preparation.

The correlation coefficient obtained for the preoperative and postoperative score was encouraging in terms of test reliability (r total = 0.64; r control = 0.52 and r experimental = 0.76, all at .001 level of significance). It may be argued that the

SPAS served as a measure of trait anxiety as well as situational anxiety. This will be discussed later in detail.

Since the SPAS showed only evidence of correlations with the major tests used in the study, i.e. PCE as evaluated by supervising level nurse (at .05 level), therefore further investigation of the use of the SPAS in this field is advisable, especially when being used as a predictor of patient's postoperative condition.

(2) The use of blood pressure and pulse rate as indicators of anxiety proved to be useful in this study. These indicators showed more positive deviations in the control of group patients than in the experimental group. The evidence that the experimental group showed significantly more decreased deviations from the baseline data may be confounded by the fact that baseline data were taken on admission day by the doctor. This "baseline data" may not be the "actual" blood pressure and pulse rate at all if one counted being visited and examined by the doctor as a stressful experience. The postoperative measure of blood pressure and pulse rate may simply reflect a return to "normal" values. In the control group, the postoperative level of both blood pressure and pulse were significantly higher from the baseline data. As the data were recorded for each day of hospitalization, it may be reasonable to infer that as their postoperative anxiety level remained unchanged (indicated by the SPAS), physiological indicators of anxiety remained in the "alarm stage" to an even greater extent than with the "baseline data" on admission day.

(3) Frequency in complaint of pain and analgesic consumption between the two groups was not statistically significant for the overall period, but in closer examination according to time, there was a marked difference between the control and experimental groups after the fourth postoperative day, i.e. the experimental group required less analgesic and showed fewer complaints of pain. It is possible that preinformation about pain and pain relief given to the experimental patients through the information booklet and group teaching-discussion might have affected their jusdgement about pain and when it was appropriate to seek pain relief resulting in more direct reference to pain. It was also found that experimental group patients ceased pain relief both parenteral and oral sooner than those of the control group.

(4) There was a significant difference in evidence of postoperative vomiting between the two groups. The control group patients appeared to have higher evidence of vomiting than the experimental group. Evidence of nausea was not sufficient to make comparison between the groups.

(5) The experimental group patients had less recorded evidence of postoperative complications than the control group patients during the twelve day postoperative period.

(6) The experimental patients appeared to have slept better compared to the control group patients although the actual amount of sedative consumption was not different between the two groups.

(7) The experimental group patients resumed normal body functions, i.e. bowel function and full mobility sooner than those of the control group patients.

(8) There was no difference between the two groups in terms of length of hospital stay, time elapsed before returning to work and difficulty in adjusting back to normal daily activity. The evidence that 54% of the control patients returned to their usual work-job within three weeks after discharge compared to 38% of the experimental group, may be due to the nature of their work or occupation. That is to say that patients who were housewives may return to household activities (which was regarded as a "job") sooner than those who were actually employed. Over half of the control group patients were housewives compared to 43% of the experimental group.

(9) From the independent nurse observers evaluation, patients' immediate postoperative condition (within 48 hours postoperatively) was much the same between the two groups. However, the data suggested that the experimental group patients appeared to communicate better than the control group during that period of time.

(10) Group composition has to be taken into consideration before one starts group teaching as it affects the learners' participation in the teaching-learning process and probably also their level of "learning".

From the above findings, the structured preoperative teaching programme was shown to be an effective tool in preparing patients for surgery with a view to promoting physical recovery and psychological welfare. The special feature of this programme was the use of a written document for providing information as well as face to face communication in the group learning situation.

8.2 Patient Physical Recovery and Psychological Welfare in Relation to Stress Theories and Anxiety

Selye (1956) introduced in Chapter 1 emphasized that stress is a state manifested by a specific syndrome. The syndrome is a specific configuration of physiological processes called the General Adaptation Syndrome (GAS). As work progressed, various physiological processes were also observed to characterize the GAS. The sequence of the GAS which passes through three phases; alarm, resistance and exhaustion reflected the bodies adaptation to the stressor(s). In the alarm reaction, it involves large territories of the body with no specific organ system coping with the stressor. During the resistance phase, adaptation is obtained as a result of the "optimum development of the most appropriate specific channel of defence. This "channel of defence" may be an organ system or physiological process. Gradually, the body returns to its steady state, i.e. recovery.

Associated with Selye's proposition is the concept of "cognitive appraisal" presented by Lazarus (1966) which the individual assesses oncoming stimuli along the contimuum from non-threatening to threatening. This appraisal process leads to one or more of four patterns of

response defined by Lazarus as : disturbance of affect; disruption of motor system; physiological changes and changes in cognitive functioning. Lazarus enumerated six groups of stimuli which will produce stress reactions. They are uncertainty about physical survival, threat to ones sense of identity, lack of ability to control ones environment, unavoidable pain and deprivation, disruption of community life and loss of loved ones. All of these apply to hospitalized patients in one way or the other.

Hospitalization and surgery are collective terms associated with a wide range of events and generally may be as stressful. Hospitalized patients have already experienced some physiological disturbances i.e. disease and illness (primary stress) which may have already affected their cognitive functioning. In the hospital surrounding (secondary stress), one tends not to think rationally and to become concerned with trivialities (Lazarus, (1966). Patient's perception of such events might not be reality oriented and this may exaggerate the degree of anxiety that they may have experienced. Too much anxiety interferes with the process of recovery. If optional recovery and the state of psychological well being of an individual is to be maintained, some kind of preparation and orientation has to be done right from the beginning.

Familiarity with the general and specific body responses to stressor in process of disease-adaptation is essential for the nurse in assessing patient's level of performance in the process of recovery. The specificity of the body responses to particular stressor give cues for nursing intervention as well as general body responses.

Indicators derived from Selye's approach to stress provide cues for assessing the patient's physical recovery while his conceptualization of stress gives a summation of the process of physical recovery. In the same time, Lazarus's approach to stress enables nurses to conceptualize the cognitive functioning process which occurs within an individual and such stress responses can be observed through different modes as previously stated.

Nursing is in a good position to integrate concepts derived from many branches of science into practice. Looking at quality of care from two major perspectives, physical recovery and psychological welfare, one can see places where stress and anxiety concepts can fit. Yet the two perspectives, physical recovery and psychological welfare are interrrelated concepts as well as the concept of mind-body interaction which has never been clearly distinguished from each other.

8.3 Evaluation of the Research Tools

8.3.1 The Surgical and Patient Anxiety Scale (SPAS)

As discussed in earlier chapters of the thesis an approach to measure anxiety in surgical patients by means of an S-R inventory had been introduced by earlier researchers. The present study demonstrated the effectiveness of SPAS - an instrument modelled on this earlier work. The SPAS is a modified format of the measure used by Hayward (1975). Situations (stimuli) were entirely substituted and added to so that it would be more specific to the purpose of the study.

Results of the SPAS used as a general measure of situational

anxiety were very encouraging. That is, the SPAS score of the experimental patient had significantly decreased in the postoperative period compared to that of the control group. An important factor here may be the patient cognitive appraisal (summing up of the situations) at different periods of time. In the control group, the patients' SPAS score remained unchanged in the postoperative period which may be interpreted that appraisal remained the same as in the preoperative period, e.g. patients had doubts, fears and uncertainties about the situations. Thus, the result suggested that the special preoperative preparation (i.e. the structured preoperative teaching programme) an independent variable in this study had affected the experimental group patients' cognitive functioning in a positive manner.

The advantages of the SPAS can be summarized as follows:

(1) The scale can be completed by patients from different backgrounds. The patients had no difficulty in identifying themselves with the situations, and using the modes of response offered. This was evident from the degree of imagination ($\bar{x}$ for the total group = 66.73 out of 100, ranging from 100 to 39 degree of imagination). Although every SPAS item may generally be regarded as potentially stressful, it was found that on average patients had actually experienced at least four of the SPAS situations, indicating their possible occurrence in clinical situations. One can therefore infer validation of the selection of the SPAS situations. The average score of 338.93 of the total 1000 (range = 200 - 613) indicated that having surgery and being hospitalized is still a stressful experience for most people, regardless of the type of

operation. The exception seemed to be the variable, age, in that older patients showed less anxiety than younger patients in coming to hospital.

(2) The range of scores obtained indicated a fairly wide discriminatory function. The SPAS offers an opportunity to examine at a deeper level in terms of individual differences to a specific situation.

(3) The SPAS may prove to be a suitable tool to locate the patients' specific problems or unconcealed fears, bringing such fears into the open. SPAS scores indicated that the subjects were most concerned about the possibility of cancer, uncertainty associated with diagnosis, loss of job, loss of organ and genetic factor (component 4 $\bar{x}$ = 94.33:appendix 8.1) following with anxiety resulting from death and anaesthesia, and physical environment. (Component 1, 3 : $\bar{x}$ = 89.48, 79.95 respectively). Pain was the factor least concerned in coming for an operation ($\bar{x}$ = 75.37). Details were shown in appendix 8.1).

(4) There was some evidence in the response pattern of the SPAS which was classified into two categories: physiological and psychological, that female patients were more inclined to make physiological responses while male patients demonstrated the opposite trend. Further investigation of the pattern should be carried out before any firm conclusion can be drawn.

(5) Use of a shorter form of the SPAS for any further investigation, expecially in the clinical situation with hospitalized patients,

is feasible. The most sensitive situations (items) can be selected according to the scores resulting from the present study, or from the content of items considered to be appropriate for a particular subject, or purpose of study.

It can be seen that the SPAS served well as a tool for measuring the general level of anxiety deriving from selected situations. Attempts were made to correlate SPAS with selected physiological indicators of anxiety i.e. blood pressures and pulse taken on admission It was found that these measures were independent from one another ($r = 0.09$, -0.10 and 0.06 between SPAS - pulse, SPAS - blood pressure and blood pressure - pulse respectively). This may be due to the fact that blood pressure and pulse were not taken at the same time as the SPAS was administered. The other limitation may be due to the size of the sample used ($n = 60$).

The incongruity between physiological indicators and psychological measures, e.g. projective techniques, self report, objective rating by others and objective behavioural rating was evident in literature concerning this area of research, even among the physiological indicators themselves. In the study by Thompson (1972) with presurgical children, it was found that pulse and respiration rate which were used as physiological measures showed insignificant correlation with subjective anxiety level. Pride (1968) found that there was no significant relationship between an adrenal measure index (i.e. 24 hour urine criterion measure of urine potassium) and the IPAT Anxiety Scale used. Pride gave an explanation that it may be that there were some differences between the concept of stress defined in her study and the

factorially - defined concept of anxiety used in preparing the IPAT instrument. There is also the possibility that a problem was presented by some differences in the sensitivity of the two measures; that is, the measure in terms of mEg. for urine potassium, and the measure in terms of gross raw scores for the IPAT questionnaire. These problems may be in line with the present study. Minckley (1972) also found that the fluctuation of palmar sweat on the basis of external stimuli did not appear even to correspond with the patients' self report anxiety and suggested further investigation on this. The incongruity between different measures of anxiety was not found only between physiological or psychological-oriented measures, but alsp between physiological measures as in the study by Munday (1973) that the changes in heart rate are not significantly related to changes in sweat responses. Munday concluded that through the action of adrenaline may be related to physiological response, it is not possible to predict the degree of response that will be manifest even by knowing the degree of response in another area. It is also true that the expected relationship will be distorted by the individuality of response.

Using a single response alone e.g. pulse rate proved to be satisfactory as shown in a study by Sczekalla (1973) using only pulse rate as indicator of stress reaction of coronary care unit patients exposed to resusitation procedures on other patients. The study found that there was a significant difference in pulse rate between the exposed and non exposed patients. However, if general responses to stress are to be understood, attempts should be made toward examining various responses and their relations to one another.

Evidence of difficulty in anxiety measurement was shown in a study by Hartlage (1972) who found that there were no significant relationships between the four techniques of anxiety measurement (i.e. projective techniques, self report, objective rating by other and objective behavioural index) the four techniques do not reflect equivalent in measurement of anxiety. Johnson and Leventhal (1971) suggested that emotionally (e.g. anxiety) should be treated as a response and these responses and instrumental responses can be independent.

Further comprehensive investigation is suggested for the possible relationhsip between the SPAS and any other physiological indicators of anxiety.

The other useful feature of the SPAS apart from using it as an indicator of anxiety, it can be used as a possible predictive tool for postoperative condition. There is some evidence that the SPAS had positive relationship to immediate postoperative condition (PCE) as viewed by supervisory nurses (significant at .05 level). However, comparison ot the PCE as evaluated by bedside care giving nurse and DAC with the SPAS, the results failed to support such a relationship. Again, this may be due to the limited sample, and various other factors such as sensitivity and accuracy of the nurse perception of the patient condition, and the sensitivity of the tool used.

Correlation coefficient between pre and postoperative specific SPAS (r total = 0.64, significant at .001 level) indicated that to some stinuli occurring at different periods of time, there is some

consistency in the patient's immediate responses. This suggests that anxiety that is situationally derived was associated with the subjects personality factor (trait or anxiety process).

In comparing the SPAS to the other inventories of its kind, e.g. Hayward (1975) used the modified S-R Inventory as an indicator to measure anxiety proneness (trait anxiety). He compared the tool with the EPI which yielded a positive relationship (r = 0.49 significant at .01 level). Hayward claimed that the modified S-R Inventory was½ proved to be a reliable measure. The SPAS emphasized the subjects immediate responses to a situation by asking them to describe how they felt at that moment. This approach was also employed by Zuckerman (1960). The limitation in the use of SPAS in this study was that it was not validated by comparison with standardized measures, apart from its accepted general S-R responses and examination of its structure and content validity by a panel of judges (Chapter 5). The reliability depends on the individual subjects acceptance and awareness of their own stress response to particular stressors.

There was some evidence both in the control and experimental groups that the SPAS scores may be influenced by denial and repression of feelings, i.e. some subjects who defend against their existing anxiety may score low on the SPAS items. In this case, extremes in both ends, very low or very high anxiety may produce similar scores.

In this study, specific SPAS which were the four top scored items could reproduce the general SPAS (r = 0.86). However, a wide range of

situations and modes of response should be offered if the nature of anxiety in surgical patients is to be understood fully. This is the advantage of the SPAS or inventories of this kind, that specific causes of anxiety can be located and this investigated directly, whereas other measures give a general idea of subjects state of anxiety without any reference to the causes of the problem.

8.3.2 Patient Condition Evaluation Form (PCE)

The use of an independent nurse observer in assessing patient's immediate postoperative condition was found to be satisfactory in this study in terms of procedure. A single sheet evaluation form was convenient for staff to use and can be completed quickly. The level of agreement between both groups of nurses was significantly high ($r = 0.63$, significant at .001 level). This was particularly so in the control group ($r = .88$). The measure was shown to be consistent even with different observers.

The results of the PCE score between the control and experimental group did not yield any differences in immediate postoperative condition, even though other indices relating to postoperative symptoms and complications, e.g. vomiting, difficulty in breathing were found to be significantly higher than the control group. Again, the problem may be with subjective perception of the nurses who may perceive these symptoms as "normal" postoperative occurrences without regarding the quantitative aspect of the situation e.g. frequency of vomiting. Once again, the construction of a more comprehensive scale which encompasses fine differences would seem a possibility.

8.3.3 Daily Activity Checklist (DAC)

The use of the patient subjective evaluation of his condition with reference to performance in particular activities also yielded encouraging results in terms of administering the test. Most patients were able to relate to the selected activities and had no difficulties with the rating. This may be due to the fact that the activities selected were described in a usual manner, unlike other tests which may describe a range of motions or limitation of motor activities which require professional assessment rather than subject perception. Since it depended on the patients' subjective evaluation of their performance in particular activities, it required the subjects' ability to distinguish between "no difficulty", " a little difficult" or else. It may be argued that some patients who actually had "a little difficulty" might rate at "no difficulty" if he/she were still able to maintain that particular activity. The patients may not have been able to differentiate between different points on the scale.

However, the advantage of the DAC is that its instruction and content was simple for the patient to follow. There was no evidence of difficulty in understanding and rating from the patients general comments.

8.3.4 Other physical recovery and psychological welfare measures

Physical recovery indicators selected for use in the study were those widely used in other studies in this field. In general the results between control and experimentsl group showed that the experimental group experienced less anxiety and demonstrated better

psychological well being, less physiological disturbances in the post-operative period.

One piece of evidence that requires further discussion is the evidence of postoperative pain in terms of complaints and analgesic consumption. The results revealed that for experimental group patients, complaints of pain and analgesic consumption were high in the first three postoperative days and subsided quickly in the subsequent time. Pre-information of pain and its characteristics might have played a major part in this. The significance of pre-information on peoples perception was shown in the study by McIntosh (1979). These results were in different form from those of other previous studies which usually found the use of analgesic to be less in the experimental group than in the control group, right from the immedaite postoperative period. However, it is the contention of this study that pain is best perceived by the one who experiences it and that pain relief medication is the legitimate method of relieving pain (Masson, 1967) providing that the pain is physiological in nature and is not influenced or exaggerated by any psychological factors. In other words, the preoperative preparation may have resulted in more accurate perception of pain by the patients, and more appropriate treatment of it.

Other measures were vomiting and postoperative complications including selected physiological indicators, i.e. blood pressure and pulse. The results gave firm support to the general hypothesis that special preoperative teaching helps to improve patient psychological well being and promote physical recovery.

7.3.5 Use of patients' records, nurses notes as a secondary source of data

Nurses' notes were used as a secondary source of data in combination with the other form of recording including the patients' total records. As nurses' notes were completed by registered staff in most wards, they can be regarded as records of professional jusgement of the nurse and are an important aspect of the special contribution of continuity of care. They represented continuous observation of the patient condition. It was anticipated that the nurse would record the information that she thinks significant to the process of patient care.

Pain records in terms of complaint of pain and analgesic given is a common notation found in most surgical wards. Mooney (1974) in her study suggested a consistency of observation and record of pain in the nurses' notes. Notation concerned the kind and amount of analgesic, time of administration of p.r.n. analgesics, description of pain and notation of patient responses to analgesic therapy. This pattern of nurses' notes was found to be similar throughout the study. It seemed to the researcher to reflect a ritualistic pattern of description. There was no significant evidence of other nursing interventions involving pain relief measures apart from administering medication. Other things may have been done, but were not recorded. It seemed that record of medication given was judged to be more important. Especially with regard to analgesic consumption, the recording appeared to be reliable. Data on analgesic consumption was obtained from other sources i.e. nurses' record of medication form and the record book of

narcotic drugs given. Record of type and amount of analgesic, and the time given was a strict routine under the hospital policy.

Other significant events happening to patients while in hospital together with general comment on physical status, psychological state, pattern of sleep and bowel function were likely to be recorded. The only two aspects of patient condition which were found to be less evident in the nurses' notes were record of resuming normal diet and record of bladder function. Again, this may be due to the fact that there were no obvious difficulties in any of these areas, and therefore these indicators were disregarded or considered to be less important in the nursing record.

The use of patient charts for obtaining physiological indicators, i.e. blood pressure and pulse was found to be satisfactory. These two measures were more likely to be recorded than was respiration rate. The chart was recognized still as the primary means of communication of this aspect of a patient's condition and progress and recorded elsewhere (Walker, 1967). The criteria established for classifying deviations (e.g. 10 mmHg for blood pressure) appeared to be adequate in allowing for variations with respect to time and observer error. Mitchell (1971) reported that mean difference between blood pressure taken by two groups of nurses was 7 mmHg or less. However, it was found that such a difference was not significant. The same study also found that diastolic pressure was more subject to the differences than was systolic pressure; the mean difference of diastolic pressure recorded was greater than that for systolic pressure.

Overall, the use of secondary sources of data, i.e. patient records and nurses' notes was shown to be sufficient and appropriate for the purpose of the study. This suggests that it is worthwhile always for a nurse researcher in a clinical situation to consider the use of existing data and records.

8.4 Relationships Between Preoperative Anxiety and Postoperative Recovery

The introductory chapter traced the positions of the relationship between preoperative fear and anxiety and postoperative recovery which can be found in the literature. Simply stated one holds that there is an inverse linear relationship between preoperative level of anxiety and postoperative recovery and adjustment. The greater the fear and anxiety, the poorer the recovery. Clinical studies based on this view attempt to reduce or minimize high levels of anxiety by some type of special psychological preparation, and evaluate the procedure in terms of one or two criterion measures (e.g. Dumas and Leonard, 1963; Egbert et al., 1964). The other position calls for a curvilinear relationship between preoperative anxiety and postoperative recovery; both high and low levels of anxiety are associated with more difficult postoperative convalescence (Janis, 1958).

In the present study, the significant difference in preoperative and postoperative anxiety level of the experimental group and their pattern of recovery in most respects gave support to the first theoretical position. At the same time, the other proposition can not be dismissed entirely. There was some evidence that patients with very high or

very low levels of anxiety (indicated by SPAS) were slower to recover and had more difficulties in adjusting back to mormal or usual body functions, or activities in the postoperative period.

In the present study, it was predicted that there is a relationship between patient anxiety and some aspects of physical recovery. Between the three major tests representing anxiety (SPAS), immediate post-operative condition (PCE) and patient condition after discharge (DAC), no significant correlations were found apart from an evidence between the SPAS anf the PCE evaluated by supervising level nurse. Thus, preoperative anxiety level may be used as a prediction for immediate postoperative condition, but in an inverse pattern of relationship, i.e. high anxiety level indicated better adjustment in the immediate postoperative period. As this relationship was significant in the experimental group only, it reflected the benefit of the preoperative teaching programme which the experimental patients had undergone, especially for the high anxiety patients.

Opposed to this, low anxiety patients demonstrated difficulties in the immediate post operative period. The sensitivity of the SPAS may not be able to detect denial. The effect of denial on situational anxiety and patients perception of their current health status was shown in the study by Gentry, Foster and Haney (1972) with patients admitted to the coronary care unit. The non deniers manifested improvement in perceived current health status (i.e. at that moment in hospital) relative to admission day and only the non deniers showed a decrease in situational anxiety as a function of time in the unit. Patients'

denial of fear and anxiety on admission, therefore, may easily affect or disrupt the process of "getting well" unless such attitude has changed. This suggested that more additional preparation and time should be spent on patients who score "low" anxiety. These patients might need to be dealt with on a one-to-one basis in addition to what has been provided so far in terms of preoperative preparation.

8.5 The Structural Preoperative Teaching Programme as Independent Variable

According to the results, the proposed structured preoperative teaching programme was shown to be an effective tool in improving physical recovery and psychological welfare of patients. The organization of content for the booklet "preparation for surgery" appeared to provide a sufficient information which may be applied and modified to suit the characteristics of any particular hospital. The booklet in fact could be sent to patients prior to their admission to hospital, and learning could then be reinforced in the group situation. However, before such a practice was implemented it would be necessary to know the possible effects on the subjects anxiety level before coming to hospital. In the present study this effect could not have been monitored.

There was an impression that the level of communication between patients and nurses was better in the experimental patients than with the control group patients (see Section 7.4, Chapter 7). According to the independent nurse observers, the experimental group was rated higher on communication ability than the control group. It could be argued that using a group approach in preoperative teaching enabled the

nurse to open the communication line between nurses and patients. Group teaching can be a more efficient approach than one to one teaching in that more patients receive attention by fewer nurses. Spending less than half an hour period of time with patients in a group may prove to be an effective "investment" in achieving high standard of quality of care with surgical patients. At the same time the nurse can, in addition, spend more time on a one-to-one basis for the "special cases" as she observed them in the group situation.

Due to the demand of administrative tasks and other nursing functions during the preoperative period, nurses working in a busy ward may concentrate on only physical aspects of care with resultant neglect of psychological aspects. At the same time a surgical patient will have to go through various preoperative proedures, e.g. X-rays and blood tests etc., and even the basic type of information, e.g. hospital and ward routines may easily be omitted. In the present study, since complete and simply stated information involved in the surgery and the pre and postoperative expectations for the patients were provided for each patient in written form, the patient could absorb a little at a time or reread it to obtain better understanding without having to relate to hospital personnel in the process of information getting. The patient could develop her/his questions to ask for further clarification in the group teaching session.

It is proposed that there should be a time soon after admission when nurses can sit and talk with preoperative patients. Using a group approach enables patients to learn from one another, so enriching their

knowledge and understanding of treatment and care as well as sharing mutual feelings toward surgery and hospitalization.

Patients' attitudes toward the preoperative programme itself were mainly positive. One aspect that needs to be stated here is that the patient level of learning was not being assessed directly in the present study, but in a rather indirect approach. In the group analysis (Chapter 6), level of patient participation was appreciated by the researcher, even though it varied according to the group composition. The content analysis showed that patients shared with one another their knowledge and experience, asking for information etc, and these were regarded in the study as active learning. Some studies have assessed the patients' level of learning by asking patients to recall aspects of the teaching or instruction in the postoperative period. This type of assessment can be valid only when the patient is in a suitable condition to undertake the task.

The use of audiovisual aids, that is, the sound and slide presentation as a teaching aid was appreciated by most patients. It was a convenient method which served well to stimulate motivation for learning. In the absence of the audiovisual equipement, the prepared scripts could be converted to other types of presentation, e.g. photograph, flip chart.

8.6 Implications for Nursing Practice

The overall results supported the general hypothesis that special preparation for surgery in the form of a structured preoperative teaching programme, can reduce stress and anxiety occasioned by surgery and hospitalization and be associated with improved post-operative psychological welfare and more rapid physical recovery (Chapter 5). The wide range of physical recovery indicators and psychological welfare measures used in the study enables nurses to see the benefits of preoperative teaching additional to those claimed in previous literature. The emphasis of the present study was on the encouragement of patients to engage in the "learner" role. With this aim in mind patients were provided with a written document in the first place and this learning was reinforced in the group situation. In comparison with other studies, the present preoperative teaching programme may be considered as one of the most economical in terms of time spent with patients (average time spent in patient teaching = 17.83 minutes:see Chapter 6), and yet it yielded satisfactory results in terms of patient outcome in both physical and psychological aspects.

Lack of preoperative teaching is still evident in many hospitals even though its value with respect to patient outcome is acknowledged by many nurse researchers. Problems seen in the implementation of such a scheme are:

In the preparatory phase, agreement has to be reached and policy stated by various members of the health team. Both intra and inter-

professional attitude changes may also be required to recognize that the nurse is capable of teaching. Nurses may choose to ignore this problem of reorganization of function, but such an attitude needs to be changed if nursing is to exist for the benefit of the patient.

Implementation of the proposed preoperative teaching programme should not be a difficult process providing that the interdepartmental communication is efficient, especially between surgical wards. The use of resources that are available already, e.g. clinical specialist or surgical supervisor as nurse coordinator is encouraged. Each surgical ward could take a turn to do the teaching, thus providing opportunities for all staff to become actively involved with the programme, and to examine and improve their teaching competency and skills.

In the actual group teaching session, a registered nurse (i.e. staff nurse) is required for the task of the group leader. She/he needs to be competent with respect to both technical (e.g. routine procedures) and professional knowledge (e.g. involving nursing care process and knowledge of disease-illness process) while engaging in the role of an "information giver" in the group interaction process. The place for less experienced nurses or nursing students may be either as a co-leader or a participant observer in order to gain some teaching experience in a group situation before engaging in a more comprehensive role, i.e. a group leader.

The physical recovery and psychological welfare of surgical patients was the central interest of this study. Structured preoperative

teaching may be regarded as an educative tool as well as a preventive tool in this aspect of surgical patient care. It proved a useful addition to the psychological aspects of patient care which are often recognized as inadequate in a surgical ward setting.

It is therefore hoped that the present study will make some contribution toward creating more situations where high quality care is planned and given to patients.

8.7 Recommendations for Further Studies

It has been suggested that there is a need for continuing development and refinement of instruments to measure the outcome of preoperative teaching especially in relation to anxiety measurement. Further investigation likely to augment the body of nursing knowledge concerning the stress of illness, surgery and the role of preoperative include the following:

(1) To measure the extent to which patients actually make use of the information provided preoperatively, a replication of this study using additional objective criteria is suggested. Such measures could include evidence of patient-initiated postoperative exercises as well as tests of recall and verbal statements concerning the content of the teaching.

(2) The relevance of age as a variable, for instance, the older patients experience less anxiety as compared to younger patients or are they perhaps less ready to express it?

(3) The significance of time in preparation for surgery in relation to patient recovery and welfare, for instance, does it make any difference in terms of patient outcome if preoperative preparation is done some time prior to surgery e.g. the booklet "Preparation for Surgery" is sent to the patients before admission to hospital?

(4) Level of patient participation in relation to the postoperative recovery and welfare, i.e. how does level of patient participation (both structural and interactive) in the group teaching session relate to rate of recovery and psychological welfare?

(5) Other important questions concern issues such as what type of preoperative nursing intervention should be offered to the "low anxiety" patients? Is the same teaching programme beneficial to patients with varying degrees of anxiety?

(6) The significance of denial in relation to the "low" level of anxiety as indicated by instrumental measures, and its relationship to patient outcome in terms of physical recovery and welfare.

APPENDICES

APPENDIX 5.1

SURGICAL PATIENT ANXIETY SCALE

(SPAS)

These questions are a way of finding out how people react to different situations. The situations presented in each part are examples of things that can happen to a surgical patient during his time in the hospital. You may have experienced these, or if you have not, then you can perhaps imagine the situation. For each situation, ask yourself how you feel about it, then select the responses that come closest to describing your reaction by making a circle (O) around that number. Response choices range from very much (5) to not at all (1).

Now

(1) Write your name at the bottom of this page

(2) Answer every item. There are no right or wrong answers. We are only concerned with your reaction to the situations.

(3) Imagine the situation as if it is happening to you and answer them according to the way you feel now.

(4) When you have completed the form, place it in the envelope provided and return it to the Charge Nurse or any of the Staff Nurses. The answers you give will be confidential.

YOUR NAME_____

YOUR WARD_____

YOUR DOCTOR_____

COMPONENT 1

SITUATION 1.1 I waited for the doctor in his room. It was gloomy and the room was very small. I was alone.

A. (1) This has happened to me ☐ This has never happened to me ☐

(2) I can easily imagine what it would be like 5 4 3 2 1 I find it very hard to imagine

---

B. (3) My heart starts pounding

Very much 5 4 3 2 1 Not at all

(4) My mouth feels dry

Very much 5 4 3 2 1 Not at all

(5) I break into a cold sweat

Very much 5 4 3 2 1 Not at all

(6) I have "butterflies" and feel sick

Very much 5 4 3 2 1 Not at all

(7) I feel shaky and weak in my knees

Very much 5 4 3 2 1 Not at all

(8) I feel angry with myself

Very much 5 4 3 2 1 Not at all

(9) I feel irritated and annoyed

Very much 5 4 3 2 1 Not at all

(10) I feel I need to talk to someone

Very much 5 4 3 2 1 Not at all

(11) I wish I could get away from it

Very much 5 4 3 2 1 Not at all

(12) I feel frightened

Very much 5 4 3 2 1 Not at all

(13) I feel _____ (others you may add)

Very much 5 4 3 2 1 Not at all

SITUATION 1.2 The doctor said to me "you must have an operation before it is too late".

A. (1) This has happened to me ☐ This has never happened to me ☐

(2) I can easily imagine what it would be like 5 4 3 2 1 I find it very hard to imagine

---

B. (3) My heartstarts pounding

Very much 5 4 3 2 1 Not at all

(4) My mouth feels dry

Very much 5 4 3 2 1 Not at all

(5) I break into a cold sweat

Very much 5 4 3 2 1 Not at all

(6) I have "butterflies" and feel sick

Very much 5 4 3 3 1 Not at all

(7) I feel shaky and weak in my knees

Very much 5 4 3 2 1 Not at all

(8) I feel angry with myself

Very much 5 4 3 2 1 Not at all

(9) I feel irritated and annoyed

Very much 5 4 3 2 1 Not at all

(10) I feel I need to talk to someone

Very much 5 4 3 2 1 Not at all

(11) I wish I could get away from it

Very much 5 4 3 2 1 Not at all

(12) I feel frightened

Very much 5 4 3 2 1 Not at all

(13) I feel _____ (others you may add)

Very much 5 4 3 2 1 Not at all

SITUATION 1.3 The family said to me "there is nothing much we can do, except do what the doctor has told you"

A. (1) This has happened to me ☐ This has never happened to me ☐

(2) I can easily imagine what it would be like 5 4 3 2 1 I find it very hard to imagine

---

B. (3) My heart starts pounding

Very much 5 4 3 2 1 Not at all

(4) My mouth feels dry

Very much 5 4 3 2 1 Not at all

(5) I break into a cold sweat

Very much 5 4 3 2 1 Not at all

(6) I have "butterflies" and feel sick

Very much 5 4 3 2 1 Not at all

(7) I feel shaky and weak in my knees

Very much 5 4 3 2 1 Not at all

(8) I feel angry with myself

Very much 5 4 3 2 1 Not at all

(9) I feel irritated and annoyed

Very much 5 4 3 2 1 Not at all

(10) I feel I need to talk to someone

Very much 5 4 3 2 1 Not at all

(11) I wish I could get away from it

Very much 5 4 3 2 1 Not at all

(12) I feel frightened

Very much 5 4 3 2 1 Not at all

(13) I feel _____ (others you may add)

Very much 5 4 3 2 1 Not at all

SITUATION 1.4 The lady from the laboratory took what seemed to be a lot of blood from my arm. Then she said "this should be enough, if not I'll have to try again."

A. (1) This has happened to me ☐ This has never happened to me ☐

(2) I can easily imagine what it would be like 5 4 3 2 1 I find it very hard to imagine

---

B. (3) My heart starts pounding

Very much 5 4 3 2 1 Not at all

(4) My mouth feels dry

Very much 5 4 3 2 1 Not at all

(5) I break into a cold sweat

Very much 5 4 3 2 1 Not at all

(6) I have "butterflies" and feel sick

Very much 5 4 3 2 1 Not at all

(7) I feel shaky and weak in my knees

Very much 5 4 3 2 1 Not at all

(8) I feel angry with myself

Very much 5 4 3 2 1 Not at all

(9) I feel irritated and annoyed

Very much 5 4 3 2 1 Not at all

(10) I feel I need to talk to someone

Very much 5 4 3 2 1 Not at all

(11) I wish I could get away from it

Very much 5 4 3 2 1 Not at all

(12) I feel frightened

Very much 5 4 3 2 1 Not at all

(13) I feel _____ (others you may add)

Very much 5 4 3 2 1 Not at all

SITUATION 1.5 Another patient came over to see me and said "I heard the nurse say that you are going to have surgery tomorrow, so I came to talk to you."

A. (1) This has happened to me ☐ This has never happened to me ☐

(2) I can easily imagine what it would be like 5 4 3 2 1 I find it very hard to imagine

---

B. (3) My heart starts pounding

Very much 5 4 3 2 1 Not at all

(4) My mouth feels dry

Very much 5 4 3 2 1 Not at all

(5) I break into a cold sweat

Very much 5 4 3 2 1 Not at all

(6) I have "butterflies" and feel sick

Very much 5 4 3 2 1 Not at all

(7) I feel shaky and weak in my knees

Very much 5 4 3 2 1 Not at all

(8) I feel angry with myself

Very much 5 4 3 2 1 Not at all

(9) I feel irritated and annoyed

Very much 5 4 3 2 1 Not at all

(10) I feel I need to talk to someone

Very much 5 4 3 2 1 Not at all

(11) I wish I could get away from it

Very much 5 4 3 2 1 Not at all

(12) I feel frightened

Very much 5 4 3 2 1 Not at all

(13) I feel _____ (Others you may add)

Very much 5 4 3 2 1 Not at all

COMPONENT 2

SITUATION 2.1 The patient next to me woke up during the night. He had been dreaming that someone was making a cut through his body. "It was very painful for me, even though it was only a dream, but it is really going to happen to you."

A. (1) This has happened to me ☐ This has never happened to me ☐

(2) I can easily imagine what it would be like 5 4 3 2 1 I find it very hard to imagine

---

B. (3) My heart starts pounding

Very much 5 4 3 2 1 Not at all

(4) My mouth feels dry

Very much 5 4 3 2 1 Not at all

(5) I break into a cold sweat

Very much 5 4 3 2 1 Not at all

(6) I have 'butterflies' and feel sick

Very much 5 4 3 2 1 Not at all

(7) I feel shaky and weak in my knees

Very much 5 4 3 2 1 Not at all

(8) I feel angry with myself

Very much 5 4 3 2 1 Not at all

(9) I feel irritated and annoyed

Very much 5 4 3 2 1 Not at all

(10) I feel I need to talk to someone

Very much 5 4 3 2 1 Not at all

(11) I wish I could get away from it

Very much 5 4 3 2 1 Not at all

(12) I feel frightened

Very much 5 4 3 2 1 Not at all

(13) I feel _____ (Others you may add)

Very much 5 4 3 2 1 Not at all

SITUATION 2.2 The doctor said "You won't know anything. You will be under the anaesthetic when we start the operation."

A. (T) This has happened to me ☐ This has never happened to me ☐

Z (2) I can easily imagine what it would be like 5 4 3 2 1 I find it very hard to imagine

---

B. (3) My heart starts pounding

Very much 5 4 3 2 1 Not at all

(4) My mouth feels dry

Very much 5 4 3 2 1 Not at all

(5) I break into a cold sweat

Very much 5 4 3 2 1 Not at all

(6) I have "butterflies" and feel sick

Very much 5 4 3 2 1 Not at all

(7) I feel shaky and weak in my knees

Very much 5 4 3 2 1 Not at all

(8) I feel angry with myself

Very much 5 4 3 2 1 Not at all

(9) I feel irritated and annoyed

Very much 5 4 3 2 1 Not at all

(10) I feel I need to talk to someone

Very much 5 4 3 2 1 Not at all

(11) I wish I could get away from it

Very much 5 4 3 2 1 Not at all

(12) I feel frightened

Very much 5 4 3 2 1 Not at all

(13) I feel _____ (others you may add)

Very much 5 4 3 2 1 Not at all

SITUATION 2.3 The Nurse said 'Having a surgical wound means that body tissues are injured, so you have to accept the fact that you are likely to have some pain."

A. (1) This has happened to me ☐ This has never happened to me ☐

(2) I can easily imagine what it would be like 5 4 3 2 1 I find it very hard to imagine

---

B. (3) My heart starts pounding

Very much 5 4 3 2 1 Not at all

(4) My mouth feels dry

Very much 5 4 3 2 1 Not at all

(5) I break into a cold sweat

Very much 5 4 3 2 1 Not at all

(6) I have "butterflies" and feel sick

Very much 5 4 3 2 1 Not at all

(7) I feel shaky and weak in my knees

Very much 5 4 3 2 1 Not at all

(8) I feel angry with myself

Very much 5 4 3 2 1 Not at all

(9) I feel irritated and annoyed

Very much 5 4 3 2 1 Not at all

(10) I feel I need to talk to someone

Very much 5 4 3 2 1 Not at all

(11) I wish I could get away from it

Very much 5 4 3 2 1 Not at all

(12) I feel frightened

Very much 5 4 3 2 1 Not at all

(13) I feel _____ (others you may add)

Very much 5 4 3 2 1 Not at all

SITUATION 2.4 I felt a sharp pain rising from the operation site and spreading through my body

A. (1) This has happened to me ☐ This has never happened to me ☐

(2) I can easily imagine what it would be like 5 4 3 2 1 I find it very hard to imagine

---

B. (3) My heart starts pounding

Very much 5 4 3 2 1 Not at all

(4) My mouth feels dry

Very much 5 4 3 2 1 Not at all

(5) I break into a cold sweat

Very much 5 4 3 2 1 Not at all

(6) I have "butterflies" and feel sick

Very much 5 4 3 2 1 Not at all

(7) I feel shaky and weak in my knees

Very much 5 4 3 2 1 Not at all

(8) I feel angry with myself

Very much 5 4 3 2 1 Not at all

(9) I feel irritated and annoyed

Very much 5 4 3 2 1 Not at all

(10) I feel I need to talk to someone

Very much 5 4 3 2 1 Not at all

(11) I wish I could get away from it

Very much 5 4 3 2 1 Not at all

(12) I feel frightened

Very much 5 4 3 2 1 Not at all

(13) I feel _____ (others you may add)

Very much 5 4 3 2 1 Not at all

SITUATION 2.5 The patient next door said "I hope that you will be lucky enough not to have pain. I had terrible pain, it was awful!"

A. (1) This has happened to me ☐ This has never happened to me ☐

(2) I can easily imagine what it would be like 5 4 3 2 1 I find it very hard to imagine

---

B. (3) My heart starts pounding

Very much 5 4 3 2 1 Not at all

(4) My mouth feels dry

Very much 5 4 3 2 1 Not at all

(5) I break into a cold sweat

Very much 5 4 3 2 1 Not at all

(6) I have "butterflies" and feel sick

Very much 5 4 3 2 1 Not at all

(7) I feel shaky and weak in my knees

Very much 5 4 3 2 1 Not at all

(8) I feel angry with myself

Very much 5 4 3 2 1 Not at all

(9) I feel irritated and annoyed

Very much 5 4 3 2 1 Not at all

(10) I feel I need to talk to someone

Very much 5 4 3 2 1 Not at all

(11) I wish I could get away from it

Very much 5 4 3 2 1 Not at all

(12) I feel frightened

Very much 5 4 3 2 1 Not at all

(13) I feel _____ (others you may add)

Very much 5 4 3 2 1 Not at all

COMPONENT 3

SITUATION 3.1 The man in the next room died last night. I heard someone say "he is too old for that type of operation" and I thought of myself.

A. (1) This has happened to me ☐ This has never happened to me ☐

(2) I can easily imagine what it would be like 5 4 3 2 1 I find it very hard to imagine

---

B. (3) My heart starts pounding

Very much 5 4 3 2 1 Not at all

(4) My mouth feels dry

Very much 5 4 3 2 1 Not at all

(5) I break into a cold sweat

Very much 5 4 3 2 1 Not at all

(6) I have 'butterflies" and feel sick

Very much 5 4 3 2 1 Not at all

(7) I feel shaky and weak in my knees

Very much 5 4 3 2 1 Not at all

(8) I feel angry with myself

Very much 5 4 3 2 1 Not at all

(9) I feel irritated and annoyed

Very much 5 4 3 2 1 Not at all

(10) I feel I need to talk to someone

Very much 5 4 3 2 1 Not at all

(11) I wish I could get away from it

Very much 5 4 3 2 1 Not at all

(12) I feel frightened

Very much 5 4 3 2 1 Not at all

(13) I feel _____ (Others you may add)

Very much 5 4 3 2 1 Not at all

COMPONENT 3.2 I was reading that people can stop breathing while having a general anaesthetic, especially someone who has had difficulty in breathing before. Obstructed breathing increases risk when one goes under general anaesthesia.

A. (1) This has happened to me ☐ This has never happened to me ☐

(2) I can easily imagine what it would be like 5 4 3 2 1 I find it very hard to imagine

---

B. (3) My heart starts pounding

Very much 5 4 3 2 1 Not at all

(4) My mouth feels dry

Very much 5 4 3 2 1 Not at all

(5) I break into a cold sweat

Very much 5 4 3 2 1 Not at all

(6) I have "butterflies" and feel sick

Very much 5 4 3 2 1 Not at all

(7) I feel shaky and weak in my knees

Very much 5 4 3 2 1 Not at all

(8) I feel angry with myself

Very much 5 4 3 2 1 Not at all

(9) I feel irritated and annoyed

Very much 5 4 3 2 1 Not at all

(10) I feel I need to talk to someone

Very much 5 4 3 2 1 Not at all

(11) I wish I could get away from it

Very much 5 4 3 2 1 Not at all

(12) I feel frightened

Very much 5 4 3 2 1 Not at all

(13) I feel _____ (Others you may add)

Very much 5 4 3 2 1 Not at all

COMPONENT 3.3 I was on the operating table surrounded by several people. They were talking with each other in a very quiet manner. The light above me hurt my eyes. I would have liked to say something, but they seemed too busy. I asked myself, "is this my last chance? Am I going to survive?"

A. (1) This has happened to me ☐ This has never happened to me ☐

(2) I can easily imagine what it would be like 5 4 3 2 1 I find it very hard to imagine

---

B. (3) My heart starts pounding

Very much 5 4 3 2 1 Not at all

(4) My mouth feels dry

Very much 5 4 3 2 1 Not at all

(5) I break into a cold sweat

Very much 5 4 3 2 1 Not at all

(6) I have "butterflies" and feel sick

Very much 5 4 3 2 1 Not at all

(7) I feel shaky and weak in my knees

Very much 5 4 3 2 1 Not at all

(8) I feel angry with myself

Very much 5 4 3 2 1 Not at all

(9) I feel irritated and annoyed

Very much 5 4 3 2 1 Not at all

(10) I feel I need to talk to someone

Very much 5 4 3 2 1 Not at all

(11) I wish I could get away from it

Very much 5 4 3 2 1 Not at all

(12) I feel frightened

Very much 5 4 3 2 1 Not at all

(13) I feel _____ (Others you may add)

Very much 5 4 3 2 1 Not at all

COMPONENT 3.4 I felt coldness pouring over my face and smelt something very strong. Within a few seconds, my vision became blurred and I couldn't move any part of my body.

A. (1) This has happened to me ☐ This has never happened to me ☐

(2) I can easily imagine what it would be like 5 4 3 2 1 I find it very hard to imagine

---

B. (3) My heart starts pounding

Very much 5 4 3 2 1 Not at all

(4) My mouth feels dry

Very much 5 4 3 2 1 Not at all

(5) I break into a cold sweat

Very much 5 4 3 2 1 Not at all

(6) I have "butterflies" and feel sick

Very much 5 4 3 2 1 Not at all

(7) I feel shaky and weak in my knees

Very much 5 4 3 2 1 Not at all

(8) I feel angry with myself

Very much 5 4 3 2 1 Not at all

(9) I feel irritated and annoyed

Very much 5 4 3 2 1 Not at all

(10) I feel I need to talk to someone

Very much 5 4 3 2 1 Not at all

(11) I wish I could get away from it

Very much 5 4 3 2 1 Not at all

(12) I feel frightened

Very much 5 4 3 2 1 Not at all

(13) I feel _____ (Others you may add)

Very much 5 4 3 2 1 Not at all

COMPONENT 3.5 I heard one of the visitors say "I dislike coming to hospital. It's the environment that worries me, makes me think of sickness and death".

A. (1) This has happened to me ☐ This has never happened to me ☐

(2) I can easily imagine what it would be like 5 4 3 2 1 I find it very hard to imagine

---

B. (3) My heart starts pounding

Very much 5 4 3 2 1 Not at all

(4) My mouth feels dry

Very much 5 4 3 2 1 Not at all

(5) I break into a cold sweat

Very much 5 4 3 2 1 Not at all

(6) I have "butterflies" and feel sick

Very much 5 4 3 2 1 Not at all

(7) I feel shaky and weak in my knees

Very much 5 4 3 2 1 Not at all

(8) I feel angry with myself

Very much 5 4 3 2 1 Not at all

(9) I feel irritated and annoyed

Very much 5 4 3 2 1 Not at all

(10) I feel I need to talk to someone

Very much 5 4 3 2 1 Not at all

(11) I wish I could get away from it

Very much 5 4 3 2 1 Not at all

(12) I feel frightened

Very much 5 4 3 2 1 Not at all

(13) I feel _____ (Others you may add)

Very much 5 4 3 2 1 Not at all

COMPONENT 4

SITUATION 4.1 The doctor said they would have to do a tissue "biopsy" on me, something about screening for cancer.

A. (1) This has happened to me ☐ This has never happened to me ☐

(2) I can easily imagine what it would be like 5 4 3 2 1 I find it very hard to imagine

---

B. (3) My heart starts pounding

Very much 5 4 3 2 1 Not at all

(4) My mouth feels dry

Very much 5 4 3 2 1 Not at all

(5) I break into a cold sweat

Very much 5 4 3 2 1 Not at all

(6) I have "butterflies" and feel sick

Very much 5 4 3 2 1 Not at all

(7) I feel shaky and weak in my knees

Very much 5 4 3 2 1 Not at all

(8) I feel angry with myself

Very much 5 4 3 2 1 Not at all

(9) I feel irritated and annoyed

Very much 5 4 3 2 1 Not at all

(10) I feel I need to talk to someone

Very much 5 4 3 2 1 Not at all

(11) I wish I could get away from it

Very much 5 4 3 2 1 Not at all

(12) I feel frightened

Very much 5 4 3 2 1 Not at all

(13) I feel _____ (Others you may add)

Very much 5 4 3 2 1 Not at all

SITUATION 4.2 The doctor said "I have to tell you that we still have not found what is causing your problem".

A. (1) This has happened to me ☐ This has never happened to me ☐

(2) I can easily imagine what it would be like 5 4 3 2 1 I find it very hard to imagine

---

B. (3) My heart starts pounding

Very much 5 4 3 2 1 Not at all

(4) My mouth feels dry

Very much 5 4 3 2 1 Not at all

(5) I break into a cold sweat

Very much 5 4 3 2 1 Not at all

(6) I have "butterflies" and feel sick

Very much 5 4 3 2 1 Not at all

(7) I feel shaky and weak in my knees

Very much 5 4 3 2 1 Not at all

(8) I feel angry with myself

Very much 5 4 3 2 1 Not at all

(9) I feel irritated and annoyed

Very much 5 4 3 2 1 Not at all

(10) I feel I need to talk to someone

Very much 5 4 3 2 1 Not at all

(11) I wish I could get away from it

Very much 5 4 3 2 1 Not at all

(12) I feel frightened

Very much 5 4 3 2 1 Not at all

(13) I feel _____ (Others you may add)

Very much 5 4 3 2 1 Not at all

SITUATION 4.3 I know that I am going to have my gallbladder removed on Thursday, but they haven't told me anything else about what will happen or what this really means.

A. (1) This has happened to me ☐ This has never happened to me ☐

(2) I can easily imagine what it would be like 5 4 3 2 1 I find it very hard to imagine

---

B. (3) My heart starts pounding
Very much 5 4 3 2 1 Not at all

(4) My mouth feels dry
Very much 5 4 3 2 1 Not at all

(5) I break into a cold sweat
Very much 5 4 3 2 1 Not at all

(6) I have "butterflies" and feel sick
Very much 5 4 3 2 1 Not at all

(7) I feel shaky and weak in my knees
Very much 5 4 3 2 1 Not at all

(8) I feel angry with myself
Very much 5 4 3 2 1 Not at all

(9) I feel irritated and annoyed
Very much 5 4 3 2 1 Not at all

(10) I feel I need to talk to someone
Very much 5 4 3 2 1 Not at all

(11) I wish I could get away from it
Very much 5 4 3 2 1 Not at all

(12) I feel frightened
Very much 5 4 3 2 1 Not at all

(13) I feel _____ (Others you may add)
Very much 5 4 3 2 1 Not at all

SITUATION 4.4 Another patient has just been telling me he is out of a job because he has been sick too long. My boss didn't say anything when I told him the doctor had not said how long I would be in hospital.

A. (1) This has happened to me ☐ This has never happened to me ☐

(2) I can easily imagine what it would be like 5 4 3 2 1 I find it very hard to imagine

---

B. (3) My heart starts pounding

Very much 5 4 3 2 1 Not at all

(4) My mouth feels dry

Very much 5 4 3 2 1 Not at all

(5) I break into a cold sweat

Very much 5 4 3 2 1 Not at all

(6) I have "butterflies" and feel sick

Very much 5 4 3 2 1 Not at all

(7) I feel shaky and weak in my knees

Very much 5 4 3 2 1 Not at all

(8) I feel angry with myself

Very much 5 4 3 2 1 Not at all

(9) I feel irritated and annoyed

Very much 5 4 3 2 1 Not at all

(10) I feel I need to talk to someone

Very much 5 4 3 2 1 Not at all

(11) I wish I could get away from it

Very much 5 4 3 2 1 Not at all

(12) I feel frightened

Very much 5 4 3 2 1 Not at all

(13) I feel _____ (Others you may add)

Very much 5 4 3 2 1 Not at all

SITUATION 4.5 My mother looked hard at me and finally she said "I am afraid that you might have the same problem as your father had".

A. (1) This has happened to me ☐ This has never happened to me ☐

(2) I can easily imagine what it would be like 5 4 3 2 1 I find it very hard to imagine.

B. (3) My heart starts pounding

Very much 5 4 3 2 1 Not at all

(4) My mouth feels dry

Very much 5 4 3 2 1 Not at all

(5) I break into a cold sweat

Very much 5 4 3 2 1 Not at all

(6) I have "butterflies" and feel sick

Very much 5 4 3 2 1 Not at all

(7) I feel shaky and weak in my knees

Very much 5 4 3 2 1 Not at all

(8) I feel angry with myself

Very much 5 4 3 2 1 Not at all

(9) I feel irritated and annoyed

Very much 5 4 3 2 1 Not at all

(10) I feel I need to talk to someone

Very much 5 4 3 2 1 Not at all

(11) I wish I could get away from it

Very much 5 4 3 2 1 Not at all

(12) I feel frightened

Very much 5 4 3 2 1 Not at all

(13) I feel _____ (Others you may add)

Very much 5 4 3 2 1 Not at all

APPENDIX 5.2

PATIENT CONDITION EVALUATION FORM

Patient's Name_____ Ward_____

Date_____ Day Post-op 1 2 3

Total Time of Observation_____ (Approximately)

Evaluator's Name_____ Position_____

Please indicate how you feel about the patient condition in the following aspects. Select the appropriate number by making a circle (O).

		Not At All	Not as Well As he Should	Aver-age	Well	Very Well
A.	PHYSICAL ASPECT					
1.	Is he able to breathe adequately?	1	2	3	4	5
2.	Does he sleep well?	1	2	3	4	5
3.	Is he taking adequate foods and fluids?	1	2	3	4	5
4.	Is he able to maintain his physical hygiene?	1	2	3	4	5
5.	How mobile is he?	1	2	3	4	5
B.	SENSORY ASPECT					
1.	Does he appear to be free from pain?	1	2	3	4	5
2.	Does he look comfortable?	1	2	3	4	5
3.	Is he well adjusted to the ward environment?	1	2	3	4	5
4.	Does he seem alert to the ward environment?	1	2	3	4	5
5.	Is he able to cope with his present condition?	1	2	3	4	5
C.	COGNITIVE CLARITY ASPECT					
1.	How well does he understand his treatment and care?	1	2	3	4	5
2.	Does he converse rationally?	1	2	3	4	5
3.	Is he oriented to things such as time place and person?	1	2	3	4	5
4.	How clearly does he understand why he is in hospital?	1	2	3	4	5
5.	Is he able to explain what had been done to him in terms of treatment and care?	1	2	3	4	5

	Not At All	Not as Well As he Should	Aver-age	Well	Very Well
D. PSYCHOSOCIAL ASPECT					
1. Does he look happy when visitors are present?	1	2	3	4	5
2. Is he able to control his expression of emotion?	1	2	3	4	5
3. Does he accept the fact that he needs hospitalization?	1	2	3	4	5
4. Does he seem interested in the progress of his condition?	1	2	3	4	5
5. Does he seem interested in his physical appearance?	1	2	3	4	5
E. COMMUNICATION ASPECT					
1. Does he talk to the nurses?	1	2	3	4	5
2. Does he talk to other patients	1	2	3	4	5
3. Does he talk easily with his family?	1	2	3	4	5
4. How well is he able to express himself?	1	2	3	4	5
5. Does he answer questions directly?	1	2	3	4	5
F. OVERALL EVALUATION					
1. Degree of wellness	1	2	3	4	5
2. Degree of mobility	1	2	3	4	5
3. Degree of freedom from pain	1	2	3	4	5
4. Degree of physical adjustment	1	2	3	4	5
5. Degree of self acceptance	1	2	3	4	5

COMMENT:

_____

_____

_____

_____

_____ SIGNATURE OF EVALUATOR

APPENDIX 5.3

DAILY ACTIVITIES CHECK LIST (D.A.C.)

Dear _____,

As you are now back home from hospital after the operation, we are interested in how well you are coping with your everyday living. This questionnaire expects you to report just how you view yourself at this stage, there are no right or wrong, neither good or bad answers. Please complete and return the questionnaire as soon as possible using the enclosed stamped addressed envelope, as this information will help me to complete my research. Thank you for your co-operation.

Earmporn Eopapong,
Postgraduate Student,
Nursing Studies Unit,
Massey University,
PALMERSTON NORTH

Question: How do you consider yourself in performing the following activities during the period of four weeks after being discharged from the hospital?

Instruction: Please make a tick (✓) in the square you select as best describes your feelings.

1) Do you have difficulty in performing the following activities? (Strike out activities which you do not normally do).

Activity	No difficulty	A little diff.	Very diff.	Extremely difficult	Restricted	Reason for Difficulty
a. Bathing	☐	☐	☐	☐	☐	
Taking shower	☐	☐	☐	☐	☐	
Combing hair	☐	☐	☐	☐	☐	
Hair washing	☐	☐	☐	☐	☐	
Brushing teeth	☐	☐	☐	☐	☐	
Shaving	☐	☐	☐	☐	☐	
Cutting finger nails	☐	☐	☐	☐	☐	
Grooming	☐	☐	☐	☐	☐	
b. Eating	☐	☐	☐	☐	☐	
Drinking	☐	☐	☐	☐	☐	
Washing clothes	☐	☐	☐	☐	☐	
Cleaning house	☐	☐	☐	☐	☐	
Doing dishes	☐	☐	☐	☐	☐	
Cooking	☐	☐	☐	☐	☐	
Watching T.V.	☐	☐	☐	☐	☐	
Answering phone	☐	☐	☐	☐	☐	

Activity	No difficulty	A little diff.	Very diff.	Extremely difficult	Restricted	Reason for Difficulty
c. Getting to sleep	☐	☐	☐	☐	☐	
Getting up in a.m.	☐	☐	☐	☐	☐	
d. Working	☐	☐	☐	☐	☐	
Driving	☐	☐	☐	☐	☐	
Writing	☐	☐	☐	☐	☐	
Reading	☐	☐	☐	☐	☐	
Typing	☐	☐	☐	☐	☐	
e. Walking	☐	☐	☐	☐	☐	
Jogging	☐	☐	☐	☐	☐	
Running	☐	☐	☐	☐	☐	
Swimming	☐	☐	☐	☐	☐	
Knitting	☐	☐	☐	☐	☐	
Sewing	☐	☐	☐	☐	☐	
Gardening	☐	☐	☐	☐	☐	
Others you may add	☐	☐	☐	☐	☐	
_____	☐	☐	☐	☐	☐	
_____	☐	☐	☐	☐	☐	

APPENDIX 5.4

OVERALL DATA COLLECTION SHEET

HN _____

AN _____

Name _____ Sex _____ Age _____ Ward _____

Case number _____ Marital status _____

Occupation _____ Address _____

Previous Admission _____

_____

Date of present admission _____ Discharge _____

Number of hospital stay _____ Diagnosis _____

Operation _____ Date of Operation _____

Duration of Operation _____ Time commenced _____
Time finished _____

Time in Recovery room _____ Time in _____
Time out _____

Past and Present Medical History _____

_____

_____

_____

A. Level of Anxiety

S.P.A.S. pre-operative score =
S.P.A.S. post-operative score =
Difference between pre- post operative score =

Patient's comment on completing S.P.A.S. _____

_____

_____

B. Pain Relief and Sedation

No. of times	Op. day	Post-op day											
		1	2	3	4	5	6	7	8	9	10	11	12
C.O.P.													
Pain Relief													
Sleepless night													
Sedatives													

C. Independent Nurse Observer Score

Category	Day Post Op.		
	1	2	3
NURSE A : Supervising level nurse			
NURSE B : Bedside care giver			

D. Specific Physiological Indicators

Baseline data BP = _____ mm Hg. P = __/min R = __/min

T = _____ ^{o}C

Indicators	Arriving RR	Leaving RR	Day Post Op.											
			1	2	3	4	5	6	7	8	9	10	11	12
Systolic BP														
Pulse														
Respiration														
Temperature														

Day Post Op.	Record of Nausea	No. of Vomiting	Postoperative complications and deviant behaviours & other selected indicators e.g. full mobility, time resuming normal diet, BO.
RR			
Op Day			
1st			
2nd			
3rd			
4th			
5th			
6th			
7th			
8th			
9th			
10th			
11th			
12th			

E. Daily Living Activity Checklist

Total Score =

Time elapsed before returning to work =

F. General description of patients as perceived by nurse investigator during the period of contacting

Physical appearance:

Communication pattern:

Problems:

Other profiles:

GENERAL COMMENTS:

Significant Medical past history:

Comments on preoperative visit:

APPENDIX 5.5

ADDITIONAL QUESTIONNAIRE

These questions were attached together with the Daily Activity Checklist which was counted as question one in this entire questionnaire.

If working,

2) Have you returned to work yet? ☐ Yes ☐ No

If yes, when?

☐ a week after discharge ☐ 2 weeks after discharge

☐ 3 weeks after discharge ☐ more than 3 weeks after discharge

If not employed (e.g. housewife, retired person),

3) When did you return to the job you normally do?

☐ a week after discharge ☐ 2 weeks after discharge

☐ 3 weeks after discharge ☐ more than 3 weeks after discharge

4) Overall, did you have difficulty with your daily activities?

☐ not at all ☐ only a few

☐ difficult ☐ very difficult

5) At this stage, do you think you were well prepared for getting back to your normal activities at the time of discharge?

☐ not at all ☐ well prepared

☐ partly prepared ☐ very well prepared

6) Who was the most helpful person in preparing for discharge?

☐ the nurse ☐ others

☐ the doctor ☐ specify _____

7) What do you remember most about being in hospital?

☐ going to operating room ☐ pain

☐ recovering from anaesthesia ☐ having a resting time

☐ getting to know people ☐ others specify _____

8) Lastly, how do you feel about yourself at this moment?

☐ nothing different from what you used to be

☐ a little bit different from what you used to be

☐ very different from what you used to be

☐ extremely different from what you used to be

General comment: _____

_____

_____

_____

Additional questions for experiment group

9) Do you think the booklet "Preparation for surgery" helped you to adjust to the surgery? (Before, during and after)

- ☐ no effect
- ☐ slightly helpful
- ☐ very helpful
- ☐ rubbish

10) Do you think the preoperative teaching programme "Preparation for surgery" helped you before and after surgery at all?

- ☐ no effect
- ☐ slightly helpful
- ☐ very helpful
- ☐ a nuisance

_____

APPENDIX 5.6

The booklet "Preparation for Surgery : A Booklet of Information for general surgical patients" is shown in its original form (attached to the back cover of this thesis).

APPENDIX 5.7

Description and scripts of the slide programme

"Preparation for Surgery"

SLIDE I

Description: Patient's room. The patient is lying on bed
The nurse is shaving the area that will be operated on

Script SKIN PREPARATION:

Skin preparation is necessary when a person is going to have surgery. The objectives in preparing the operative site are to remove harmful organisms. As hair carries bacteria, the area is shaved also. Even though it is impossible to destroy the bacteria from the skin completely, they can be greatly reduced in number. Skin preparation will begin in the ward and completed in the operating room immediately before the incision is made. In the ward the nurse will shave the area and clean with special soap and water. This will be done tonight. In the operating room, the bactericidal agent is applied to the area just before the incision is made.

SLIDE II

Description: The nurse is saying good night to patient, turning off the light. Patient closes eyes, smiling face. Curtain closed.

Script REST AND SLEEP:

It is generally agreed that a good night's rest before the day of the operation is important. You might be given some sleeping pills if you cannot get to sleep.

SLIDE III

Description: An orderly comes to collect the patient. The nurse assists the patient to get on the stretcher. The patient wears surgical gown, dressed up for surgery, smiling face.

Script GOING TO THE OPERATING THEATRE:

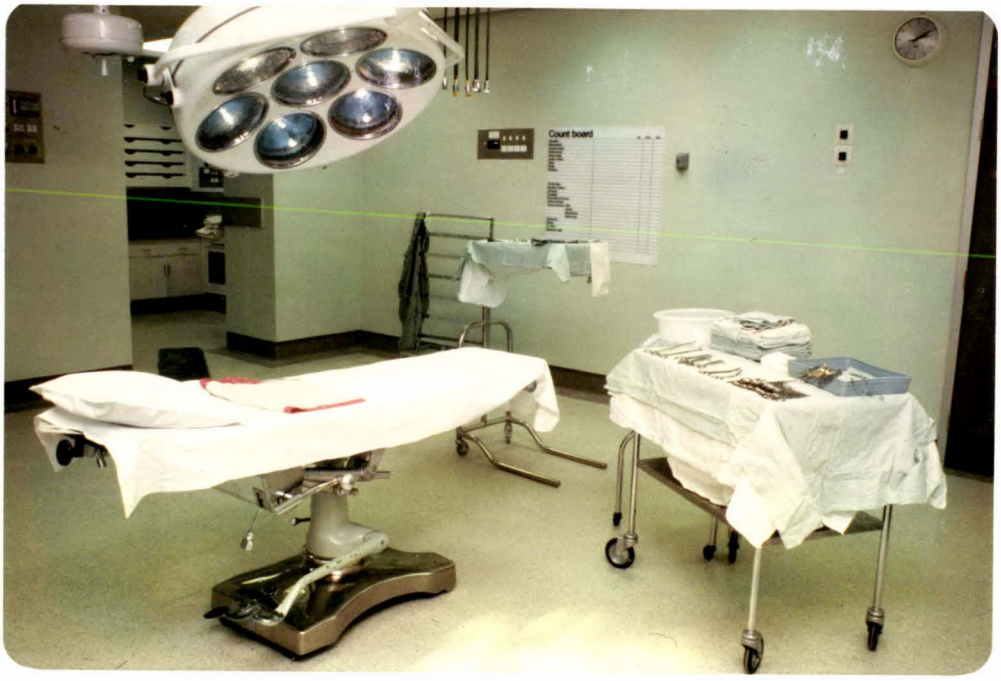
On the morning of the operation, the nurse will check your pulse, respiration rate, blood pressure and record them. Check yourself whether you have a cold, sore throat or any difficulties in breathing, because such symptoms increase surgical risk. Report to the nurse if you have any of these symptoms.

Then, you should change into special gown. Your hair should be combed. All pins, combs, clips, contact lenses removed including false teeth. Any valuable belongings should be left in the care of the nurse in the ward.

Premedication will be given 1-2 hours prior to the time of surgery. It can be in form of tablet or injection. The premedication will help you to relax and feel much more comfortable.

Then, it is the time for an orderly to collect you for the operating theatre. The nurse will accompany you until you get to the gentle hand of the operating room team.

SLIDE IV



Description: Showing the operating room and equipment.

Script ENTERING THE OPERATING ROOM:

This is a picture of what an ordinary operating room looks like. There is an operating table in the middle of the room where you will be lying. The overhead lamp is for lighting. It produces no shadow, so that we can see clearly during the time of the operation. There will be some activities going on in the room as people make sure that the surgical equipment is "well set up" for you.

SLIDE V

Description: The operating room team

Script THE OPERATING ROOM TEAM:

These people are waiting for you. Performing an operation needs good team work. To be effective in terms of limited amount of time, best result, less trauma to patients are the aims of any types of operation. Not only are there these caring people around you in the operating room, but also outside the operating room, there will be the nurse who is taking care of you in the ward, physiotherapist, social worker etc. and most of all, your own family and friends who are waiting anxiously to see you when you come out.

SLIDE VI

Description: Picture of anaesthetic equipment.

Script ANAESTHETIC EQUIPMENT:

As soon as you enter the operating theatre, the anaesthetist will greet you and check up on your physical status and fitness for anaesthesia. He may repeat the same questions as the nurse has asked you before leaving the ward.

The anaesthetic machine consists of a cone or mask on which anaesthetic liquid is dripped or piped from a vaporizing machine. With it, there is also an oxygen tube to mix with the anaesthetic drug, so that you will have sufficient oxygen while the operation is in progress.

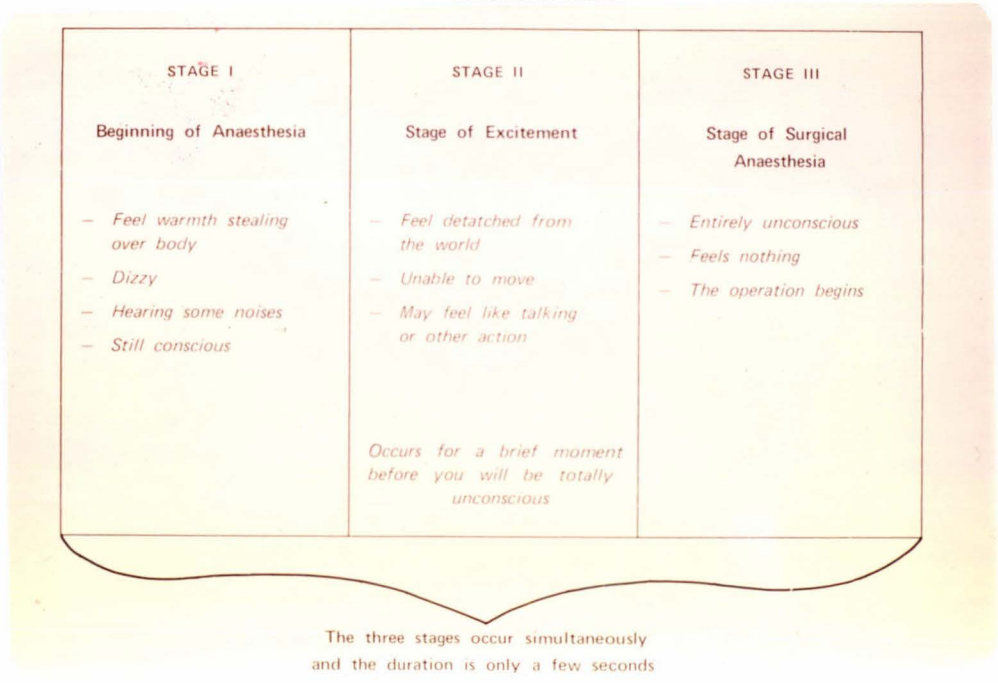
SLIDE VII

Description: The patient is on the table. The surgeon is about to make the incision.

Script BEING OPERATED ON:

When you have been put to "sleep", the surgeon will start the operation. The stage of getting to "sleep" will be shown in the next slide. Each of the operating team member knows what his/her duties are, thus there is no hesitation about doing each job or discussion of who is going to do what job. The last thing before going to "sleep" and the first thing that comes back to you when you are awake is the sense of hearing.

SLIDE VIII



Description: Diagram shows stages of anaesthesia.

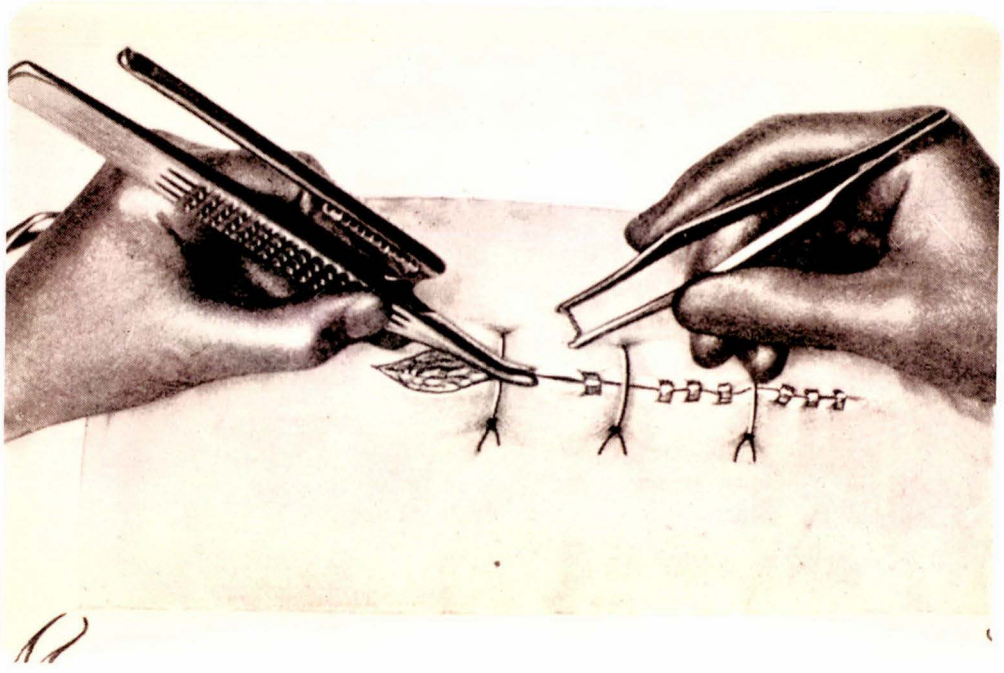
Script STAGES OF ANAESTHESIA:

There are three stages you are likely to go through. When you are being injected the anaesthetic drug, you may feel warmth stealing over your body. Some dizziness will probably be experienced. Then you may hear the ringing, roaring or buzzing in your ears. You will be conscious still.

At the second stage, you may feel as if you are not yourself and are detached from the world. You may feel like talking, singing, crying or laughing. This is called the stage of excitement which occurs for a brief moment. At this stage you are unable to move your extremities.

You will be entirely unconscious and lying quietly on the table. This is the third stage the operation will begin. The anaesthetist will carefully observe and accurately check on the dosage of the anaesthetic vapour which is used as the controlling agent during the operation in relation to your condition and stage of anaesthesia. However, the three stages of anaesthesia occur within a few seconds.

SLIDE IX



Description: Closing of the skin and suturing.

Script FINISHING THE OPERATION:

When the procedure is finished, the tissue will be closed layer by layer, finishing with the sutures or clips that you see in the skin. Everything that has been used during the operation will be checked and counted carefully. The whole patient is being assessed and evaluated, not only the body system that is involved. Blood loss is estimated and if the loss is over the normal level, it will be replaced by transfusion. After the procedure is over and dressing is applied to the wound, you will be transferred to the recovery room which is situated within a short distance from the operating room, where you will be observed carefully.

SLIDE X

Description: Recovery room nurse and her patient.

Script RECOVERY ROOM CARE:

The recovery room nurse will check your blood pressure, pulse, respiration rate and observe for any abnormalities that might occur. She will ask if you have any pain, feeling nauseated and ask questions to assess your level of consciousness. The time taken to "recover" from anaesthesia can range from 30 minutes to five hours. This period is often called "twilight zone" because you are neither fully anaesthetized nor fully awake. When your condition is satisfactory, you will be transferred back to your own room in the ward.

SLIDE XI

Description: Along the corridor, the nurse accompanies the patient.

Script BACK TO THE WARD:

The nurse from the ward will come to collect you from the recovery room. At this stage you may feel nauseated, dizzy, pain or feeling sore all over the body. These symptoms may be due to the side effect of the anaesthetic, tissue injury and inability to maintain normal muscular activities while being unconscious. The best way to diminish such symptoms is to get exercise to the muscle as soon as possible. Try to recall your memory of post operative exercises instruction during this stage. Deep breathing and coughing exercise can be started immediately followed with leg, toes exercise and others. It will help you a great deal in getting back to your normal state.

SLIDE XII

Description: Being with family and the nurse.

Script BEING WITH FAMILY:

Back to your own room where the family can be with you again. They will be very happy to see you getting up and smiling. Remember there are always nurses to talk with you if you feel something wrong or unusual. Do not hesitate to ask questions, because we are always here to listen and to help you. We hope you enjoyed the slide show and the information to help you cope with being a patient in this hospital.

THANK YOU

APPENDIX 5.8

SUMMARY OF THE STEPS IN TEACHING-LEARNING ACTIVITIES

Teaching Activities	Patient's Activities	Contents A-V Aids
Introducing herself Introducing the teaching session and the objectives of the programme is to help the patients to adjust to surgery, hospital environment etc. to reduce anxiety which might affect and delay recovery process.	Listening. Taking turns to introduce themselves to get to know each other and understand the objectives of the teaching session.	
Introducing the slides "preparation for surgery". Operating the slide projector and tape recorder.	Listening and watching slides.	Sound on projector, 12 slides "Preparation for Surgery".
Teaching about relevant information to surgery and process of recovery.	Listening asking and answering questions.	Content regarding to the booklet e.g. post operative exercises, sleep, process of recovery etc.
Encourage patients for discussion.	Discussion	
Session ends		

APPENDIX 5.9

CRITERIA FOR CONTENT ANALYSIS OF THE GROUP SESSIONS

5.9.1 Instruction for scoring patient statement

(Modified from Murray, 1956)

Simple Sentences The simple sentence is the basic unit of scoring. It contains a subject and predicate - the predicate usually contains a verb and an object. It may not make complete sense all by itself, but with the help that the meaning of pronouns, allusion etc. may gain the meaning from the content; thus the simple sentence must contain a complete idea. Some examples are:

a. That's quite clear to me.
b. We can practise the exercises straight away.
c. I got sick after that.
d. That's what I was worried about.

Incomplete Sentences A statement may be incomplete in itself and yet not be part of a previous or following statement. If the missing part is strongly implied then it is counted as a regular unit. The examples are:

a. Very interesting.
b. Sort of strange environment.
c. Thinking of exercises, ...
d. Just like mine ...

Slightly complex sentences These are sentences with introductory phrases, dependent clauses, adjectival phrases, immediate preceding or following explicatives. Some examples are:

a. I wonder if they change it.
b. I am glad I was the first one on the list to go.
c. I wish tomorrow will go very fast.
d. You don't want to start thinking about what is going to be liked really.

Conjunctival sentences These are sentences which have several phrases joined together. There are two types that can be distinguished. The

first type, a number of nouns, verbs or objects may be joined but the rest of the sentence is unitary; e.g.

a. Sister will come and tell you exactly what is going to happen to you tomorrow.

b. When you come back from theatre, you cope with whatever comes afterward.

These sentences are scored as one unit.

The second type, the conjunction may combine two sentences complete or nearly complete in themselves. They may be separated ideas or the same idea repeated. These sentences are scored as two or more units. However, a verb and a subject must be present in each section of the sentence to be scored as separated unit; e.g.

a. Imagine the time I had the symptoms/ and why wait until getting agony./

b. It's still being done at the old theatre/ doesn't it?/

c. This happened to me too/, so I would like to go on and get it done./

d. It is not going to get better on its own,/ I suppose.

Sentences related to the nurse teacher's (group leader) remarks

Thought units which are incomplete in themselves, but which serve as agreement or disagreement etc. with the nurse educators are counted as units; e.g. Oh, I see/, yes/, no/, not at all/, I don't know/, yes, but/ not for me/, I think so/, etc.

5.9.2. Instruction for content analysis of patient statement

1. Positive Aspect : Statement indicating an attempt to learn from and share with the nurse educators or other patients in the group. This aspect is divided into 4 sub-categories:

* Expressing needs for orientation type of information: statement concerning about hospital routines, ward routines and policy and other hospital services, e.g.

  "What time is supper?"

  "How many theatres they have in this hospital?"

  "They will carry around the sleeping pills tonight, won't they?"

* Request for knowledge: statements directly concerned with one's present condition and those associated with surgery, anaesthesia, pain, recovery and convalescent period, e.g.

  "Why shaving was done so extensively?"

  "How long before they take the stitches out?"

  "What about the post-anaesthetic people (recovery room nurse), what do they do?"

  "Do they give you something if you really have pain?"

* Sharing of health knowledge: statement related to previous health knowledge or experience, e.g.

  "It was altogether 4 days before the time I first had fluids."

  "I can remember him doing that (being anaesthetized), yes, he put my arm out and then he said 'it won't be long now, your pain will be gone', and I can't remember anything else."

  "They are going to take you in the morning. Tomorrow you will have a shower."

  "After the operation, they tried the pan with me. Boy! I had to leave it."

* Discussion of feeling about surgery and hospitalization: statement indicating one's feelings and concern of surgery and hospitalization including family, e.g.

"I am a bit scared."

"It's not frightening or anything for me."

"It would be with my husband. Boy, it must be shocking for him."

"Just like mine. They are terrible, aren't they? Those guys, they are just like one another."

etc.

2. Negative Aspect : Statement indicating resistance, hostility toward the teaching programme, nurse teacher and other patients within the group. The "out of theme" discussion is also included, e.g.

"No, you won't stop me from smoking."

"Why .. why .. do you think in doing this? Do you think people will interest in this? (teaching programme).

"No, I don't want to ask anything."

"I don't think I have anything to ask at all."

3. Neutral Aspect : Statement in response to the nurse educator's remarks with any elaboration neither before nor after, e.g. simply "yes" or "no". Even though this happens after the health teaching part, it is considered as "vague" and "ambivalent", if using such words as indicators of patient's degree of acceptance and understanding of the teaching content. Thus this is categorized as "neutral" responses.

APPENDIX 5.10

CODING SHEETS *

5.10.1 The Control Group

Patient's Code	Sex	Age	Marital Status	# Prev. Hosp'n	# Prev. Oper'n	SPAS Situation Happened	Degree of Imagination	S.P.A.S. Score				Total SPAS	P.C.E.		DAC Score	Pre-op Selected SPAS	Post-op Selected SPAS	Length of hospital stay	Time in OR(Min)	Time in RR(Min)	C.O.P.	Pain Relief Given
								Comp 1	Comp 2	Comp 3	Comp 4		PCE1	PCE2								
C1	F	77	1	2	2	5	77	57	50	67	73	274	102	-	-	85	-	9	225	NR	0	26
C2	M	31	1	0	0	0	100	63	56	54	62	235	108	118	119	58	55	8	15	60	1	1
C3	M	56	1	1	0	2	48	68	62	54	53	237	119	127	-	64	53	8	20	90	2	2
C4	F	27	1	1	1	0	100	150	51	155	152	508	144	143	112	200	170	8	120	110	4	3
C5	M	43	1	0	0	7	100	69	74	70	135	348	125	115	101	137	108	7	50	70	5	5
C6	F	32	1	0	0	9	88	105	82	58	97	342	98	114	99	122	105	10	0	60	4	12
C7	F	41	1	0	0	1	60	78	54	86	85	303	139	111	104	125	109	12	90	105	7	32
C8	F	47	1	0	0	5	84	138	85	101	132	456	77	84	105	174	63	2	30	65	3	4
C9	M	59	1	2	1	2	96	74	62	54	69	259	87	94	115	71	52	9	25	120	1	1
C10	F	29	1	3	2	5	74	77	66	50	74	267	112	117	92	103	173	8	120	135	3	3
C11	M	50	1	3	2	7	49	50	50	50	68	218	126	125	110	58	134	17	NR	NR	1	1
C12	F	38	1	0	0	9	92	142	94	86	106	428	122	113	-	142	160	11	30	70	8	12
C13	M	29	1	1	0	3	71	67	92	120	120	399	99	103	118	165	46	5	60	55	3	3
C14	M	35	4	4	2	0	57	152	113	108	240	613	130	132	114	200	186	5	30	90	0	3
C15	M	40	1	0	0	2	57	80	70	50	130	330	135	128	119	170	174	8	60	65	9	10
C16	F	42	1	2	2	6	70	100	94	58	120	371	76	89	-	149	151	14	120	95	7	7
C17	M	29	1	2	0	6	76	148	70	60	142	420	133	135	94	178	120	3	10	35	5	5
C18	M	45	1	2	2	7	83	91	58	90	98	337	73	94	-	157	180	21	45	100	15	26
C19	F	26	1	2	0	4	66	140	82	54	99	375	148	141	120	144	111	2	75	55	0	2
C20	F	41	1	5	0	5	84	170	70	50	98	388	84	88	119	164	166	11	NR	70	1	2
C21	F	26	1	6	1	4	73	120	154	164	94	532	144	134	102	171	174	2	60	30	0	0
C22	F	55	1	2	2	11	100	62	54	50	54	220	88	104	110	56	47	16	75	75	13	15
C23	F	64	4	2	2	4	77	110	82	87	146	425	119	135	120	176	184	5	NR	NR	0	0
C24	M	29	1	3	1	3	68	60	50	50	66	226	127	137	-	66	80	7	25	105	2	2
C25	F	41	1	0	0	2	100	58	58	82	62	260	118	114	89	72	77	14	60	70	10	11
C26	F	26	1	3	3	4	84	73	58	82	58	271	148	149	120	95	57	1	NR	NR	0	0
C27	F	26	1	3	3	7	80	115	90	78	82	365	119	147	107	121	124	4	15	45	1	2
C28	M	64	1	0	0	0	49	62	50	50	50	212	70	69	-	52	190	17	30	60	5	16
C29	M	47	1	0	0	6	88	90	78	83	127	378	133	124	-	144	158	6	NR	NR	0	0
C30	M	61	4	3	2	4	39	50	50	50	50	200	150	143	119	40	73	2	30	65	1	1

5.10.2 The Experimental Group

Patient's	Sex Age	Marital Status	# Prev. Hosp'n	# Prev. Oper'n	SPAS Situation Happened	Degree of Imagination	S.P.A.S. Score				Total SPAS	P.C.E.		DAC Score	Pre-op Selected SPAS	Post-op Selected SPAS	Length of hospital stay	Time in OR(Min)	Time in RR(Min)	C.O.P.	Pain Relief Given
							Comp 1	Comp 2	Comp 3	Comp 4		PCE 1	PCE 2								
E1	F 28	1	0	0	4	63	78	80	71	77	306	149	140	120	78	54	3	40	60	0	0
E2	F 16	2	1	0	4	74	129	119	131	116	495	131	111	114	129	133	9	NR	55	3	3
E3	F 29	1	5	1	6	74	120	83	75	120	398	117	122	114	128	54	9	NR	75	5	15
E4	F 26	1	4	1	3	69	110	97	113	149	469	131	123	120	129	118	6	60	85	2	3
E5	M 16	2	1	1	9	70	94	92	93	94	373	130	108	-	111	46	8	55	60	2	2
E6	F 68	4	1	1	0	20	50	50	50	50	200	88	129	117	40	40	8	45	55	1	2
E7	F 43	1	1	1	5	85	141	64	201	129	635	125	131	87	168	111	7	85	90	3	3
E8	M 68	4	1	1	1	64	51	58	60	50	219	135	118	112	58	45	10	60	60	0	0
E9	F 53	1	2	1	4	42	99	98	133	116	446	95	144	97	153	93	8	35	35	4	4
E10	F 50	1	3	1	4	73	90	66	78	91	325	112	138	112	114	115	14	75	65	7	7
E11	M 16	2	1	0	3	65	138	90	122	136	486	113	123	116	127	89	6	90	90	6	6
E12	M 51	1	14	14	4	43	65	60	57	54	236	111	-	34	56	40	2	20	NR	1	1
E13	M 53	4	1	1	2	90	50	51	54	54	209	107	137	-	47	44	10	85	70	1	4
E14	F 26	1	1	1	5	89	99	94	64	79	339	99	126	118	102	65	10	45	60	8	10
E15	M 50	1	0	0	8	66	50	56	82	80	268	117	108	-	87	65	11	60	80	1	6
E16	M 18	2	0	0	1	30	76	67	77	59	279	106	-	100	83	70	2	30	50	0	2
E17	M 19	2	0	0	3	73	112	114	149	135	510	124	122	0	146	137	6	15	55	1	2
E18	M 75	4	1	0	4	47	56	63	79	54	252	120	104	119	68	60	8	30	60	2	6
E19	M 29	1	1	1	1	60	75	68	76	82	301	108	110	116	95	69	8	20	90	0	9
E20	M 21	2	0	0	0	37	76	78	55	124	333	124	129	120	104	82	5	55	60	1	1
E21	M 26	2	1	1	2	55	135	139	176	193	643	134	124	99	178	114	2	NR	55	1	1
E22	M 42	1	2	1	4	45	50	50	50	50	200	118	99	103	40	44	12	120	60	1	6
E23	F 51	1	1	1	2	53	53	56	70	59	238	88	122	98	56	120	10	60	55	11	11
E24	F 47	1	1	1	4	58	86	61	68	90	305	106	106	104	98	81	10	60	75	3	11
E25	F 25	3	2	1	9	51	61	66	52	75	254	111	128	111	70	44	5	60	75	3	10
E26	F 27	1	0	0	3	59	133	84	97	120	434	143	138	115	137	113	3	50	60	1	6
E27	F 23	1	5	4	3	27	112	90	50	90	342	121	120	53	183	160	5	NR	65	0	0
E28	M 44	1	3	3	8	55	55	57	55	76	243	120	100	118	72	60	9	115	85	6	13
E29	F 27	1	1	1	8	57	56	62	54	66	238	113	81	114	61	55	12	60	65	16	16
E30	F 72	4	1	0	0	20	50	50	54	50	204	113	132	120	44	58	7	NR	55	0	0

* Marital Status

1 = Married

2 = Single

3 = Divorced

4 = Widowed

S.P.A.S. Score

Comp 1 = Component 1 : Inability to control the situation

Comp 2 = Component 2 : Pain

Comp 3 = Component 3 : Death and anaesthesia

Comp 4 = Component 4 : Uncertainty

P.C.E.

P.C.E. 1 = Scored by supervising level nurse

P.C.E. 2 = Scored by bedside care giver nurse

C.O.P. = Complaints of pain

N.R. = No record

APPENDIX 6.1

THE SELECTED DESCRIPTION OF THE GROUP PHENOMENA IN THE TWELVE TEACHING SESSIONS

Session 1

The group consisted of two experimental patients and three others. There was one non-experimental patient who asked to join the session. This patient had a number of previous admissions for investigation of her heart condition.

In this session, the three non-experimental patients had already had their operations and were willing to participate in the group session. During the session, the non-experimental patients stated that they wished they had seen the slides before they went for their operation. One of them thought that the surgeon she saw on the slides was her doctor. This patient showed high degree of anxiety. However, she expressed her feeling openly with the group. The group atmosphere was relaxed and all patients took part in the discussion.

The two experimental patients who had the operation for the first time were very tense at the beginning of the session. The group leader tried to bring the group attention towards the two experimental patients and this attempt was successful. The discussion was centred around the length of hospital stay and the benefit of post operative exercises. In the latter part of the session, the two experimental patients became closely paired and developed their own clique. They persuaded one another to "practise exercises tonight".

Having the patients who already had an operation participate in the session is beneficial for the teaching-learning process in the group. They can share their experience with the pre-surgical ones. For this particular session, this benefit might not be obvious since most of them

started questioning specifically to their own problems. This might indicate the lack of health information in the pre and post operative period. However, the pre-surgical might learn indirectly from those questions.

When the session was over, one of the non-experimental patients stayed behind and asked questions to clarify her understanding of treatment and surgical procedures. The fact was revealed that she was left under the care of the other doctor while her corresponding doctor was away for a holiday. She seemed to be relieved and appeared less nervous after discussing with us. This patient remained in contact with the nurse investigator until she was discharged.

Session 2

This group was a heterogeneous group consisting of two experimental patients and four others. One experimental patient was a 68 year old female who came in for excision of squamous cell carcinoma of the lip. She had previously two operations with the same problem. After the slide presentation, she became worried the general anaesthetic procedure, especially, when she saw the anaesthetic mask covering the patient's face as the operation was going on. Explanation was given and she was relieved. This patient, later in the discussion engaged in a supporter and information giver role to the whole group, especially to the other experimental patient. The other experimental patient was a 28 year old housewife admitted for the excision of the breast lump and the investigation of cancer. She was tense with a frequent nervous laugh. It was the first operation and the first time she had been hospitalized. She was able to express her fear and anxiety with the group. The two experimental patients got to know each other well. The

common problem they shared was the threat of cancer. The first one definitely had the disease and was afraid of its recurrence. The other one was facing the possibility of developing breast cancer. The evidence that the two patients sharing and supporting each other was obvious in this session.

Session 3

The group consisted of four patients, three were experimental patients and one was non-experimental patient. One female patient scheduled for herniorrhaphy was the only one in the group who had previously experienced an operation. The other three admitted for the first operation. The first topic for discussion seemed to be information about the stage of anaesthesia. Since the experience of various stages of anaesthesia happens with a short period of time and not all patients will experience such feelings or unusual sensation, the above patient regarded this information with suspicion. Having an operation previously this patient was able to share her experience with the group. She started explaining how she felt during the early stage of being anaesthetized. At the same time, she was acting as a supporter to the other three patients. The group leader made comments occasionally as it was felt that the group was "going well" by itself. The group member interaction was high. Sharing ideas and feelings was obvious between the member who had had previous experience and the one who had not. Two female patients became "friends" and went to visit each other during the post operative period (both staying in different wards).

Uneasiness and feeling of distrust while being cared for by unqualified staff, i.e., student nurses, were shown in this session. The student was regarded as a "learner" who had just started practicing.

The other common feeling they shared was the wish that the day of the operation would pass quickly. This may imply the wish for a smooth and uneventful operation and process of recovery.

Evidence of "denial" was shown in one of the female patients at the early stage of discussion. She was scheduled for cholecystectomy. She mentioned in the early discussion that, "you don't want to start thinking about what it is going to be like". Later, she accepted the fact that she needed an operation and regarded the operation as a realistic solution to her problem.

Session 4

This session was one of the homogeneous groups with four experimental patients and one non-experimental patient. Since these patients had the similarity in age and site of operation, it was anticipated that these similarities would serve as contributing factors to the degree of group member interaction.

The theme of the discussion were mainly on anaesthesia, pain, discomfort and evidence of nausea and vomiting during the recovery period. The group was quiet and there was hesitation in breaking through the silence. The group leader tried to stimulate the general discussion by encouraging the patient who had been previously operated to talk. This patient expressed her worries about getting sick after operation as happened in her previous operation. One patient shared the same feeling especially those concerned with pain and discomfort during the post operative period. However, she stopped revealing to the group why she was worried. It might have been of embarrassment as the operation she was going to have was haemorrhoidectomy. One patient, scheduled for cholecystectomy, kept quiet most of the time. Being encouraged by the group leader to talk, she stated that she does not have any questions

to ask at all. She was found post operatively to be slower than the others in the group in resuming ambulation, but with no significant problems.

Session 5

The group consisted of three male experimental patients. There were two of the patients who did most of the discussion. Apart from providing information in accordance with the teaching plan, the group leader tried to guide the discussion relating with the emergent problem, but with little success. For example, one patient asked if he could smoke and started smoking. He was coughing intermittently during the discussion. When this was commented on, he stated he was not worried since he had been smoking for forty years and that nobody can stop him from smoking. In the early stage of the discussion, the group reaction was rather suspicious and hostile. One patient stated that he had been in and out of hospital fourteen times in the past eight years with the problem of stricture of an injury to the neck of the urinary bladder and the passage resulting from an accident. The operative procedure performed was to dilate the urethral orifice. The patient stated in the early part of the group discussion that the group discussion and the slide presentation were not useful for him as he had been admitted in hospital so many times. This patient is an example of being acclimatized to the same type of stress since he was hospitalized for the same type of operation every six months. However, having the same type of experience so many times may not indicate the patient's knowledge or understanding about it. That is, when being asked whether he knew how the procedure was done, if there was any explanation given to him or why the operation has to be repeated so many times, he laughed and

compared to the previous male group sessions and the patients were enthusiastic about the teaching programme.

Session 11

The group consisted of two male and two female. The group discussion was started soon after the general topics were covered by the group leader. The only experimental patient shared with the group his experience of being anaesthesized for tonsilectomy at the age of twelve. With that experience, he further commented that anaesthesia was the thing that made him scared of operation. Then, the whole group started to bring their experience to share with one another. One female patient, being operated three days ago, mentioned that she was immediately sent into the hospital for appendiectomy. All staff were busy preparing her for the operation and she had not "have so much time to panic" before the operation began.

The patient with previous experience of operations including tonsillectomy in his childhood was the centre of interaction in the group. He talked openly about his fear and related his experience to what had been presented in the booklet and slide programme. Another male patient, a university lecturer, admitted for minor operation made the comment that the programme might be more helpful to others with major operation than his case.

When the session was over, three patients stayed behind to discuss their individual problems with the group leader and co-leader.

Session 12

This was the last session. The group consisted of two female experimental patients. One patient had had a previous operation, but

stated, "Mine (staying in hospital) is a very quick one, you wouldn't have a chance to ask". It seemed as if he accepted the routine of coming to hospital very well, but how much he had been informed about his particular problem remained uncertain. The other reason for such statement could be that he did not want to share what he considered as a "personal matter" with the group members.

The third patient who came in for the first operation on repairing of the epigostric hernia commented that the slide programme was helpful to him. This had softened the other two patients' behaviour. The one with a number of previous admissions tried to give some support indirectly by stating to the group leader that staff were very good and helpful. Apart from this evidence, throughout the session there was no direct interaction between patient to patient. Most of the interaction had made directly to the group leader.

In the latter part of the session, the patients, except the one with a number of previous admissions, had asked questions in relation to their problems. Most of the questions were on general issues, e.g., one patient who previously stayed in the nursing home and usually had some sedations about seven o'clock asked whether he had to have the sedation and at what time. At the end of the session, the patient who had a number of admissions remained "unchanged" in his attitude towards the programme whereas the other two seemed to be more enthusiastic about it.

Session 6

This session was similar to the Session 2 in terms of group characteristics and interactions. All three patients were male of which two were experimental patients. There was a long silence at the be-

ginning of the discussion. The responses were mainly neutral and only one question on post operative exercises was asked. Sharing of one's experience was rather superficial despite the group leader's attempt to encourage the patients to do so. One patient, 59, with chronic cholecystitis, shared with the group that he had been suffering for years and hoped that it would be all over. It seemed that most patients had some problems, but felt uncomfortable to bring it out to the group. They may feel that it was their personal problem, for example, the patient with cholecystitis, it was revealed later during the post operative visit that he was angry with his previous general practitioner. The failure of diagnosing his problem resulting in his suffering from pain for the past four years. Eventually, his problem was found after changing the doctor and he was put on the semi-urgent list for surgery. The problem like this might be personal in nature, but also involve in the health professional competency. This could prevent the patient from discussing such a matter with the group. However, in this session, patient responses to the nurse leader and co-leader were similar to the Session 2, i.e. the unwillingness to share feelings and resistance to learning were the major characteristics of the responses.

Session 7

The group consisted of five male patients, all were experimental. There was one patient who had previous experience of a minor operation. Three of them were in the same age group, early twenties, one was in the early forties and the last one was in the age of sixty. When the session was opened for discussion, one young patient asked why shaving (skin preparation) was done so extensively. Explanation was given regarding the information in the booklet. There were some intermittent

periods of silence. The patients seemed to avoid discussing any issue the group leader tried to raise by keeping quiet in opposite to extrovert "resistance" and "negative" reaction in the Session 5. No patients expressed their concerns or worries with the group, except the oldest member expressed that he had a cold and wondered how much it would affect his breathing while being anaesthesized. Explanation was given by the group leader.

One patient, university graduate, acted as an "observer" throughout the session. By doing so, he avoided exploring his feelings and the reality of having an operation. Pre-operatively he showed "no anxiety" in the S.P.A.S. (his score was 200). However, in the post operative period, his score rose. This might be interpreted that he had accepted his anxiety instead of denying it. This patient told the nurse investigator in the post operative period that he should be frank with himself and accepted the fact that he was worried about his operation especially post-operative pain. He revealed that his mother also had her gall bladder removed. During the early contact with him, his anxiety was hidden and he tried to avoid accepting and discussing about it. By withholding himself during the pre-operative period, he found himself unready to face the unpleasant experiences in the post operative period, e.g. pain, nausea and vomiting. Gradually, he gained his full recovery and was in a close contact with the nurse investigator until discharged.

The other patients, especially the oldest patient, were enthusiastic about the programme. He expressed his gratitude to the nurse investigator and persuaded some new patients to join the programme.

One interesting phenomenon observed in the group sessions that might be worthwhile for further investigation is pairwise interaction.

Pairwise was seen in the female and mixed group setting, but not in the male group. For example, in this session, the group leader pointed out to the two patients that they were having the same type operation with the expectation that it would create the common interest between them. The patients responded by nodding and no further interaction was observed.

Session 8

This group consisted of three female subjects from the same ward. Their operations were similar in nature, two for total hysterectomy and one with the problem of hyperplasia and was scheduled for dilatation and currettage. The first two patients were in the same age and the third one in her late twenties. It was found that this session was one of the successful sessions in terms of high degree of patient-to-patient interaction. Similar to some other sessions, the first topic brought up for discussion was anaesthesia. One patient was afraid that she would not be able to breathe with the mask covering her nose as she had seen from the slides. Explanation was given to promote accurate perception and understanding of the situation. Other topics were pain, discomfort, nausea, vomiting, intravenous drug and time waiting for nurses especially for the use of bed pan. The two patients with hysterectomy became paired and shared their mutual understandings with each other while the third one was mainly listening and occasionally participated.

The paired members' expressions of anxiety and fear were directed toward their spouses, i.e., using their husbands in place of themselves, for example, one commented that the operation was not frightening for her, but it would be with her husband. The session was going well as the members did most of the talking. The fact that the third patient

was quiet and did not participate while the other two discussed about their husbands might be because she was recently divorced. The marital problem was likely to have been a result of her illness as she revealed later.

When the session was over, the young patient stayed behind and asked some questions to clarify her problems, especially those concerned with the operative procedures. All patients were enthusiastic about the organization of the teaching programme.

Session 9

It was one of the successful sessions in terms of patient-to-patient interaction. The group consisted of two experimental and one non-experimental patients. All were female. One patient, with coccygectomy, appeared nervous but was easily expressing her fear and anxiety with the group. For the other two patients, one was for stripping and ligation of varicose veins and the other already had herniorrhapy. Topics for discussion were of a wide range from comments on the slides to such topics as pain, discomfort, nausea, vomiting, sleep, wound dressing, resuming normal bowel habits, intravenous drips, exercises and general feeling towards having surgery. Some questions were about the purposes of the recovery room and what the nurses do in the recovery room.

Sharing of feelings and experience was obvious in this session. The patient with previous operation was willing to share her feeling and experience of being anaesthesized. Interaction between patients was high. Usually, they discussed the problems directly with one another or used the group leader as reference person.

When the session was dismissed, the patients wished one another good luck for the operation. The two experimental patients were

supportive to one another. The patient with coccygectomy who appeared nervous at first was found relaxed during the discussion. She was open about her feeling and accepted that she was "very nervous" person. At the end of the session, she stated that she was not "scared" of the operation. This patient was able to discuss freely about her anxiety and problems concerning with her condition and progress throughout the period of hospitalization. This might be due to her personality structure as well as the effect of the teaching programme.

Session 10

This was a homogeneous group consisting of three male patients, two were from the same ward. The group atmosphere was rather relaxed right from the beginning. The group members seemed to be able to express their feelings and shared their experiences. Unlike other male groups, there was no "avoidance-resistance" attitude. The discussion started immediately when one patient referred to his operation four years ago. What he could recall his memory were about pain and anaesthesia. The discussion, then, was focused on the topics of pain and anaesthesia.

One feature that stood out from the other session was feeling of trust that the patients had towards their doctors. All three patients felt confident in their doctors and the effect of such feeling in relation to the patient psychological welfare and recovery could be considered for further studies. All patients were not concerned with having an operation. One patient who worked as a truck driver stated that coming to hospital was like having a rest. One patient who had already had an operation stated that he wished to join the session before going for his operation. The group atmosphere was quite relaxed

it was the first operation for the other patient. There was a wide gap of age between the two women and also a different operation. The young patient, a mother of two children, was admitted for cholecystectomy and the other patient, 72 year old widow, was admitted for debridement and excision of infected ingrowing toenails. After the general topics were covered by the group leader, the discussion was started by the older patient. She commented that she was not worried about the operation and the slide programme helped to refresh her memory. Her confidence observed through the verbal expression indicating that she was familiar with all the procedures presented in the slides. As a result, it caused uneasiness in the younger patient's facial expression. This may be due to the fact that the older patient did not share anything with the group, but concentrated on her own problem. The attempt to direct the older patient's attention towards the younger patient's problem was not successful. The group broke into two cliques. Each patient talked about their own problems with each of the nurses (the group leader and co-leader). This occurred for a few minutes before the group leader was able to restore the "togetherness" of the group. The older patient still concentrated mainly on her problems which were not associated directly with surgery and hospitalization, e.g. getting a ride home after the operation. The younger patient appeared to remain uncomfortable for the rest of the session. However, she was able to share some of her doubts and fear with the group leader and co-leader after the session.

The failure of bringing the group "together" for this particular session might be due to the age difference and the inability to create the "common interest" between the two patients. The older patient neither accepted nor listened to the younger patient's comment and con-

cern since she has been preoccupied with her idea of "going home as soon as possible" after the operation. She might have acted differently if the younger patient's problems have been pointed out beforehand.

The other factor that might affect the group interaction was that there were only two patients in the group. Thus, the group was engaged on a one-to-one interaction and broken into two cliques at some stage.

APPENDIX 7.1

TYPES OF OPERATION UNDERTAKEN IN THE CONTROL AND EXPERIMENTAL PATIENTS

Types of Operation	Number of Patients		Total
	Control	Experiment	
A. ABDOMINAL SURGERY			
Appendiectomy	2	0	2
Cholecystectomy	4	5	9
Gastrectomy (Subtotal)	1	0	1
Herniorrhaphy	6	7	13
Hysterectomy	3	2	5
B. NON-ABDOMINAL SURGERY			
Coccygectomy	0	1	1
Dilatation of strictured urethral orifice	0	1	1
Dilatation and currettage	1	0	1
Excision of hydrocoele	4	1	5
Excision of simple squamous cell carcinoma lesion	1	1	2
Haemorrhoidectomy	2	1	3
Stripping and ligation of varicose veins	1	3	4
Thyroidectomy	1	1	1
Wedge resection of ingrowing toenails	3	5	8
C. INVESTIGATION PROCEDURES			
Excision of breast lump (pathological examination)	0	1	1
Laparoscopy	1	1	2
TOTAL	30	30	60

APPENDIX 7.2

DESCRIPTION OF POSTOPERATIVE COMPLICATIONS AND THEIR CLASSIFICATIONS WITH RESPECT TO THE BODY SYSTEMS

7.2.1 Description of postoperative complications and significant events occurred within the two groups

(i) Control

Day	Complications & Significant Events		Total
	Vomiting	Others	
Op Day	10	Cyanosis 1, Respiratory absent 1, Chest pain 2, Lung irritation 1, Labour breathing 2, Spasmodic breathing 2	19
Day 1	5	Breathless 1, Chest pain 1, Backache 2, Pale & frail 1, Uncomfortable 1, Arm Weakness 1, Hiccough 1	13
Day 2	5	Diarrhoea 2, Fainting 1, Pulmonary irritation 2, Short of breath 1, Anaemic 3, Miserable 1, Hiccouch 1, Visual disturbance 1, Pulmonary emboli 1	18
Day 3	-	Depressed 1, Withdrawn 1, Abdominal discomfort 1,	4
Day 4	-	Confused 1, Drowsy 1, ↓ Level of consciousness 1,	3
Day 5	-	Anxious 1, Tense 1, Abdominal cramp 1, Pneumothorax 1	5
Day 6	-	Constipated 1, Bursting of wound 1, Stap. aureous wound infection 1	3
Day 7	-	Constipation 1, Wound infection 1, tired & weak 1,	3
Day 8	-	Anxious 1, Worried 1, Tired 1	3
Day 9	-	Depressed 1, Worried 1	2
Day 10	-	Blister developed 1, Breathless 1, Thirsty 1	3
Day 11	-	Fainting 1	1
Day 12	-	-	-

(ii) Experimental

Day	Complications & Significant Events		Total
	Vomiting	Others	
Op Day	3	-	3
Day 1	4	Distress 1, Nausea 3, Urinary retension 2, Poor appetite 1	11
Day 2	0	Discomfort 1, Hallucination from drug 1, A little depress 1, Wind pain 1, Miserable 1	5
Day 3	1	Wheezy 1	2
Day 4	-	Pulmonary irritation 1, URI 1 (sore throat)	2
Day 5	-	Jaundice from periductal obstruction 1, *	1
Day 6	-	Diarrhoea 1, Abdominal cramp 1	2
Day 7	-	-	-
Day 8	-	-	-
Day 9	-	-	-
Day 10	-	-	-
Day 11	-	-	-
Day 12	-	-	-

* Accidental error from operation : resolved before discharge

7.2.2 Classification of Postoperative Complications in Relation to Various Body Systems *

Group (N)**	Respiratory	Gastro-intestinal	Circulatory	Musculo-skeleton	Nervous	Musculo-skeleton	Psychosocial ***	Wound Infection
Control (N = 77)								
Actual Recorded Cases	18	28	6	2	7	1	12	3
% of the total recorded cases	23.37	36.37	7.79	2.60	9.09	1.30	15.58	3.90
Experimental (N = 26)								
Actual Recorded Cases	3	16	-	-	1	2	4	-
% of the total recorded cases	11.54	61.53	-	-	3.85	7.69	15.39	-
Total Group (N = 103)								
Actual Recorded Cases	21	44	6	2	8	3	16	3
% of the total recorded cases	20.39	42.72	5.83	1.94	7.77	2.91	15.53	2.91

* Wound infection was recorded separately. ** N = total number of recorded cases for each group.
*** This indicator was used previously in Section 7.2.1 as an indicator of patient psychological disturbances during the postoperative period in hospital.

From Section 7.2.2 in this Appendix, the recorded evidences of postoperative complications were categorized according to the body systems with separate categories for psychological disturbances (psycho social) and wound infection. It was found that 36% of the recorded evidences in the control group had problems involving gastro-intestinal system opposed to 61% in the experimental group. The control group patients seemed to have more difficulties involving respiratory, circulatory and nervous systems than those of the experimental group. The experimental group patients had no recorded evidence of circulatory and musculoskeleton disturbances or wound infection.

For the total group, the results showed that the recorded evidences of postoperative complications were mostly involving gastroin-testinal, respiratory and nervous systems as well as psycho social disturbances. The recorded evidence of wound infection was low.

APPENDIX 7.3

PRE- AND POST SPAS SCORE

7.3.1 Comparison between Pre and post operative S.P.A.S. Score (Selected 4 highest scored items)

(i) The Control Group

Patient Code	Preoperative S.P.A.S. Score *					Postoperative S.P.A.S. Score **				
	1	2	3	4	Total	1	2	3	4	Total
C1F	15	21	22	27	85	-	-	-	-	-
C2M	14	14	15	15	58	11	19	10	15	55
C3M	14	14	18	18	64	14	13	14	12	53
C4F	50	50	50	50	200	36	42	50	42	170
C5M	29	30	38	40	137	30	26	26	26	108
C6F	25	30	30	37	122	24	24	27	30	105
C7F	20	28	35	42	125	20	23	38	28	109
C8F	41	41	42	50	174	10	10	15	28	63
C9M	14	14	17	26	71	10	14	14	14	52
C10F	15	26	30	32	103	38	46	50	39	173
C11M	10	10	18	20	58	22	36	40	36	134
C12F	30	34	36	42	142	32	40	50	38	160
C13M	27	42	46	50	165	11	15	10	10	46
C14M	50	50	50	50	200	40	50	46	50	186
C15M	30	40	50	50	170	42	48	46	38	174
C16F	29	36	42	42	149	35	36	40	40	151
C17M	30	48	50	50	178	34	18	38	30	120
C18M	26	35	46	50	157	40	40	50	50	180
C19F	30	33	38	43	144	16	39	31	25	111
C20F	38	38	42	46	164	42	40	40	44	166
C21F	39	41	43	48	171	44	42	38	50	174
C22F	14	14	14	14	56	10	12	12	13	47
C23F	42	42	42	50	176	42	42	50	50	184
C24F	14	14	16	22	66	14	36	10	20	80
C25F	14	14	14	30	72	21	13	22	21	77
C26F	14	14	25	42	95	14	14	14	15	57
C27F	26	30	30	35	121	32	38	28	26	124
C28M	10	10	10	22	52	50	40	50	50	190
C29M	30	35	38	41	144	40	42	36	40	158
C30M	10	10	10	10	40	10	14	32	17	73

(ii) The Experimental Group

Patient Code	Preoperative S.P.A.S. Score					Postoperative S.P.A.S. Score				
	1	2	3	4	Total	1	2	3	4	Total
E1F	17	17	17	27	78	10	16	14	14	54
E2F	31	32	33	33	129	10	36	45	42	133
E3F	28	32	33	35	128	10	24	10	10	54
E4F	31	32	33	33	129	33	23	29	33	118
E5M	22	24	26	39	111	11	11	11	13	46
E6F	10	10	10	10	40	10	10	10	10	40
E7F	38	42	43	43	168	28	27	33	23	111
E8M	12	14	14	18	58	10	10	11	14	45
E9F	34	37	38	41	153	20	22	25	26	93
E10F	22	23	30	39	114	23	26	35	31	115
E11M	29	32	33	33	127	27	23	16	23	89
E12M	14	14	14	14	56	10	10	10	10	40
E13M	11	11	12	13	47	10	10	10	14	44
E14F	21	22	29	30	102	11	16	20	18	65
E15M	19	20	22	26	87	16	14	15	20	65
E16M	16	21	22	24	83	19	16	18	17	70
E17M	32	33	38	43	146	43	34	25	35	137
E18M	15	16	18	19	68	20	10	10	20	60
E19M	21	22	23	29	95	23	15	20	11	69
E20M	20	24	29	31	104	16	22	22	22	82
E21M	42	42	47	47	178	20	18	36	40	114
E22M	10	10	10	10	40	10	10	12	12	44
E23F	14	14	14	14	56	21	33	31	35	120
E24F	18	23	26	31	98	12	20	25	24	81
E25F	16	17	20	25	78	10	11	13	10	44
E26F	30	34	35	38	137	31	19	23	40	113
E27F	33	50	50	50	183	50	10	50	50	160
E28M	13	16	20	23	72	12	13	13	22	60
E29F	14	14	14	19	61	13	14	14	14	55
E30F	10	10	10	14	44	13	13	19	13	58

* Preoperative S.P.A.S. Score : The four items were arranged as follows:

  1 = the lowest score out of the total four items

  2 = the score next to the lowest

  3 = the score next to the highest

  4 = the highest score out of the total four items

** Postoperative S.P.A.S. Score : The rank of each item was in the same order as shown in the preoperative S.P.A.S.

7.3.2 Comparison of the difference in pre and post operative SPAS Score

(i) The Control Group

Lowest ⟷ highest

Patient's	1 (1)			2			3			4			(3)		
Code	A1	B1	C1	A2	B2	C2	A3	B3	C3	A4	B4	C4	$\mathcal{E}(A_1+--A_4)$	$\mathcal{E}(B_1+--B_4)$	$\mathcal{E}(C_1+-C_4)$
C1	15	-	-	21	-	-	22	-	-	27	-	-	-	-	-
C2	14	11	3	14	19	-5	15	10	5	15	15	0	58	55	3
C3	14	14	0	14	13	1	18	14	4	18	12	6	64	53	11
C4	50	36	14	59	42	8	50	50	0	50	42	8	200	170	30
C5	29	30	-1	30	26	4	38	26	12	40	26	14	137	108	29
C6	25	24	1	30	24	6	30	27	3	37	30	7	122	105	17
C7	20	20	0	28	23	5	35	38	-3	42	28	14	125	109	16
C8	41	10	31	41	10	31	42	15	27	50	28	22	174	63	111
C9	14	10	4	14	14	0	17	14	3	26	14	12	71	52	19
C10	15	38	-23	26	46	-20	30	50	-20	32	39	-7	103	173	-70
C11	10	22	-12	10	36	-26	18	40	-22	20	36	-16	58	134	-76
C12	30	32	-2	34	40	-6	36	50	-14	42	38	4	142	160	-18
C13	27	11	6	42	15	27	46	10	26	50	10	40	165	46	119
C14	50	40	10	50	50	0	50	46	4	50	50	0	200	186	14
C15	30	42	-12	40	48	-8	50	46	4	50	38	12	170	174	-4
C16	29	35	6	36	36	0	42	40	2	42	40	2	149	151	-2
C17	30	34	-4	48	18	30	50	38	12	50	30	20	178	120	58
C18	26	40	-14	35	40	-5	46	50	-4	50	50	0	157	180	-23
C19	30	16	14	33	39	-6	38	31	7	43	25	18	144	111	33
C20	38	42	-4	38	40	-2	42	40	2	46	44	2	164	166	-2
C21	39	44	-5	41	42	-1	43	8	5	48	50	-2	171	174	-3
C22	14	10	4	14	12	2	14	12	2	14	13	1	56	47	9
C23	42	42	0	42	42	0	42	50	-8	50	50	0	176	184	8
C24	14	14	0	14	36	-22	16	10	6	22	20	2	66	80	-14
C25	14	21	-7	14	13	1	14	22	-8	30	21	9	72	77	-5
C26	14	14	0	14	14	0	25	14	11	42	15	27	95	57	38
C27	26	32	-6	30	38	-8	30	28	2	35	26	9	121	124	-3
C28	10	50	-40	10	40	-30	10	50	-40	22	50	28	52	190	-138
C29	30	40	-10	35	42	-7	38	36	2	41	40	1	144	158	-14
C30	10	10	0	10	14	-4	10	32	-22	10	17	-7	40	73	-33

(ii) The Experimental Group

Lowest ⟵ ⟶ Highest

Patient's Code	1 (1)			2			3			4			(3)		
	A1	B1	C1	A2	B2	C2	A3	B3	C3	A4	B4	C4	$\mathcal{E}(A_1+-A_4)$	$\mathcal{E}(B_1+-B_4)$	$\mathcal{E}(C_1+-C_4)$
E1	17	10	7	17	16	1	17	14	3	27	14	13	78	54	24
E2	31	10	21	32	36	-4	33	45	-12	33	42	-9	129	133	-4
E3	28	10	18	32	24	8	33	10	23	35	10	25	125	54	74
E4	31	33	-2	32	23	11	33	29	4	33	33	0	129	118	11
E5	22	11	11	24	11	13	26	11	15	39	13	26	111	46	65
E6	10	10	0	10	10	0	10	10	0	10	10	0	40	40	0
E7	38	28	10	42	27	15	43	33	10	43	23	20	168	111	57
E8	12	10	2	14	10	4	14	11	3	18	14	4	58	45	13
E9	34	20	14	37	22	15	38	25	13	41	26	11	153	93	60
E10	22	23	-1	23	26	-3	30	35	-5	39	31	8	114	115	-1
E11	29	27	-2	32	23	9	33	16	17	33	23	10	127	89	38
E12	14	10	4	14	10	4	14	10	4	14	10	4	56	40	16
E13	11	10	1	11	10	1	12	10	2	13	10	3	47	44	3
E14	21	11	10	22	16	6	29	20	9	30	18	12	102	65	37
E15	19	16	3	20	14	6	22	15	7	26	20	6	87	65	22
E16	16	19	-3	21	16	5	22	18	4	24	17	7	83	70	13
E17	32	43	-11	33	34	-1	38	25	13	43	35	8	146	137	9
E18	15	20	-5	16	10	6	18	10	8	19	20	-1	68	60	8
E19	21	23	-2	22	15	7	23	20	3	29	11	18	95	69	26
E20	20	16	4	24	22	2	29	22	7	31	22	9	104	82	22
E21	42	20	22	42	18	24	47	36	11	47	40	7	178	114	64
E22	10	10	0	10	10	0	10	12	-2	10	12	-2	40	44	-4
E23	14	21	-7	14	33	-19	14	31	-17	14	35	-21	56	120	-64
E24	18	12	6	23	20	3	26	25	1	31	24	7	98	81	17
E25	16	10	6	17	11	6	20	13	7	25	10	15	78	44	34
E26	30	31	-1	34	19	15	35	23	12	38	40	-2	137	113	24
E27	33	50	-17	50	10	40	50	50	0	50	50	0	183	160	23
E28	13	12	1	16	13	3	20	13	7	23	22	1	72	60	12
E29	14	13	1	14	14	0	14	14	0	19	14	5	61	55	6
E30	10	13	-3	10	13	-3	10	19	-9	14	13	1	44	58	-14

(1) The number 1 to 4 represented the lowest to the highest scored item respectively.

(2) A = preoperative score for an item

B = postoperative score for the same item

C = A - B

(3) $\mathcal{E}(A_1+--A_4)$ = total preoperative S.P.A.S. Score for the four selected items

$\mathcal{E}(B_1+--B_4)$ = total postoperative S.P.A.S. Score for the four selected items

$\mathcal{E}(C_1+--C_4)$ = total of the differences between pre- and postoperative S.P.A.S. Score for the four selected items

7.3.3 Illustration of the rank* of the four selected S.P.A.S. items in preoperative and postoperative period

(i) The Control Group

Patient Code	Preoperative rank of SPAS Items				Postop'tive rank of SPAS Items			
	1	2	3	4	1	2	3	4
C1F	1.2	4.5	4.1	3.1	-	-	-	-
C2M	1.5	4.3	1.2	4.1	1.2	1.5	4.1	4.3
C3M	1.3	1.5	1.2	2.4	2.4	1.5	1.3	1.2
C4F	1.2	3.3	4.1	1.5	1.2	3.3	4.5	4.1
C5M	1.2	3.4	4.5	4.1	3.4	4.1	4.5	1.2
C6F	1.5	2.4	4.1	1.2	1.5	2.4	4.1	1.2
C7F	1.1	1.2	4.1	3.4	1.1	1.2	3.4	4.1
C8F	2.4	3.5	1.2	4.1	2.4	3.5	1.2	4.1
C9M	3.2	4.2	4.1	1.3	3.2	1.3	4.1	4.2
C10F	1.2	2.1	4.2	1.1	1.2	1.1	2.1	4.2
C11M	2.1	3.1	4.2	4.3	2.1	3.1	4.3	4.2
C12F	3.3	1.2	1.1	1.3	3.3	1.3	1.2	1.1
C13M	1.2	4.2	4.1	3.3	3.3	4.1	1.2	4.2
C14M	4.1	4.2	4.3	4.5	4.1	4.3	4.2	4.5
C15M	1.2	2.4	4.1	4.2	4.2	1.2	4.1	2.4
C16M	1.2	4.2	2.4	4.1	1.2	4.2	2.4	4.1
C17M	2.4	1.2	1.3	4.1	1.2	4.1	2.4	1.3
C18M	1.1	1.2	3.3	4.5	1.1	1.2	3.3	4.5
C19F	2.4	4.1	1.1	1.2	2.4	1.2	1.1	4.1
C20F	1.3	4.5	1.2	1.1	1.2	4.5	1.3	1.3
C21F	2.4	4.5	3.1	3.4	3.1	4.5	2.4	3.4
C22F	1.1	1.2	2.4	4.1	1.1	1.2	2.4	4.1
C23F	1.5	2.4	3.1	4.5	1.5	2.4	3.1	4.5
C24F	1.4	4.2	1.1	4.1	1.1	1.4	4.1	4.2
C25F	1.2	2.1	4.3	3.4	2.1	1.2	3.4	4.3
C26F	3.4	4.2	2.3	3.1	2.3	3.4	4.2	3.1
C27M	2.5	4.1	1.2	1.1	1.1	1.2	2.5	4.1
C28M	2.1	3.1	4.1	1.1	3.1	2.1	1.1	4.1
C29M	4.1	3.4	2.4	4.4	2.4	4.1	4.4	3.4
C30M	1.1	2.1	3.1	4.1	1.1	2.1	4.1	3.1

(ii) The Experimental Group

Patient Code	Preoperative rank of SPAS Items				Postop'tive rank of SPAS Items			
	1	2	3	4	1	2	3	4
E1F	4.4	4.1	3.3	1.3	4.4	1.3	3.3	4.1
E2F	3.3	1.2	2.1	4.1	3.3	1.2	4.1	2.1
E3F	2.4	1.3	4.1	4.2	2.4	4.1	4.2	1.3
E4F	4.1	2.2	3.3	4.5	2.2	3.3	4.1	4.5
E5M	2.1	1.1	3.1	4.5	1.1	2.1	3.1	4.5
E6F	1.1	2.1	3.1	4.1	1.1	2.1	3.1	4.1
E7F	3.3	2.4	3.2	3.4	3.4	3.2	3.3	3.2
E8M	3.5	3.3	3.1	2.4	3.3	3.5	3.1	2.4
E9F	3.4	1.2	3.5	4.1	3.4	1.2	3.5	4.1
E10F	3.3	4.4	4.1	1.2	3.3	4.4	1.2	4.1
E11M	1.2	3.1	1.5	4.1	1.5	3.1	4.1	1.2
E12	1.1	1.5	2.4	3.3	1.1	1.5	2.4	3.3
E13	2.1	3.1	3.4	4.3	2.1	3.1	3.4	4.3
E14	2.1	2.4	1.2	1.3	2.1	2.4	1.3	1.2
E15	3.2	4.3	3.1	4.2	4.3	3.1	3.2	4.2
E16	4.1	3.4	2.4	1.2	3.4	1.2	2.4	4.1
E17	4.5	3.4	3.2	4.1	3.2	3.4	4.1	4.5
E18	2.1	1.2	3.2	3.1	1.2	3.2	2.1	3.1
E19	4.1	4.4	3.4	1.2	1.2	4.4	3.4	4.1
E20	4.4	4.2	4.3	4.1	4.4	4.1	4.2	4.3
E21	3.1	3.3	4.1	4.5	3.3	3.1	4.1	4.5
E22	1.1	2.1	3.1	4.1	1.1	2.1	3.1	4.1
E23	3.1	3.2	3.3	3.4	3.1	3.3	3.2	3.4
E24	4.3	4.2	4.1	1.2	4.3	4.2	1.2	4.1
E25	2.5	2.1	4.1	4.5	2.5	4.5	2.1	4.1
E26	1.1	1.2	4.1	1.3	1.2	4.1	1.1	1.3
E27	1.2	1.4	2.2	4.3	1.4	1.2	2.2	4.3
E28	4.2	2.4	4.1	4.3	4.2	2.4	4.1	4.3
E29	2.4	3.3	4.1	4.4	2.4	3.3	4.1	4.4
E30	1.1	2.1	4.1	3.1	1.1	2.1	3.1	4.1

* The ranking of the item both in preoperative and post operative periods was done according to the following:

  1 = the lowest scored item

  2 = the item next to the lowest

  3 = the item next to the highest

  4 = the highest scored item

  The highly scored item indicated high degree of anxiety.

APPENDIX 7.4

7.4.1 Changes in Systolic Blood Pressure and Pulse over the Postoperative Period

(i) The Control Group

Patient Code	Changes Over The Postoperative Period												
	Baseline	Arriving RR*	Leaving RR	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
C1 **	120***	+20	+30	+20	+10	+30	+30	+20	+42	+40	-16		
	78 *	+42	+32	+42	+22	+30	+42	+22	+26	+42	+46		
C2	140	0	0	0	0	0	0	0	0	0			
	72	+24	+24	+14	+24	0	0	-8	0	0			
C3	150	-10	-20	0	0	0	0	0	0	0			
	86	+19	-10	-22	-2	-4	-10	-10	0	0			
C4	130	+10	0	-6	-6	-6	0	0	0	0			
	80	+14	-4	+16	+18	-4	+2	0	0	0			
C5	120	+30	-5	0	0	0	0	0	0				
	72	+24	+12	-8	+6	+8	-12	0	0				
C6	120	+10	+15	+20	+20	0	0	0	0				
	80	-20	-2	+22	+20	-2	+16	0	+4	-6			
C7	150	-20	-30	-20	-40	0	0	0	0	0	0	0	0
	76	+4	+4	+4	+8	+8	+12	+14	-4	0	0	+12	0
C8	150	-40	-25	0	0								
	84	-16	-4	-4	-4								
C9	130	+25	-15	0	0	0	0	0	0	0	0		
	72	+12	0	+28	+16	+10	+8	+22	+20	+14	+2		

Patient Code	Changes Over the Postoperative Period												
	Baseline	Arriving RR	Leaving RR	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
C10	160	-50	-45	0	0	0	0	0	0				
	78	-16	-6	+6	+2	+2	-4	-2	-14				
C11	120	+20	+20	0	0	0	0	0	0	0	0	0	0
	72	+4	0	0	+18	-2	+28	-2	0	+4	-10	+6	-2
C12	120	0	-10	0	0	0	0	0	0	0	0	0	
	76	+24	+8	-4	+6	+8	+14	+4	+2	-6	-2	-6	
C13	135	-15	-10	0	0	0	0						
	78	+2	+14	6	0	0	+8						
C14	120	+10	0	0	0	0	0						
	90	-30	-6	-10	-20	-6	-4						
C15	140	0	-2	0	0	0	0	0	0				
	80	+16	0	+6	0	-6	-6	-4	0				
C16	140	+10	-10	0	0	0	0	0	0	0	0		
	72	+6	+8	+24	+22	+8	+8	+16	+8	+8	+16		
C17	150	+20	-20	0									
	76	0	-2	+2									
C18	130	+20	0	0	0	0	0	0	0	0	0	0	0
	78	-14	-8	0	0	0	0	0	0	0	0	0	0
C19	110	0	0	0									
	78	0	0	+22									
C20	165	+10	-35	0	0	0							
	66	+36	-8	0	0	+14							

Patient Code	Changes Over the Postoperative Period												
	Baseline	Arriving RR	Leaving RR	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
C21	140	+10	-20	0									
	80	+36	+20	+10									
C22	160	+16	+20	0	0	0	0	0	0	0	0	0	0
	90	-10	-10	-10	-22	+2	+4	-6	-22	+8	-30	-26	-30
C23	140	-46	-40	-40	-44	-30							
	72	-16	-12	-8	-2	-6							
C24	120	0	0	0									
	84	0	0	0									
C25	140	-20	-15	0	0	0	0	0	0	0	0	0	0
	75	-5	-10	-1	+1	-6	+7	+5	+3	+5	-3	-8	-5
C26	110	0	0	0	0								
	80	0	0	0	0								
C27	110	+30	+20	0	0	0							
	80	+4	+4	-24	-26	-22							
C28	120	+30	+12	0	+16	+24	+10	+20	+6	0	0	0	
	82	+18	+24	+12	+22	+24	+12	+4	0	+2	+6	+6	
C29	130	0	0	0	0	0	0	0					
	80	0	0	0	0	+14	+8	0					
C30	160	-30	-40	0									
	80	+10	+6	0									

(ii) The Experimental Group

Patient Code	Changes Over the Postoperative Period												
	Baseline	Arriving RR	Leaving RR	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
E1	130	-20	-10	0	0								
	100	0	-16	-28	-38								
E2	120	0	0										
	120	-18	-50										
E3	130	0	-05	0	0	0	0	0	0	0			
	60	+32	+20	+20	+34	+20	+28	+16	+20	+14			
E4	120	-30	-30	0	0	0							
	80	+16	-12	-08	-12	-02							
E5	130	-10	-10	0	0	0	0	-10					
	72	+40	+34	+26	+28	+14	+14	0					
E6	165	-05	-07	-05	0	0	0	0	0				
	96	-08	-16	-16	-16	-16	-02	-20	-26				
E7	180	+10	-25	-30	-40	-46	-54	-52					
	90	+10	-02	+04	+14	+16	+02	-02					
E8	160	+30	+30	0	0	0	0	0	0	0	0	0	
	60	+04	+24	+04	+20	+14	+20	+10	+22	+20	0	+18	
E9	145	+05	-20	+05	0	0	0	0	0	0			
	72	+20	+08	+22	+06	+14	+20	+20	+08	-02			
E10	128	+02	-08	-08	0	0	0	-02	0	0	0	0	0
	75	-19	+01	+05	+05	-05	+05	-01	+03	+03	+03	+15	+05

Patient Code	Changes Over the Postoperative Period												
	Baseline	Arriving RR	Leaving RR	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
E11	120	0	0	0	0								
	76	+12	+10	+04	-06								
E12	120	0	0	0	0								
	80	0	0	-08	+04								
E13	130	-05	0	0	-10	+20	0						
	80	-04	-04	-10	+08	+20	+06						
E14	100	-20	-05	+18	+36	+24	+20	0	0				
	72	+24	+18	+12	+02	+18	+14	+18	+48				
E15	160	-60	+25	-10	-10	0	-10	-30	-30	0	0		
	86	-04	-14	-06	-04	+02	+02	-08	-10	-12	-14		
E16	150	0	0	0	0								
	80	+20	-04	-20	-20								
E17	110	+10	-05	0	0	0	0						
	64	+28	+24	+08	+16	+02	+04						
E18	206	-36	-46	-46	-56	-66	-66	-56					
	80	-08	-08	-08	-16	-04	-04	-14					
E19	120	+30	+10	0	0	0	0	0					
	72	+28	+12	+12	+32	+20	+16	-14					
E20	135	0	-15	0	0	0							
	56	+40	+12	-02	+04	+02							
E21	115	+35	+05	0									
	90	+18	-02	-10									

Patient Code	Changes Over the Postoperative Period												
	Baseline	Arriving RR	Leaving RR	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
E22	115	+05	+05	0	0	0	0	0					
	80	+04	0	-06	-06	0	-12	0					
E23	120	-05	-10	+06	0	0	0	0	0	0			
	100	-24	-16	-12	+02	+02	-22	-20	-18	-20			
E24	150	0	-30	-30	0	0	0	0					
	100	-24	-18	-06	-12	-14	-20	-30					
E25	120	+30	0	0	0	0	0						
	80	-04	+08	+08	+08	+12	+10						
E26	110	+05	0	0	0								
	72	-16	+02	+06	+24								
E27	120	-10	0	0	0	0	0	0	0	0			
	80	-08	-08	-02	+02	+08	+08	+14	+40	-10			
E28	120	+10	-05	0	0	0							
	80	+16	0	+20	0	-08							
E29	120	-10	-10	0	0	0	0	0	0				
	77	+07	-13	+43	+23	+23	+07	+15	-03				
E30	180	0	-40	-40	-36	0	0	0					
	72	+24	+36	+10	+10	+08	-08	+04					

* RR = Recovery Room

**Cl, female, with subtotal gastrectomy, deceased on the eighth postoperative day

*** The above numbers represent systolic blood pressure/mm Hg.

* The below numbers represent pulse rate/minutes

7.4.2 Frequency of decreased and increased duration of systolic blood pressure level and pulse rate over the postoperative period

(i) The Control Group Patients

a. Blood Pressure

Patient's Code	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	C20	C21	C22	C23	C24	C25	C26	C27	C28	C29	C30	Total
Baseline	120	140	156	130	120	120	150	150	130	160	120	120	135	120	140	140	150	130	110	165	140	160	140	120	140	110	110	120	130	160	
Increased deviation (+)	9	-	-	1	1	4	1	2	1	-	2	-	-	1	-	1	1	1	-	1	1	2	-	-	-	-	2	6	-	1	38
Decreased deviation (-)	1	-	2	-	-	-	3	-	1	2	1	1	2	-	-	-	-	-	-	1	1	-	5	2	-	-	-	-	-	1	23

b. Pulse Rate

Patient's Code	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	C20	C21	C22	C23	C24	C25	C26	C27	C28	C29	C30	Total
Baseline	78	72	86	80	72	80	76	84	72	78	72	76	78	90	80	72	76	78	78	66	80	90	72	84	75	80	80	82	80	80	
Increased deviation (+)	10	4	1	3	2	3	3	1	7	-	2	2	1	-	1	5	-	-	-	1	2	-	-	-	-	-	-	7	1	1	57
Decreased deviation (-)	-	-	4	-	2	1	-	-	-	1	1	-	-	3	1	1	-	1	-	2	-	8	2	-	1	-	3	-	-	-	31

(ii) The Experimental Group

a. Blood Pressure

Patient's Code	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12	E13	E14	E15	E16	E17	E18	E19	E20	E21	E22	E23	E24	E25	E26	E27	E28	E29	E30	Total
Baseline	130	120	130	120	130	165	180	160	145	128	120	120	130	100	160	150	110	206	120	135	115	115	120	150	120	110	120	120	120	120	
Increased deviation (+)	-	-	-	-	-	-	1	2	-	-	-	-	1	4	1	-	1	-	2	-	1	-	-	-	1	-	-	1	-	-	15
Decreased deviation (-)	2	-	1	2	3	-	6	-	1	-	-	-	1	1	6	-	-	7	-	1	-	-	1	2	-	-	1	-	2	3	40

b. Pulse Rate

Patient's Code	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12	E13	E14	E15	E16	E17	E18	E19	E20	E21	E22	E23	E24	E25	E26	E27	E28	E29	E30	Total
Baseline	100	120	60	80	72	96	90	60	72	72	76	80	80	72	80	80	64	80	72	56	90	80	100	100	80	72	80	80	77	72	
Increased deviation (+)	-	-	-	1	-	-	3	8	6	1	2	-	1	7	-	1	3	-	6	2	1	-	-	-	2	1	2	2	4	4	57
Decreased deviation (-)	3	2	9	2	6	6	-	-	-	1	-	-	1	-	4	2	-	2	1	-	1	1	6	6	-	1	1	-	1	-	56

APPENDIX 7.5

EXCERPTS OF PATIENT COMMENTS ON THEIR CONDITION *

QUESTION: Lastly, how do you feel about yourself at this moment?

(1) Nothing different from what you used to be

Control

Excerpt 1: I felt very tired for the first few weeks, but seem to have most of my energy back now. It is hard coming home and realize you can't do as well what you were doing before admitting to hospital e.g. getting into the routine with children, meals etc. A 27 year old housewife, with thyroidectomy)

Excerpt 2: I haven't had bath or shower as I still have my wound dressed every day. (A 55 years old housewife with total abdominal hysterectomy)

Experiment

Excerpt 1: Had no problems at all, straight back to household chores, gardening and farmwork. Found that surgery was not frightening as I had imagined. Staff all very friendly. (A 28 years old housewife with excision of breast lump)

Excerpt 2: I was very surprised at being discharged the day after the operation and without anyone inspected my operated toes. (A 26 years old male with infected ingrowing toenails)

Excerpt 3: You will note that I don't appear to be brilliant. It may pass with time. (A 42 years old married man with cholecystectomy)

Excerpt 4: I am just the same other than being a wee bit tired. (A 44 years old lady with total abdominal hysterectomy)

Excerpt 5: The operation I had was not as bad as I expected and my overall condition is excellent. I have more confidence in myself if I have to have any more operations. (A 25 year old female, divorced, with dilation and curettage)

(2) A little bit different from what you used to be

Control

Excerpt 3: I feel quite alright about having the operation done, but if I sit too long where I had the operation goes numb. (A 31 years old man with herniorrhaphy)

Excerpt 4: After the operation I feel adjusted to what goes on. I had no idea how I would feel even though it was quite painful. I now know I could enter another operation feeling a lot calmer. (A 43 years old man with herniorrhaphy)

Experiment

Excerpt 6: I am completely back to normal now at this stage. However, if I had answered the items in Group 1 during my first week home, I would have answered "a little difficult" or "very difficult" to most items. (A 26 years old housewife with stripping and ligation of varicose veins)

Excerpt 7: As I grow older slower to recover. Nurse and doctor very kind, food good, but not so keen on so many women in one enclosure perhaps living on my own account for this. (A 68 years old lady, a widow, for excision of simple squamous cell carcinoma lesion at lower lip)

Excerpt 8: Feeling tired on and off, but feeling I am coming to grips with life again. Very thankful all over. Everyone in the hospital has been most kind, you also. (A 43 years old lady, with thyroidectomy)

Excerpt 9: Great admiration to Dr ....., my doctor for his reassurance re my operation and the great care and kindness of all the nursing staff from first year to charge sister. (A 68 year old man with herniorrhaphy)

Excerpt 10: Before going to the hospital, I made up my mind I would get well quickly. It was this attitude that helped in preparing for discharge. (A 50 year old woman with cholecystectomy)

Excerpt 11: During day, movement loosens affected part, but tend to get slightly sore at night. (A 75 year old man with herniorrhaphy)

Excerpt 12: My operation is hysterectomy, I only wish it had been done years ago instead of putting up with monthly problem. All in all I feel great. (A 51 years old woman with hysterectomy).

Excerpt 13: I feel that relationships between doctors and patients could be on a more informative level, also I feel that the anxiety part in a patient is a very important factor which should be dealt with in the hospital (as such) or to an even deeper extent using force like psychology, religion especially Christianity to help people spiritually especially in severe cases needing sound counseling that will help them to restore themselves mentally. I came across many patients who could not express their innermost fears, thought, self doubts etc. and they didn't know how to cope with it outwardly at all. The people faced with life/death situations or extreme damaging situation in hospital, I think especially need more help than they are getting. (A 27 year old housewife with some university education background, for stripping and ligation of varicose veins)

Excerpt 14: Learning to relax and spend more time with the family, wife and four girls, 16, 15, 14 and 10 years. (A 44 year old working man with herniorrhaphy)

(3) Very different from what you used to be

Control

No comments

Experiment

Excerpt 15: I was not afraid of the operation as I knew before I went in what this entails plus the fact that I knew what was to be done or happened. Expected more pain, so was prepared, was not so bad as I was lead to believe, therefore cope with this. Hence, my straightforward answer only trouble when I had coming home was the fact being tired and having to look after 3 children and household chores. (A 29 year old housewife with Haemorrhoidectomy)

Excerpt 16: Question 2 and 3, I usually pot, but clay work too heavy after hernia operation. Question 8, I think my outlook on life very different. (A 53 year old woman with herniorrhaphy)

(4) Extremely different from what you used to be

Excerpt 5: Since I had my operation, I feel like a new person. It's lovely to be home and no more pain. I get very depressed after I got home, so the doctor put me on some tablets to take at night. (A 23 year old housewife with coccygectomy).

Excerpt 17: I still have a lot of backache and find it hard to lay down on my back. (A 23 year old housewife with coccygectomy).

* These excerpts were presented in the original form; thus some statements made may not be grammatically correct.

APPENDIX 7.6

Comparison of Daily Activities Checklist Score Between the Control and Experimental Groups With Respect to its Categories

Groups	D.A.C. Mean Score According to Categories				
	A. Personal hygiene Total Score = 32	B. Household Activities Total Sc. = 32	C. Sleep Pattern Total Score = 8	D. Work-job Associated Activities Total Score = 20	E. Leisure & Past-Time Activities Total Score = 28
Control (N = 22)	30.55	30.36	7.00	18.09	24.68
Experimental (N = 26)	30.31	28.33	7.19	18.23	24.00
t-value *	.06	1.40 **	0.56	0.13	0.46

* No significant difference between the control and experimental means.

** 0.20 (0.10, degree of freedom (df) = 46, the difference was not significant.

APPENDIX 7.7

PATIENT'S CONDITION

Evaluation (P.C.E.) Score with respect to the nurse independent observers and its categories

7.10.1 Patient's condition evaluation score during the first 48 hours post operation as evaluated by supervising and bedside caregiving nurse.

(i) Control Group

Patient Code	Patient evaluated by Nurse				Total (Incl. F)	Avge.
	S'vising Level	Overall*	Bedside Caregiver	Overall		
C1	86	16	-	-	-	102.0
C2	89	19	98	20	226	113.0
C3	101	18	110	17	246	123.0
C4	121	23	123	20	287	143.0
C5	106	19	101	14	240	120.0
C6	87	11	96	18	212	106.0
C7	118	21	98	13	250	125.0
C8	65	12	71	13	161	80.5
C9	75	12	80	14	181	90.5
C10	98	14	102	15	229	114.5
C11	104	22	105	20	251	125.5
C12	105	17	95	18	235	117.5
C13	84	15	88	15	202	101.5
C14	110	20	113	19	262	131.0
C15	115	20	108	20	263	131.5
C16	63	13	75	14	165	82.5
C17	113	20	113	22	268	134.5
C18	65	8	79	15	167	83.5
C19	123	25	120	21	289	144.5
C20	75	9	76	12	172	86.0
C21	119	25	111	23	278	139.0
C22	75	13	90	14	192	96.0
C23	99	20	112	23	254	127.0
C24	103	20	118	19	260	130.0
C25	103	15	102	12	232	116.0
C26	123	25	124	25	297	148.5
C27	104	15	125	22	266	133.0
C28	64	6	60	9	139	69.5
C29	111	22	108	16	257	128.5
C30	125	25	118	25	293	146.5

(ii) The Experimental Group

Patient's Code	Patient evaluated by Nurse				Total (Incl. F)	Avge.
	S'vising Level	Overall	Bedside Caregiver	Overall		
E1	124	25	117	23	289	114.5
E2	109	22	97	14	242	121.0
E3	104	13	106	16	239	119.5
E4	113	18	105	18	254	127.0
E5	109	21	90	18	238	119.0
E6	74	14	110	19	217	108.5
E7	105	20	111	20	256	128.0
E8	112	23	100	18	253	126.5
E9	80	15	121	23	239	119.5
E10	96	16	118	20	250	125.0
E11	96	17	105	18	236	118.0
E12	91	20	-	-	-	111.0
E13	88	19	115	22	244	122.0
E14	82	17	104	22	225	112.5
E15	101	16	92	16	225	112.5
E16	87	19	-	-	-	106.0
E17	105	19	104	18	246	123.0
E18	101	19	86	18	224	112.0
E19	91	17	93	17	218	109.0
E20	101	23	109	20	253	126.5
E21	116	18	108	16	258	129.0
E22	100	18	80	19	217	108.5
E23	74	14	100	22	210	105.0
E24	91	15	89	16	211	105.5
E25	96	15	110	18	239	119.5
E26	120	23	117	21	281	140.5
E27	104	17	102	18	241	120.5
E28	103	17	79	21	220	110.0
E29	96	17	67	14	194	97.0
E30	98	15	113	19	245	122.5

* Category F : Overall Evaluation see appendix 5.5

7.10.2 Patient's Condition Evaluation Score According to Specific Categories as Evaluated by Two Levels of Independent Nurse Observer *

(i) The Control Group

Patient's Code		Patient condition eval'n score according to specific categ's					
		A Physical	B Sensory	C Cognitive clarity	D Psycho-social	E Communication	F Overall
C1	N1	15	15	19	19	18	16
	N2	-	-	-	-	-	-
C2	N1	19	18	20	17	15	19
	N2	21	23	24	16	14	20
C3	N1	19	19	23	20	20	18
	N2	20	20	22	25	23	17
C4	N1	24	22	25	25	25	23
	N2	25	24	24	25	25	20
C5	N1	22	22	25	15	22	19
	N2	15	16	22	33	25	14
C6	N1	10	14	14	16	13	11
	N2	19	19	23	18	17	18
C7	N1	25	22	22	25	24	21
	N2	17	19	22	16	24	13
C8	N1	15	11	14	14	11	12
	N2	15	12	18	16	16	13
C9	N1	11	10	21	15	18	12
	N2	10	13	19	23	15	14
C10	N1	15	19	24	21	19	14
	N2	13	18	25	23	23	15
C11	N1	19	20	23	22	20	22
	N2	22	21	22	20	20	20
C12	N1	16	22	25	18	24	17
	N2	18	15	23	17	22	18
C13	N1	15	14	25	15	15	15
	N2	15	15	23	20	15	15
C14	N1	25	20	25	20	20	20
	N2	20	22	25	25	21	19
C15	N1	25	20	25	25	20	20
	N2	20	18	25	25	20	20
C16	N1	12	12	15	12	12	13
	N2	15	15	15	15	15	14
C17	N1	24	24	25	20	20	20
	N2	25	20	24	20	20	22
C18	N1	13	8	17	14	13	8
	N2	14	15	20	15	15	15
C19	N1	23	25	25	25	25	25
	N2	22	23	25	25	25	21
C20	N1	15	9	21	16	14	9
	N2	18	13	15	15	15	12
C21	N1	25	24	25	25	20	25
	N2	21	20	25	25	20	23
C22	N1	9	10	20	20	16	13
	N2	14	17	24	20	15	14
C23	N1	20	19	20	20	20	20
	N2	24	23	20	25	20	23
C24	N1	25	20	20	20	18	20
	N2	25	25	25	25	18	19
C25	N1	21	17	20	25	20	15
	N2	23	18	22	20	19	12
C26	N1	25	25	25	25	25	25
	N2	24	25	25	25	25	25
C27	N1	19	19	22	24	20	15
	N2	25	25	25	25	25	22
C28	N1	9	13	21	10	11	6
	N2	5	9	20	13	13	9
C29	N1	25	20	23	18	25	22
	N2	25	23	25	19	16	16
C30	N1	25	25	25	25	25	25
	N2	24	24	20	25	25	25

(ii) The Experimental Group

Patient's Code		Patient condition eval'n score according to specific categ's					
		A Physical	B Sensory	C Cognitive clarity	D Psycho-social	E Communication	F Overall
E1	N1	24	25	25	25	25	25
	N2	23	25	22	22	25	23
E2	N1	21	21	24	21	22	22
	N2	18	14	21	24	20	14
E3	N1	18	19	25	21	21	13
	N2	19	18	25	21	23	16
E4	N1	20	18	25	25	25	18
	N2	13	21	25	25	21	18
E5	N1	21	25	23	21	19	21
	N2	21	18	19	16	16	18
E6	N1	16	15	15	13	15	14
	N2	23	18	22	22	25	19
E7	N1	20	20	19	21	25	20
	N2	20	21	23	22	25	20
E8	N1	16	22	24	25	25	23
	N2	17	21	24	21	17	18
E9	N1	19	14	17	15	15	15
	N2	24	24	25	24	24	23
E10	N1	11	18	25	23	19	16
	N2	12	20	25	21	20	20
E11	N1	21	19	18	20	18	17
	N2	21	20	22	20	22	18
E12	N1	19	17	25	18	12	20
	N2	-	-	-	-	-	-
E13	N1	14	23	20	17	14	19
	N2	22	24	23	24	22	22
E14	N1	13	16	21	16	16	17
	N2	17	21	22	22	22	22
E15	N1	16	20	23	22	20	16
	N2	16	20	19	20	17	16
E16	N1	13	17	22	19	16	19
	N2	-	-	-	-	-	-
E17	N1	22	21	23	23	16	19
	N2	19	19	24	22	20	18
E18	N1	17	21	24	18	21	19
	N2	16	16	20	15	19	18
E19	N1	18	19	17	18	19	17
	N2	21	18	15	19	20	17
E20	N1	23	18	22	22	16	23
	N2	19	21	23	24	22	20
E21	N1	23	23	24	25	21	18
	N2	20	19	25	25	19	16
E22	N1	18	16	22	22	22	18
	N2	11	17	13	19	20	19
E23	N1	12	12	18	14	18	14
	N2	21	18	22	21	18	22
E24	N1	22	12	20	20	17	15
	N2	15	12	24	17	21	16
E25	N1	19	18	21	18	20	15
	N2	18	24	22	23	23	18
E26	N1	22	23	25	25	25	23
	N2	21	24	23	24	25	21
E27	N1	16	17	24	22	25	17
	N2	16	17	21	23	25	18
E28	N1	20	21	23	20	19	17
	N2	20	10	14	15	20	21
E29	N1	14	19	20	22	21	17
	N2	9	12	14	16	16	14
E30	N1	19	16	23	20	20	15
	N2	20	20	25	25	23	19

* N_1 = Supervising nurse

N_2 = Bed side care-giving nurse

7.10.3 The Comparison of the Control and Experimental Groups on the Patient Condition Evaluation Score as Evaluated by Nurse A and B *

(i) Comparison of Statistical Value derived from the evaluation made by Nurse A and B

Groups	Patient condition score as evaluated by Nurse A								Patient condition score as evaluated by Nurse B							
	Mean	Variance	Range	Sum	SE	SD	Min.	Max.	Mean	Variance	Range	Sum	SE	SD	Min.	Max.
Control	114.97 (A)	597.41	80.00	3449.00	4.46	24.44	70.00	150.00	118.17 (B)	436.58	80.00	3427.00	3.88	20.89	69.00	149.00
Experi-mental	116.97 (C)	211.34	61.00	3509.00	2.65	14.54	80.00	149.00	120.46 (D)	213.59	63.00	3373.00	2.76	14.62	81.00	144.00
Total Group	115.97 (E)	398.54	80.00	6958.00	2.58	19.96	70.00	150.00	119.30 (F)	322,61	80.00	6800.00	2.38	17.96	69.00	149.00

* Nurse A = Supervising nurse
Nurse B = Bedside care-giving nurse
SE = Standard error
SD = Standard deviation

(ii) t-test of significance difference

Pairs	t-values **	df
t-values between (A) and (B)	-1.28	28
t-values between (C) and (D)	-0.73	27
t-values between (E) and (F)	-1.28	56
t-values between (A) and (C)	-0.39	58
t-values between (B) and (D)	-0.48	55

** no significant difference between all pairs

df = degree of freedom

7.10.4 Nurse Comments on Patients' General Condition

Most of the nurses completed the Patient Condition Evaluation form (PCE) in a satisfactory manner, but the decision whether or not to comment on patient's general condition was left with the nurse, hence not all the patient has been commented. Therefore, the content of these comments were not statistically analysed. However, they provide a brief description of patients' condition from the nurses' point of view. More comments were made on the experimental patients than on the control patients. This may be due to the fact that the experimental group was studied before the control group. The nurses might have been more actively concerned in the early stage.

Overall, evidence of anxiety, low level of adjustment, pain, hesitation to mobilize as well as inability or unwillingness to communicate were obvious in the control group patients. These evidence were different from those of the experimental group which gave the picture of a well-adjusted patient with good communication, early ambulation and freedom from pain.

Some of the nurse comments are presented as follows: [1]

(i) The Control Group

A 77 year old woman with subtotal gastrectomy:

- Patient is very tired but alert and oriented, needs assistance with turning and cares, improving all the time. (S/N) [2]

A 31 year old man with herniorrhaphy:

- Mr ... is doing extremely well postop although in pain at times. He refuses pain relief except to settle at night. (S/N)
- He seems to be coping well with this particular survery. (S/Nse)

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1 These comments are presented in their original form. Thus, some statement might not be grammatically correct.

2 Abbreviations used are: CHN = charge nurse; S/N = staff nurse; S/Nse = student nurse; E/N = enrolled nurse and S/S = staff sister, block or senior supervisor.

A 56 year old man with herniorrhaphy:

- Mr ... is doing well for day 1 postop although he is quite reluctant to mobilize, feels more comfortable on bed. Pain relief only to settle at night. (S/N)

- A little reluctant to mobilize. Had pain relief to settle. Communicate well to ward staff and patients. Maintains own hygiene requirement, making satisfactory progress from operation. (E/N)

A 32 year old woman with total abdominal hysterectomy:

- Mrs ... is a very anxious woman, but reluctant to talk to staff about condition. Preferred to talk about lighter topics, if cancer is mentioned, she passes over it quickly. (S/N)

- Have known Mrs ... only postoperatively and she has underlying problems which she wishes to discuss only with relatives. She is in a room of her own otherwise she would be more interested in ward activities. Is not willing to present any problems to nursing staffs. (S/Nse)

A 41 year old woman with total abdominal hysterectomy:

First day post-op and isolated in a single room. Pain due to urinary retension rather than operation. Pain relief effective. Talking and communicating well and interested in all post-op exercises like breathing exercises. (S/Nse)

A 47 year old woman with dilatation and currettage:

Lady with low pain threshold that appears confused and anxious, scared to ask questions. (S/Nse)

A 29 year old woman with cholecystectomy:

Patient is still recovery from surgery and has been on prolonged bed rest due to the blood transfusion. She is coping well with her operation and postoperatively. (S/N)

A 50 year old man with right herniorrhaphy:

Extremely good post-op. Well adjusted to ward and able to cope with post-op period well. (S/N)

Patient has adjusted well to the ward and environment and is coping remarkably well on 1st day post-op. (S/Nse)

A 38 year old woman with haemorrhoidectomy:

Difficult to comment on sleeping pattern as have not been on duty at that time. Does not like being in hospital, but understand the necessity for it and has adjusted to it accordingly. (S/Nse)

(ii) The Experimental Group

A 28 year old woman with excision of breast lump:

Very well adjusted to hospital situation, understands nature of operation fully. Has good family support. (S/N)

A 16 year old woman with wedge resection of infected ingrowing toenails:

Patient does not seem to be coping well with her condition as well as expected. (S/N)

A 29 year old woman with haemorrhoidectomy:

Progressing well despite the discomfort of the operation. (S/N)

Satisfactory post-op recovery. (S/Nse)

A 26 year old woman with varicose veins:

Mrs ... has adjusted well to her hospitalization and is coping well after surgery. (S/N)

A 16 year old man with herniorrhaphy:

Seems to understand and cope with his condition and treatment well, no difficult in communicating with staff and other patients and visitors, well adjusted. (S/N)

Readiness and accepts need of treatment. Relating well to other patients. Free of pain.

A 68 year old woman with simple squamous cell carcinoma at lower lip lesion:

Inclined to be disinterested in surrounding and progress after operation. Has had same operation before for ? malignancy. (This patient had admitted in one ward and transferred to the other ward from the operating theatre. She was not happy with this arrangement and was not certain about whether the affected lesion had been

removed completely: the author's comments)

A 43 year old woman with thyroidectomy:

Satisfactory progress for day 1 postop. (S/S)

This patient managed exceptionally well with her immediate postop progress. (CHN)

Pleasant, bright well-adjusted lady who accepts hospitalization well. (S/N)

Mrs ... is a cheerful lady, who in my short period of observation appears to have adjusted quite well to a hospital environment especially considering she is used to private hospital treatment. (S/Nse)

A 68 year old man with herniorrhaphy:

Satisfactory and progressing well for length of time postoperative. (CHN)

Extremely bright active man for his age, seems happy and content. (S/Nse)

A 53 year old woman with right herniorrhaphy:

This patient is fully mobile. (S/N)

Very pleasant lady in no distress. She does understand her condition well and has a large degree of self acceptance. Communicates well with staff and other patients.

A 50 year old woman with cholecystectomy:

At present is still recovering from immediate post-operative period. (S/N)

Patient has adjusted very well to surgery, accepts it as necessary and optimistic in quick recovery. Quite alert and talking considering only one day postop. (S/Nse)

A 16 year old man with epigastric hernia for herniorrhaphy:

Good acceptance and progress for first postop day. (CHN)

A 53 year old man with herniorrhaphy (and large hydracolle):

Mr ... has few family member and no real friend lives in a war vets home. Doing extremely well post-op. (S/N)

Mr ... was up two hours postop. He has adjusted to this reasonably well. His older brother was also a patient in this ward, so he has plenty of time to visit him. (S/Nse)

A 26 year old woman with cholecystectomy:

Mrs ... is doing well in all aspects of her postop care. (S/N)

A 56 year old man with cholecystectomy:

This patient is doing well as can be expected for his stage of postoperative recovery.

A 75 year old man with herniorrhaphy:

Very good postop especially for age. Managing well.
Almost free from pain. (S/N)

A 42 year old man with cholecystectomy:

Mr ... is well adjusted and seems to cope a lot better under all circumstances. (S/N)

A 51 year old woman with total abdominal hysterectomy:

I feel she is progressing. (S/N)

A 47 year old woman with total abdominal hysterectomy:

Progressing reasonably well except for her inability to pass urine which was causing discomfort and some degree of anxiety. (S/Nse)

A 25 year old woman with dilatation and currettage:

Patient seems well adjusted to her condition. Well adjusted for hospital and well accepting by other patients. (S/N)

A 72 year old woman with infected great toenails:

An overall well adapted patient. Coping well with present condition. (CHN)

Very pleasant well adjusted lady who seems to be coping very well. (S/Nse)

A 27 year old woman with varicose veins:

Progressing normally following this type of surgery. (S/N)

A 28 year old woman with coccygectomy:

Adjusts well to ward routines, is handling her pain well. (S/N)

Seems to have adjusted easily to hospitalization, but had disturbed sleep due to pain and other patients waking her. (S/Nse)

A 44 year old man with right herniorrhaphy:

Had adjusted well to the ward routine, is managing well post-operatively and gets along well with other nurses and patients. (S/N)

APPENDIX 7.8

INTERCORRELATION MATRICES OF SELECTED VARIABLES IN THE TOTAL, CONTROL AND EXPERIMENTAL GROUPS

The correlation coefficient between selected variables using Pearson product-moment correlation procedure are shown in this appendix. The abbreviation used are:

MARITSTS	=	Marital Status
#PREVHSP	=	No. of previous hospitalization
#PREVOPS	=	No. of previous operation
SITUATN	=	No. of SPAS situation happened
IMAGINTN	=	Degree of imagination
SPAS1	=	SPAS component 1 : Control of situation
SPAS2	=	SPAS Component 2 : Pain
SPAS3	=	SPAS Component 3 : Death and anaesthesia
TOTLSPAS	=	Total SPAS score
PCE1	=	Patient condition evaluation by Nurse A : Supervising Nurse
PCE2	=	Patient condition evaluation by Nurse B: Bedside caregiving nurse
DAC	=	Daily activity checklist score
PRESPAS	=	Preoperative SPAS score
POSTSPAS	=	Postoperative SPAS score
LTHSTAY	=	Length of hospital stay
TINOR	=	Time in operating room : Minutes
TINRR	=	Time in recovery room : Minutes
COP	=	Number of complaint of pain
PAINRGVN	=	Number of pain relief given

7.11.1 Intercorrelations between selected variables of the total group

PEARSON CORRELATION COEFFICIENTS

	AGE	MARITSTS	#PREVMSP	#PREVOPS	SITUATN	IMAGINTN	SPAS1	SPAS2	SPAS3	SPAS4
AGE	1.0000**	0.3627*	0.0076	-0.1000	-0.0713	-0.1531	-0.4784**	-0.4524**	-0.3044	-0.3843*
MARITSTS	0.3627*	1.0000**	-0.1541	-0.0939	-0.2433	-0.3605*	-0.2776	-0.1491	-0.1284	-0.1478
#PREVMSP	0.0076	-0.1541	1.0000**	0.8436**	0.0890	-0.1573	0.0815	0.0518	-0.0757	-0.0544
#PREVOPS	0.1000	-0.0939	0.8436**	1.0000**	0.1045	-0.1683	-0.1282	-0.0869	-0.1297	-0.1548
SITUATN	-0.0713	-0.2433	0.0890	0.1045	1.0000**	0.3345*	0.0453	0.0666	-0.1092	-0.0549
IMAGINTN	-0.1531	-0.3605*	-0.1573	-0.1683	0.3345*	1.0000**	0.3000	0.1317	0.2029	0.2045
SPAS1	-0.4784**	-0.2776	0.0815	0.1282	0.0453	0.3000	1.0000**	0.6503**	0.5422**	0.7366**
SPAS2	-0.4524**	-0.1491	0.0518	0.0869	0.0666	0.1317	0.6503**	1.0000**	0.7670**	0.6237**
SPAS3	-0.3044	-0.1284	-0.0757	-0.1297	-0.1092	0.2029	0.5422**	0.7670**	1.0000**	0.5930**
SPAS4	-0.3843*	-0.1478	-0.0544	-0.1548	-0.0549	0.2045	0.7366**	0.6237**	0.5930**	1.0000**
TOTLSPAS	-0.4665**	-0.2047	-0.0063	-0.1495	-0.0231	0.2494	0.8564**	0.8619**	0.8391**	0.8773**
PCE1	-0.3294	0.1280	0.0255	-0.0383	-0.0377	-0.0470	0.1633	0.2201	0.2551	0.2232
PCE2	-0.1767	0.2171	0.1625	0.1392	-0.2072	-0.0834	0.1423	0.1587	0.2000	0.1559
DAC	0.0321	0.2842	-0.5579**	-0.6800**	0.0802	0.1395	-0.0257	-0.1216	-0.0507	0.0772
PRESPAS	-0.4094*	-0.2388	0.0115	0.1295	0.0362	0.2869	0.8326**	0.6452**	0.5932**	0.8468**
POSTSPAS	-0.1282	-0.1671	0.0317	0.0823	-0.0481	0.1595	0.5321**	0.3273	0.2646	0.5120**
LTHSTAY	0.3689*	-0.1615	-0.1744	0.1195	0.2190	0.1832	-0.3159	-0.3905*	-0.2674	-0.2892
TINUR	0.1630	-0.0835	-0.0231	0.0084	0.1362	0.1254	-0.0954	-0.1175	-0.0289	-0.0147
TINRR	0.0471	-0.2204	0.0745	0.2324	-0.0206	0.2570	-0.0429	-0.2394	-0.0835	0.0463
CUP	-0.0214	-0.2042	-0.1602	-0.0705	0.3505*	0.2543	-0.0714	-0.1422	-0.0800	-0.0508
PAINRGVN	0.1261	-0.2169	-0.1503	0.0643	0.2827	0.1609	-0.1339	-0.2521	-0.1208	-0.0962

	TOTLSPAS	PCE1	PCE2	DAC	PRESPAS	POSTSPAS	LTHSTAY	TINUR	TINRR	CUP	PAINRGVN
AGE	-0.4665**	-0.3294	-0.1767	0.0321	-0.4094*	-0.1282	0.3689*	0.1630	0.0471	-0.0214	0.1261
MARITSTS	-0.2047	0.1280	0.2171	0.2842	-0.2388	-0.1671	-0.1615	-0.0835	-0.2204	-0.2042	-0.2169
#PREVMSP	-0.0063	0.0255	0.1625	-0.5579**	0.0115	0.0317	-0.1744	-0.0231	0.0745	-0.1602	-0.1503
#PREVOPS	-0.1495	-0.0383	0.1392	-0.6800**	-0.1295	0.0823	0.1195	0.0084	0.2324	-0.0705	0.0643
SITUATN	-0.0231	-0.0377	-0.2072	0.0802	0.0362	0.0481	0.2190	0.1362	-0.0206	0.3505*	0.2827
IMAGINTN	0.2494	-0.0470	-0.0834	0.1395	0.2869	0.1595	0.1832	0.1254	0.2570	0.2543	0.1609
SPAS1	0.8564**	0.1633	0.1423	-0.0257	0.8326**	0.5321**	-0.3159	-0.0954	-0.0429	-0.0714	-0.1339
SPAS2	0.8619**	0.2201	0.1587	-0.1216	0.6452**	0.3273	-0.3905*	-0.1175	-0.2394	-0.1422	-0.2521
SPAS3	0.8391**	0.2551	0.2000	-0.0507	0.5932**	0.2646	-0.2674	-0.0289	-0.0835	-0.0800	-0.1208
SPAS4	0.8773**	0.2232	0.1559	0.0772	0.8468**	0.5120**	-0.2892	-0.0147	0.0463	-0.0508	-0.0962
TOTLSPAS	1.0000**	0.2515	0.1930	0.0235	0.8588**	0.4860**	-0.3676*	-0.0499	-0.0776	-0.0937	-0.1647
PCE1	0.2515	1.0000**	0.6292**	0.0962	0.1696	0.0454	-0.5269**	-0.0108	-0.1139	-0.3539*	-0.2671
PCE2	0.1930	0.6292**	1.0000**	0.0346	0.1250	0.0142	-0.5316**	-0.1033	-0.2128	-0.3855*	-0.3772*
DAC	-0.0235	0.0962	0.0346	1.0000**	-0.0803	-0.0811	0.0933	0.0676	0.0129	0.0013	0.0421
PRESPAS	0.8588**	0.1696	0.1250	-0.0803	1.0000**	0.6422**	-0.2634	0.0153	-0.0090	-0.0070	-0.0427
POSTSPAS	0.4860**	0.0454	0.0142	-0.0811	0.6422**	1.0000**	0.1209	0.1238	0.3391	0.0934	0.0201
LTHSTAY	-0.3676*	-0.5269**	-0.5316**	0.0933	-0.2634	0.1209	1.0000**	0.2537	0.3391	0.5988**	0.5399**
TINUR	-0.0499	-0.0108	-0.1033	0.0676	0.0153	0.1148	0.2537	1.0000**	0.3857*	0.0858	0.4307*
TINRR	-0.0776	-0.1139	-0.2128	0.0129	-0.0090	0.1238	0.3391	0.3857*	1.0000**	0.1489	0.2802
CUP	-0.0937	-0.3539*	-0.3855*	0.0013	-0.0070	0.0934	0.5988**	0.0858	0.1489	1.0000**	0.6462**
PAINRGVN	-0.1647	-0.2671	-0.3772*	0.0421	-0.0427	0.0201	0.5399**	0.4307*	0.2802	0.6462**	1.0000**

* - SIGNIF. LE .01 ** - SIGNIF. LE .001 (99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED)

7.11.2 Intercorrelations between selected variables of the control group

- - - - - - - - - - - - - - P E A R S O N   C O R R E L A T I O N   C O E F F I C I E N T S - - - - - - - - - - - - - -

	AGE	MARITSTS	#PREVHSP	#PREVOPS	SITUATN	IMAGINTN	SPAS1	SPAS2	SPAS3	SPAS4
AGE	1.0000**	0.3219	-0.1650	0.0969	0.0324	-0.2122	-0.4047	-0.3776	-0.3305	-0.2404
MARITSTS	0.3219	1.0000**	-0.0140	0.1294	-0.1182	-0.3611	-0.1318	-0.0666	-0.1423	0.0866
#PREVHSP	-0.1650	-0.0140	1.0000**	0.5536*	0.0644	-0.2340	0.2467	0.3562	0.1503	0.0183
#PREVOPS	0.0969	0.1294	0.5536*	1.0000**	0.2140	-0.1057	-0.1512	-0.0268	0.0240	-0.0784
SITUATN	0.0324	-0.1182	0.0644	0.2140	1.0000**	0.2844	0.0647	0.1162	-0.2075	-0.1068
IMAGINTN	-0.2122	-0.3611	-0.2340	-0.1057	0.2844	1.0000**	0.1835	0.0097	0.2147	0.0618
SPAS1	-0.4047	-0.1318	0.2467	-0.1512	0.0647	0.1835	1.0000**	0.5165*	0.3692	0.6464**
SPAS2	-0.3776	-0.0666	0.3562	-0.0268	0.1162	0.0097	0.5165*	1.0000**	0.5558*	0.4997*
SPAS3	-0.3305	-0.1423	0.1503	0.0240	-0.2075	0.2147	0.3692	0.5558*	1.0000**	0.4624
SPAS4	-0.2404	0.0866	0.0183	-0.0784	-0.1068	0.0618	0.6464**	0.4997*	0.4624	1.0000**
TOTLSPAS	-0.4133	-0.0667	0.2134	-0.0823	-0.0539	0.1504	0.8249**	0.7546**	0.7277**	0.8613**
PCE1	-0.3695	0.2733	0.1515	0.0430	-0.2020	-0.2027	0.0690	0.1139	0.2494	0.1448
PCE2	-0.4264	0.2639	0.2651	0.3290	-0.0701	-0.1252	0.0697	0.0920	0.1656	0.1172
DAC	0.2132	0.4034	0.1568	0.1818	-0.2811	-0.2447	0.0341	-0.0838	-0.0630	0.0565
PRESPAS	-0.4003	0.0459	0.0921	-0.1403	-0.0050	0.1529	0.7846**	0.5936**	0.6054**	0.8550**
POSTSPAS	-0.0224	0.1613	0.2140	0.1043	-0.0234	-0.1737	0.4524	0.3133	0.2286	0.4689
LTHSTAY	0.3420	-0.2238	-0.2227	-0.0013	0.1820	0.0623	-0.2980	-0.3990	-0.2727	-0.2737
TINOR	0.2560	-0.0894	0.0530	0.2897	0.0702	0.0832	-0.1246	-0.1306	0.1052	-0.0199
TINRR	0.1837	-0.1263	-0.0346	0.2805	-0.2060	0.0467	-0.2037	-0.4295	-0.1259	-0.0313
COP	0.0412	-0.0307	-0.3817	-0.1106	0.3002	0.2311	-0.1278	-0.2179	-0.0715	-0.0749
PAINRGVN	0.2669	-0.1176	-0.3072	-0.0309	0.1716	0.0599	-0.1660	-0.2650	-0.0312	-0.1063

	TOTLSPAS	PCE1	PCE2	DAC	PRESPAS	POSTSPAS	LTHSTAY	TINOR	TINRR	COP	PAINRGVN
AGE	-0.4133	-0.3695	-0.4264	0.2132	-0.4003	-0.0224	0.3420	0.2560	0.1837	0.0412	0.2669
MARITSTS	-0.0667	0.2733	0.2639	0.4034	0.0459	0.1613	-0.2238	-0.0894	-0.1263	-0.0307	-0.1176
#PREVHSP	0.2134	0.1515	0.2651	0.1568	0.0921	0.2140	-0.2227	0.0530	-0.0346	-0.3817	-0.3072
#PREVOPS	-0.0823	0.0430	0.3290	0.1818	-0.1403	0.1043	-0.0013	0.2897	0.2805	-0.1106	-0.0309
SITUATN	-0.0539	-0.2020	-0.0701	-0.2811	-0.0050	-0.0234	0.1820	0.0702	-0.2060	0.3002	0.1716
IMAGINTN	0.1504	-0.2027	-0.1252	-0.2447	0.1529	-0.1737	0.0623	0.0832	0.0467	0.2311	0.0599
SPAS1	0.8249**	0.0690	0.0697	0.0341	0.7846**	0.4524	-0.2980	-0.1246	-0.2037	-0.1278	-0.1660
SPAS2	0.7546**	0.1139	0.0920	-0.0838	0.5936**	0.3133	-0.3990	-0.1306	-0.4295	-0.2179	-0.2650
SPAS3	0.7277**	0.2494	0.1656	-0.0630	0.6054**	0.2286	-0.2727	0.1052	-0.1259	-0.0715	-0.0312
SPAS4	0.8613**	0.1448	0.1172	0.0565	0.8550**	0.4689	-0.2737	-0.0199	-0.0313	-0.0749	-0.1063
TOTLSPAS	1.0000**	0.1791	0.1461	-0.0037	0.9134**	0.4780*	-0.3767	-0.0460	-0.2177	-0.1411	-0.1653
PCE1	0.1791	1.0000**	0.8639**	0.0755	0.1163	0.0235	-0.5721**	-0.0371	-0.1577	-0.3545	-0.2329
PCE2	0.1461	0.8639**	1.0000**	0.1409	0.0752	-0.0318	-0.6005**	-0.0640	-0.1590	-0.4137	-0.3410
DAC	-0.0037	0.0755	0.1409	1.0000**	0.0281	-0.0668	-0.2250	-0.1728	-0.0484	-0.4054	-0.3297
PRESPAS	0.9134**	0.1163	0.0752	0.0281	1.0000**	0.5248*	-0.2932	0.0698	-0.1462	0.0120	-0.0217
POSTSPAS	0.4780*	0.0235	-0.0318	-0.0668	0.5248*	1.0000**	0.2127	0.3059	0.0656	0.0578	0.0752
LTHSTAY	-0.3767	-0.5721**	-0.6005**	-0.2250	-0.2932	0.2127	1.0000**	0.1756	0.3717	0.6715**	0.5375*
TINOR	-0.0460	-0.0371	-0.0640	-0.1728	0.0698	0.3059	0.1756	1.0000**	0.4422	0.0048	0.4690
TINRR	-0.2177	-0.1577	-0.1590	-0.0484	-0.1462	0.0656	0.3717	0.4422	1.0000**	0.1479	0.2220
COP	-0.1411	-0.3545	-0.4137	-0.4054	0.0120	0.0578	0.6715**	0.0048	0.1479	1.0000**	0.6232**
PAINRGVN	-0.1653	-0.2329	-0.3410	-0.3297	-0.0217	0.0752	0.5375*	0.4690	0.2220	0.6232**	1.0000**

* - SIGNIF. LE .01   ** - SIGNIF. LE .001   (99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED)

7.11.3 Intercorrelations between selected variables of the experimental group

- - - - - - - - - - - - - - - - P E A R S O N C O R R E L A T I O N C O E F F I C I E N T S - - - - - - - - - - - - - - - -

	AGE	MARITSTS	#PREVHSP	#PREVOPS	SITUATN	IMAGINTN	SPAS1	SPAS2	SPAS3	SPAS4
AGE	1.0000**	0.4549	0.0905	-0.1201	-0.1832	-0.2557	-0.6042**	-0.4383*	-0.2717	-0.5546*
MARITSTS	0.4549	1.0000**	-0.2411	-0.2062	-0.3347	-0.2340	-0.3768	-0.2697	-0.1657	-0.3339
#PREVHSP	0.0905	-0.2411	1.0000**	0.9317**	0.1170	-0.1337	-0.0193	-0.1054	-0.1078	-0.1061
#PREVOPS	-0.1201	-0.2062	0.9317**	1.0000**	0.0860	-0.1746	-0.1230	-0.1303	-0.2036	-0.2062
SITUATN	-0.1832	-0.3347	0.1170	0.0860	1.0000**	0.3834	-0.0069	0.0526	-0.0060	-0.0101
IMAGINTN	-0.2557	-0.2340	-0.1337	-0.1746	0.3834	1.0000**	0.3681	0.3934	0.3815	0.3115
SPAS1	-0.6042**	-0.3768	-0.0193	-0.1230	-0.0069	0.3681	1.0000**	0.8533**	0.7534**	0.8482**
SPAS2	-0.4383*	-0.2697	-0.1054	-0.1303	0.0526	0.3934	0.8533**	1.0000**	0.8950**	0.8020**
SPAS3	-0.2717	-0.1657	-0.1078	-0.2036	-0.0060	0.3815	0.7534**	0.8950**	1.0000**	0.7748**
SPAS4	-0.5546*	-0.3339	-0.1061	-0.2062	-0.0101	0.3115	0.8482**	0.8020**	0.7748**	1.0000**
TOTLSPAS	-0.5057*	-0.3098	-0.1182	-0.1835	0.0055	0.3911	0.9227**	0.9496**	0.9256**	0.9231**
PCE1	-0.3301	-0.3720	-0.0989	-0.1203	0.1351	0.4297	0.3779	0.3869	0.2966	0.4040
PCE2	0.0548	0.1366	-0.0351	-0.1853	-0.4297	0.0285	0.2925	0.2364	0.2214	0.2403
DAC	-0.0202	0.2077	-0.7436**	-0.8179**	-0.0149	0.2374	-0.0894	-0.1270	-0.0374	0.0738
PRESPAS	-0.5236*	-0.4223	-0.0336	-0.1191	0.0380	0.2498	0.8977**	0.8398**	0.7287**	0.8514**
POSTSPAS	-0.3614	-0.3627	-0.0922	-0.1487	-0.2175	0.1017	0.6598**	0.5962**	0.5533*	0.6138**
LTHSTAY	0.4344	-0.0394	-0.1646	-0.2207	0.2664	0.2665	-0.4245	-0.4145	-0.3155	-0.3737
TINUR	0.0631	-0.0846	-0.1047	-0.1566	0.2705	0.2205	-0.0608	-0.0957	-0.0791	-0.0174
TINRR	-0.1114	-0.2482	0.2380	0.2026	0.2859	0.3866	0.1232	0.0306	0.0388	0.1428
CUP	-0.0942	-0.3339	-0.0212	-0.0514	0.4002	0.2517	-0.0308	-0.0551	-0.0671	-0.0417
PAINRGVN	-0.0616	-0.3622	-0.0232	-0.1034	0.5089*	0.2762	-0.1220	-0.2542	-0.2407	-0.1129

	TOTLSPAS	PCE1	PCE2	DAC	PRESPAS	POSTSPAS	LTHSTAY	TINUR	TINRR	CUP	PAINRGVN
AGE	-0.5057*	-0.3301	0.0548	-0.0202	-0.5236*	-0.3614	0.4344	0.0631	-0.1114	-0.0942	-0.0616
MARITSTS	-0.3098	-0.3720	0.1366	0.2077	-0.4223	-0.3627	-0.0394	-0.0846	-0.2482	-0.3339	-0.3622
#PREVHSP	-0.1182	-0.0989	-0.0351	-0.7436**	-0.0336	-0.0922	-0.1646	-0.1047	0.2380	-0.0212	-0.0232
#PREVOPS	-0.1835	-0.1203	-0.1853	-0.8179**	-0.1191	-0.1487	-0.2207	-0.1566	0.2026	-0.0514	-0.1034
SITUATN	0.0055	0.1351	-0.4297	-0.0149	0.0380	-0.2175	0.2664	0.2761	0.2859	0.4002	0.5089*
IMAGINTN	0.3911	0.4297	0.0285	0.2374	0.2498	0.1017	0.2665	0.2205	0.3866	0.2517	0.2762
SPAS1	0.9227**	0.3779	0.2925	-0.0894	0.8977**	0.6598**	-0.4245	-0.0608	0.1232	-0.0308	-0.1220
SPAS2	0.9496**	0.3869	0.2364	-0.1270	0.8398**	0.5962**	-0.4145	-0.0957	0.0306	-0.0551	-0.2541
SPAS3	0.9256**	0.2966	0.2214	-0.0374	0.7287**	0.5533*	-0.3155	-0.0791	0.0388	-0.0671	-0.2407
SPAS4	0.9231**	0.4040	0.2403	0.0738	0.8514**	0.6138**	-0.3737	-0.0174	0.1428	-0.0417	-0.1129
TOTLSPAS	1.0000**	0.3900	0.2655	0.0401	0.8868**	0.6488**	-0.4050	-0.0680	0.0908	-0.0520	-0.1944
PCE1	0.3900	1.0000**	0.0010	0.1177	0.3389	0.1816	-0.4021	-0.0880	0.0931	-0.3654	-0.3580
PCE2	0.2655	0.0010	1.0000**	-0.0455	0.2673	0.2135	-0.3535	-0.2076	-0.2689	-0.3404	-0.4648
DAC	-0.0401	0.1177	-0.0455	1.0000**	-0.2065	-0.2095	0.2900	0.2069	0.0828	0.1572	0.2848
PRESPAS	0.8868**	0.3389	0.2673	-0.2065	1.0000**	0.7602**	-0.3429	-0.1439	0.0604	-0.0867	-0.1706
POSTSPAS	0.6488**	0.1816	0.2135	-0.2095	0.7602**	1.0000**	-0.2451	-0.0912	-0.0566	0.0437	-0.1763
LTHSTAY	-0.4050	-0.4021	-0.3535	0.2900	-0.3429	-0.2451	1.0000**	0.4678	0.1874	0.4845*	0.5300*
TINUR	-0.0680	-0.0880	-0.2076	0.2069	-0.1439	-0.0912	0.4678	1.0000**	0.4031	0.2372	0.3015
TINRR	0.0908	0.0931	-0.2689	0.0828	0.0604	-0.0566	0.1874	0.4031	1.0000**	0.0608	0.3806
CUP	-0.0520	-0.3654	-0.3404	0.1572	-0.0867	0.0437	0.4845*	0.2372	0.0608	1.0000**	0.7342**
PAINRGVN	-0.1945	-0.3580	-0.4648	0.2848	-0.1706	-0.1763	0.5301*	0.3015	0.3807	0.7343**	1.0000**

* - SIGNIF. LE .01 ** - SIGNIF. LE .001 (99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED)

APPENDIX 8.1

THE USE OF THE SURGICAL PATIENT ANXIETY SCALE (SPAS)

To aid for future use of the SPAS, the results from the total sample used in this study were further analysed. The patients' raw scores are shown in the first section (Section 8.1.1). SPAS results according to sex suggest that female patients experienced higher anxiety than the male patients ($\bar{x}$ female = 355.85 opposed to 320.15 in the male patients).

According to the modes of response which were classified into two groups; physiological and psychological, the results suggest a similar pattern for female and male patients. There was no significant difference between means for physiological and psychological modes of response. This may be interpreted that when a person is confronting a stressor or stressful situation, the psychological defense mechanisms work in close relation with the physiological mechanisms, for instance, when a person recognizes that he is frightened, he expects to manifest some physiological disturbances, e.g. his heart starts pounding, his mouth goes dry and he breaks into a cold sweat. This same consistency was not found between subjective measures of anxiety and objective physiological measures e.g. blood pressure and pulse may be attributable to the fact that the latter were recorded at a different time, i.e. not at the time the subject was responding to the SPAS.

Section 8.1.2 of this appendix shows each SPAS item with respect to mean, variance and other statistical values derived from the total sample used. Section 8.1.3 shows the correlation matrix of the SPAS items.

8.1.1 Patient's Actual Rating on the S.P.A.S. Items (i) The Control Group

Patient's Code	Physio-logical response	Psycho-logical response	Component 1					Component 2					Component 3					Component 4				
			S1	S2	S3	S4	S5	S1	S2	S3	S4	S5	S1	S2	S3	S4	S5	S1	S2	S3	S4	S5
C1	112	135	12	15	10	10	10	10	10	10	10	10	27	10	10	10	10	22	10	10	10	21
C2	131	104	13	15	11	10	14	13	10	10	10	13	13	10	11	10	10	15	10	14	12	11
C3	131	102	12	18	14	10	14	10	14	10	18	10	10	10	10	14	10	13	10	10	10	10
C4	247	261	29	50	41	10	20	10	10	10	10	11	17	34	50	44	10	50	28	10	14	50
C5	205	143	10	29	10	10	10	22	10	10	22	10	10	10	10	30	10	40	22	25	10	38
C6	152	190	23	37	10	10	25	18	10	14	30	10	10	18	10	10	10	30	22	17	10	18
C7	142	161	20	28	10	10	10	10	14	10	10	10	10	14	10	42	10	35	12	14	10	14
C8	229	227	38	42	18	30	10	10	10	14	41	10	30	10	10	10	41	50	10	32	10	30
C9	120	139	10	14	26	14	10	10	14	10	14	14	10	10	14	10	10	17	14	14	14	10
C10	142	125	32	15	10	10	10	26	10	10	10	10	10	10	10	10	10	10	30	10	10	14
C11	100	118	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	18	20	10	10
C12	236	192	36	34	42	15	15	18	10	34	18	14	10	18	30	10	18	26	26	26	14	14
C13	167	160	10	27	10	10	10	10	12	50	10	10	46	42	12	10	10	46	42	12	10	10
C14	335	278	15	45	44	36	12	36	20	10	37	10	10	16	38	30	14	50	50	50	40	50
C15	190	154	20	30	10	10	10	14	10	10	40	10	10	10	10	10	10	50	50	10	10	10
C16	172	200	29	29	22	10	10	10	10	15	42	17	10	10	14	10	14	42	36	14	10	18
C17	199	221	30	48	50	10	10	10	10	10	30	10	10	10	20	10	10	50	30	27	25	10
C18	168	169	26	35	10	10	10	10	10	10	18	10	10	10	46	10	14	10	14	14	10	50
C19	172	203	38	43	25	14	20	10	14	18	30	10	10	10	10	14	10	33	26	10	10	20
C20	201	187	46	42	38	10	10	10	10	10	30	10	10	10	10	10	10	30	10	10	10	38
C21	287	241	31	34	26	10	19	38	19	29	39	29	43	18	35	48	20	10	23	10	10	41
C22	120	100	14	14	14	10	10	10	10	10	14	10	10	10	10	10	10	14	10	10	10	10
C23	176	239	18	10	30	10	42	10	10	10	42	10	42	10	10	11	14	22	22	26	26	50
C24	103	123	16	10	10	14	10	10	10	10	10	10	10	10	10	10	10	22	14	10	10	10
C25	120	140	10	14	10	14	10	14	10	10	14	10	14	10	14	30	14	10	10	14	14	14
C26	125	146	14	10	25	14	10	10	10	10	14	14	42	10	10	10	10	10	14	14	10	10
C27	161	204	35	30	22	18	10	10	18	22	14	26	10	22	22	10	14	30	22	10	10	10
C28	100	112	22	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
C29	170	208	29	10	26	10	15	10	10	10	38	10	18	10	10	35	10	30	24	41	22	10
C30	100	100	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10

(ii) Experimental Group

Patient's Code	Physio-logical response	Psycho-logical response	Component 1					Component 2					Component 3					Component 4				
			S1	S2	S3	S4	S5	S1	S2	S3	S4	S5	S1	S2	S3	S4	S5	S1	S2	S3	S4	S5
E1	179	127	16	27	13	12	10	16	16	16	16	16	16	11	17	15	12	17	12	15	17	16
E2	275	220	20	38	21	36	14	38	10	12	30	29	16	27	40	34	14	39	17	24	19	17
E3	212	196	20	25	32	27	16	17	10	16	28	12	11	10	18	13	23	33	35	24	16	12
E4	200	169	25	32	25	15	13	17	20	20	22	18	13	24	33	29	14	31	29	31	25	33
E5	188	175	24	16	19	16	19	22	11	20	21	18	26	16	18	18	15	14	16	14	14	36
E6	100	100	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
E7	276	359	25	27	33	31	25	24	33	32	42	33	39	43	38	43	38	36	28	26	10	29
E8	103	116	11	10	10	10	10	10	10	10	18	10	14	10	14	10	12	10	10	10	10	10
E9	244	202	19	37	19	13	11	24	15	18	22	19	18	32	34	38	11	42	29	17	18	11
E10	151	184	17	39	10	10	14	10	10	15	13	18	10	10	22	22	14	30	18	10	23	10
E11	285	181	27	29	29	20	33	21	12	13	26	18	32	19	16	24	31	33	26	28	23	26
E12	111	125	14	12	12	13	14	12	11	12	14	11	11	11	14	10	11	11	11	11	10	11
E13	110	109	10	10	10	10	10	11	10	10	10	10	12	11	10	11	10	10	11	13	10	10
E14	144	195	14	29	30	10	16	21	15	18	22	18	14	12	10	15	16	15	16	20	10	18
E15	100	168	10	10	10	10	10	12	11	11	12	10	22	19	18	11	12	12	26	20	10	12
E16	140	139	15	24	12	15	10	10	11	10	22	14	16	15	14	21	11	16	11	10	11	11
E17	294	206	17	29	29	14	23	26	14	21	28	25	24	38	26	33	28	43	20	30	10	32
E18	101	151	10	16	10	10	10	15	12	12	12	12	19	18	15	12	15	14	10	10	10	10
E19	150	151	12	29	11	11	12	14	12	11	14	17	17	16	10	23	10	21	19	10	22	10
E20	146	167	15	18	10	18	15	21	15	13	10	19	10	10	14	11	10	31	24	29	20	20
E21	288	355	27	33	34	31	10	21	38	15	33	32	42	33	42	38	21	47	25	41	33	47
E22	100	100	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
E23	114	124	11	12	10	10	10	10	11	12	10	13	14	14	14	14	14	13	13	10	10	13
E24	141	164	13	31	15	10	17	10	10	11	15	15	13	21	10	10	14	26	23	18	13	10
E25	122	132	15	15	11	10	10	17	10	12	11	16	10	10	10	12	10	20	25	10	10	10
E26	199	235	30	34	38	14	17	30	22	12	10	10	12	17	28	25	15	35	16	29	13	27
E27	181	171	19	23	10	50	10	10	50	10	10	10	10	10	10	10	10	10	10	50	10	10
E28	129	114	11	12	11	10	11	10	10	10	16	11	10	10	11	11	13	20	13	23	10	10
E29	123	115	11	11	11	13	10	12	10	13	14	13	10	10	14	10	10	14	13	10	19	10
E30	100	104	10	10	10	10	10	10	10	10	10	10	14	10	10	10	10	10	10	10	10	10

8.1.2 Details of SPAS Items for the Total Group with respect to Mean Variance and Other Statistical Values

STATISTICAL PACKAGE FOR THE SOCIAL SCIENCES

FILE SPASDATA (CREATION DATE = 07/29/80) SURGICAL PATIENT ANXIETY SCALE DATA
SUBFILE CONT EXPT

VARIABLE C1S1 WAITING FOR THE DOCTOR

MEAN	19.100	STD ERROR	1.163	STD DEV	9.012
VARIANCE	81.210	KURTOSIS	0.131	SKEWNESS	0.946
RANGE	36.000	MINIMUM	10.000	MAXIMUM	46.000
SUM	1146.000				

VALID OBSERVATIONS = 60 MISSING OBSERVATIONS = 0

VARIABLE C1S2 DOCTOR MAKING DECISION FOR OPERATIO

MEAN	23.600	STD ERROR	1.532	STD DEV	11.865
VARIANCE	140.786	KURTOSIS	-1.037	SKEWNESS	0.383
RANGE	40.000	MINIMUM	10.000	MAXIMUM	50.000
SUM	1416.000				

VALID OBSERVATIONS = 60 MISSING OBSERVATIONS = 0

VARIABLE C1S3 FAMILY RESPONSES

MEAN	18.650	STD ERROR	1.415	STD DEV	10.960
VARIANCE	120.130	KURTOSIS	0.174	SKEWNESS	1.103
RANGE	40.000	MINIMUM	10.000	MAXIMUM	50.000
SUM	1119.000				

VALID OBSERVATIONS = 60 MISSING OBSERVATIONS = 0

VARIABLE C1S4 HAVING BLOOD TAKEN

MEAN	14.700	STD ERROR	1.097	STD DEV	8.494
VARIANCE	72.146	KURTOSIS	5.275	SKEWNESS	2.327
RANGE	40.000	MINIMUM	10.000	MAXIMUM	50.000
SUM	882.000				

VALID OBSERVATIONS = 60 MISSING OBSERVATIONS = 0

VARIABLE C1S5 OTHER PATIENTS INTERFERENCE

MEAN	13.433	STD ERROR	0.783	STD DEV	6.066
VARIANCE	36.792	KURTOSIS	0.867	SKEWNESS	2.704
RANGE	32.000	MINIMUM	10.000	MAXIMUM	42.000
SUM	806.000				

VALID OBSERVATIONS = 60 MISSING OBSERVATIONS = 0

VARIABLE C2S1 DREAM ABOUT PAIN

MEAN	15.150	STD ERROR	0.963	STD DEV	7.463
VARIANCE	55.689	KURTOSIS	2.084	SKEWNESS	1.622
RANGE	28.000	MINIMUM	10.000	MAXIMUM	38.000
SUM	909.000				

VALID OBSERVATIONS = 60 MISSING OBSERVATIONS = 0

VARIABLE C2S2 DOCTORS INFORMATION ON PAIN

MEAN	13.233	STD ERROR	0.919	STD DEV	7.115
VARIANCE	50.623	KURTOSIS	14.209	SKEWNESS	3.555
RANGE	40.000	MINIMUM	10.000	MAXIMUM	50.000
SUM	794.000				

VALID OBSERVATIONS = 60 MISSING OBSERVATIONS = 0

VARIABLE C2S3 NURSES INFORMATION ON PAIN

MEAN	13.850	STD ERROR	0.924	STD DEV	7.156
VARIANCE	51.214	KURTOSIS	11.518	SKEWNESS	3.094
RANGE	40.000	MINIMUM	10.000	MAXIMUM	50.000
SUM	831.000				

VALID OBSERVATIONS = 60 MISSING OBSERVATIONS = 0

VARIABLE C2S4 EXPERIENCING PAIN

MEAN	19.600	STD ERROR	1.358	STD DEV	10.521
VARIANCE	110.685	KURTOSIS	-0.457	SKEWNESS	0.919
RANGE	32.000	MINIMUM	10.000	MAXIMUM	42.000
SUM	1176.000				

VALID OBSERVATIONS = 60 MISSING OBSERVATIONS = 0

VARIABLE C2S5 OTHERS EXPERIENCE OF PAIN

MEAN	13.917	STD ERROR	0.766	STD DEV	5.930
VARIANCE	35.162	KURTOSIS	2.756	SKEWNESS	1.820
RANGE	23.000	MINIMUM	10.000	MAXIMUM	33.000
SUM	835.000				

VALID OBSERVATIONS - 60 MISSING OBSERVATIONS - 0

VARIABLE C3S1 THE OLD PATIENT DEATH

MEAN	16.383	STD ERROR	1.317	STD DEV	10.200
VARIANCE	104.037	KURTOSIS	2.034	SKEWNESS	1.780
RANGE	36.000	MINIMUM	10.000	MAXIMUM	46.000
SUM	983.000				

VALID OBSERVATIONS - 50 MISSING OBSERVATIONS - 0

VARIABLE C3S2 DIFFICULTY IN BREATHING

MEAN	15.250	STD ERROR	1.098	STD DEV	8.506
VARIANCE	72.360	KURTOSIS	3.038	SKEWNESS	1.914
RANGE	33.000	MINIMUM	10.000	MAXIMUM	43.000
SUM	915.000				

VALID OBSERVATIONS - 60 MISSING OBSERVATIONS - 0

VARIABLE C3S3 SENSE OF SURVIVAL

MEAN	17.267	STD ERROR	1.383	STD DEV	10.714
VARIANCE	114.741	KURTOSIS	1.410	SKEWNESS	1.577
RANGE	40.000	MINIMUM	10.000	MAXIMUM	50.000
SUM	1036.000				

VALID OBSERVATIONS - 60 MISSING OBSERVATIONS - 0

VARIABLE C3S4 BEING ANAESTHESIZED

MEAN	17.517	STD ERROR	1.428	STD DEV	11.063
VARIANCE	122.390	KURTOSIS	0.488	SKEWNESS	1.338
RANGE	38.000	MINIMUM	10.000	MAXIMUM	48.000
SUM	1051.000				

VALID OBSERVATIONS - 60 MISSING OBSERVATIONS - 0

VARIABLE C3S5 SICKNESS AND DEATH IN HOSPITAL

MEAN	13.783	STD ERROR	0.856	STD DEV	6.633
VARIANCE	44.003	KURTOSIS	7.020	SKEWNESS	2.594
RANGE	31.000	MINIMUM	10.000	MAXIMUM	41.000
SUM	827.000				

VALID OBSERVATIONS - 50 MISSING OBSERVATIONS - 0

VARIABLE C4S1 TISSUE BIOPSY

MEAN	24.483	STD ERROR	1.749	STD DEV	13.545
VARIANCE	183.474	KURTOSIS	-1.023	SKEWNESS	0.540
RANGE	40.000	MINIMUM	10.000	MAXIMUM	50.000
SUM	1469.000				

VALID OBSERVATIONS - 50 MISSING OBSERVATIONS - 0

VARIABLE C4S2 UNKNOWN CAUSE OF SICKNESS

MEAN	19.417	STD ERROR	1.271	STD DEV	9.848
VARIANCE	96.993	KURTOSIS	1.541	SKEWNESS	1.241
RANGE	40.000	MINIMUM	10.000	MAXIMUM	50.000
SUM	1165.000				

VALID OBSERVATIONS - 50 MISSING OBSERVATIONS - 0

VARIABLE C4S3 HAVING NO INFORMATION OF OPERATION

MEAN	17.950	STD ERROR	1.321	STD DEV	10.229
VARIANCE	104.625	KURTOSIS	1.866	SKEWNESS	1.488
RANGE	40.000	MINIMUM	10.000	MAXIMUM	50.000
SUM	1077.000				

VALID OBSERVATIONS - 60 MISSING OBSERVATIONS - 0

VARIABLE C4S4 ANTICIPATING LOSS OF JOB

MEAN	13.783	STD ERROR	0.826	STD DEV	6.399
VARIANCE	40.952	KURTOSIS	4.641	SKEWNESS	2.081
RANGE	30.000	MINIMUM	10.000	MAXIMUM	40.000
SUM	827.000				

VALID OBSERVATIONS - 60 MISSING OBSERVATIONS - 0

VARIABLE C4S5 GENETIC POSSIBILITY

MEAN	18.700	STD ERROR	1.633	STD DEV	12.645
VARIANCE	159.908	KURTOSIS	0.784	SKEWNESS	1.427
RANGE	40.000	MINIMUM	10.000	MAXIMUM	50.000
SUM	1122.000				

VALID OBSERVATIONS - 60 MISSING OBSERVATIONS - 0

8.1.3 Intercorrelations between the SPAS items

- - - - - - - - - - - - - P E A R S O N C O R R E L A T I O N C O E F F I C I E N T S - - - - - - - - - - - - -

	C1S1	C1S2	C1S3	C1S4	C1S5	C2S1	C2S2	C2S3	C2S4	C2S5
C1S1	1.0000**	0.6252**	0.5845**	0.3299*	0.2283	0.1694	0.1641	0.2299	0.5021**	0.2168
C1S2	0.6252**	1.0000**	0.5829**	0.3456*	0.1678	0.2493*	0.2001	0.2687	0.4656**	0.2770
C1S3	0.5845**	0.5829**	1.0000**	0.3502*	0.3804*	0.3591*	0.2219	0.2240	0.5178**	0.2825
C1S4	0.3299*	0.3456*	0.3502*	1.0000**	0.0348	0.3130*	0.6541**	0.0645	0.3357*	0.3118*
C1S5	0.2283	0.1678	0.3804*	0.0348	1.0000**	0.2584	0.0491	0.1819	0.4354**	0.2366
C2S1	0.1694	0.2493*	0.3591*	0.3130*	0.2584	1.0000**	0.2596	0.2588	0.3384*	0.5476**
C2S2	0.1641	0.2001	0.2219	0.6541**	0.0491	0.2596	1.0000**	0.2011	0.1426	0.4243**
C2S3	0.2299	0.2687	0.2240	0.0645	0.1819	0.2588	0.2011	1.0000**	0.1847	0.4307**
C2S4	0.5021**	0.4656**	0.5178**	0.3357*	0.4354**	0.3384*	0.1426	0.1847	1.0000**	0.3488*
C2S5	0.2168	0.2770	0.2825	0.3118*	0.2366	0.5476**	0.4243**	0.4307**	0.3488*	1.0000**
C3S1	0.0920	0.0385	0.2276	0.1309	0.4161**	0.2097	0.2370	0.4840**	0.3606*	0.4357**
C3S2	0.1337	0.3941**	0.3171*	0.2083	0.2656	0.3740*	0.5333*	0.6396**	0.1011	0.6076**
C3S3	0.3366*	0.5039**	0.5244**	0.2966	0.1560	0.5130**	0.3321*	0.2066	0.2085	0.5447**
C3S4	0.2018	0.4150**	0.3610*	0.1907	0.2497	0.5517**	0.3296*	0.1994	0.3385*	0.5401**
C3S5	0.3162*	0.2625	0.3260*	0.3779*	0.3781*	0.2982	0.2421	0.3399*	0.4813**	0.4757**
C4S1	0.4399**	0.7415**	0.5371**	0.2996	0.1841	0.2587	0.1318	0.2723	0.5461**	0.2461
C4S2	0.2621	0.4599**	0.4134**	0.1007	0.1936	0.3462*	0.0806	0.3895*	0.4035**	0.1718
C4S3	0.2060	0.2846	0.4096**	0.6235**	0.2271	0.3654*	0.5843**	0.0434	0.4151**	0.1827
C4S4	0.0974	0.3305*	0.4615**	0.3078*	0.2396	0.3187*	0.2230	-0.0485	0.3474*	0.2394
C4S5	0.4164**	0.4801**	0.5031**	0.2867	0.4408**	0.4046**	0.2333	0.0933	0.4791**	0.2510

* - SIGNIF. LE .01 ** - SIGNIF. LE .001 (99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED)

	C3S1	C3S2	C3S3	C3S4	C3S5	C4S1	C4S2	C4S3	C4S4	C4S5
C1S1	0.0920	0.1337	0.3366*	0.2018	0.3162*	0.4399**	0.2621	0.2060	0.0974	0.4164**
C1S2	0.0385	0.3941**	0.5039**	0.4150**	0.2625	0.7415**	0.4599**	0.2846	0.3305*	0.4801**
C1S3	0.2276	0.3171*	0.5244**	0.3610*	0.3260*	0.5371**	0.4134**	0.4096**	0.4615**	0.5031**
C1S4	0.1309	0.2083	0.2966	0.1907	0.3779*	0.2996	0.1007	0.6235**	0.3078*	0.2867
C1S5	0.4161**	0.2656	0.1560	0.2497	0.3781*	0.1841	0.1936	0.2271	0.2396	0.4408**
C2S1	0.2097	0.3740*	0.5130**	0.5517**	0.2982	0.2587	0.3462*	0.3654*	0.3187*	0.4046**
C2S2	0.2370	0.5333*	0.3321*	0.3296*	0.2421	0.1318	0.0806	0.5843**	0.2230	0.2333
C2S3	0.4840**	0.6396**	0.2066	0.1994	0.3399*	0.2723	0.3895*	0.0434	-0.0485	0.0933
C2S4	0.3606*	0.1011	0.2085	0.3385*	0.4813**	0.5461**	0.4035**	0.4151**	0.3474*	0.4791**
C2S5	0.4357**	0.6076**	0.5447**	0.5401**	0.4757**	0.2461	0.1718	0.1827	0.2394	0.2510
C3S1	1.0000**	0.3158**	0.2266	0.3378*	0.4654**	0.1737	0.1609	0.1714	0.1587	0.3855*
C3S2	0.5158**	1.0000**	0.6146**	0.5703**	0.3891*	0.4083**	0.3722*	0.2031	0.1573	0.2977
C3S3	0.2266	0.6146**	1.0000**	0.6284**	0.3088*	0.3988**	0.3341*	0.3058*	0.4091**	0.6063**
C3S4	0.3378*	0.5703**	0.6284**	1.0000**	0.3006*	0.4117**	0.2288	0.3043*	0.3447*	0.4679**
C3S5	0.4654**	0.3891*	0.3088*	0.3006*	1.0000**	0.3156*	0.1034	0.3523*	0.0779	0.3346*
C4S1	0.1737	0.4083**	0.3988**	0.4117**	0.3156*	1.0000**	0.6659**	0.4324**	0.4205**	0.3768*
C4S2	0.1609	0.3722*	0.3341*	0.2288	0.1034	0.6659**	1.0000**	0.3197*	0.4175**	0.2488
C4S3	0.1714	0.2031	0.3058*	0.3043*	0.3523*	0.4324**	0.3197*	1.0000**	0.5780**	0.3723*
C4S4	0.1587	0.1573	0.4091**	0.3447*	0.0779	0.4205**	0.4175**	0.5780**	1.0000**	0.3862*
C4S5	0.3855*	0.2977	0.6063**	0.4679**	0.3346*	0.3768*	0.2488	0.3723*	0.3862*	1.0000**

* - SIGNIF. LE .01 ** - SIGNIF. LE .001 (99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED)

ABBREVIATIONS USED

C1S1 = Waiting for the doctor

C1S2 = Doctor making decision for operation

C1S3 = Family responses

C1S4 = Having blood taken

C1S5 = Other patients interference

C2S1 = Dream about pain

C2S2 = Doctors information on pain

C2S3 = Nurses information on pain

C2S4 = Experienceing pain

C2S5 = Others experience of pain

C3S1 = The old patient death

C3S2 = Difficulty in breathing

C3S3 = Sense of survival

C3S4 = Being anaesthesized

C3S5 = Sickness and Death in hospital

C4S1 = Tissue biopsy

C4S2 = Unknown cause of sickness

C4S3 = Having no information of operation

C4S4 = Anticipating loss of job

C4S5 = Genetic possibility C1S1, C1S2 to C4S5

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ADDENDUM

1. Pages 129 and Page 130: Chi-square tests are inappropriate. A t-test for independent groups is appropriate. In each case the dependent variable is the percentage of patient-nurse interaction. The data were reanalysed as follows:

   1.1. The t-test was applied to the mean percentage of patient-nurse interaction between (8) homogenous and (4) heterogenous groups. The result yielded that there was no significant difference between means of the two groups (x=87.82 and 87.88 respectively).

   1.2. Page 130, again the t-test was applied to the mean percentage of patient-nurse interaction between male and female homogenous groups. The result was there was no significant difference between means of the two groups. (t=0.3359 whereas at 5% level, df 6, t expected=2.447). This result was contrary to the previous analysis.

2. Page 157 Table 7.2.3: Chi-square is not appropriate for these data. An appropriate procedure is t-test for independent groups. In this case each patient was given a combined + and - score summing over all hospital days. It was found that there was no significant difference of mean deviation either in systolic blood pressure level or pulse rate between the control and experimental group patients. This finding was contrary to the previous analysis (t=0.2734 and 0.7888 whereas at 5% level, df=58, t expected=2.01).

3. Pages 171, 173 and 176: Using degrees of freedom at 58, t-test for two independent groups was applied to the data on vomiting, sleep pattern, and postoperative complications. It was found there was no significant difference between means of the two groups (t=0.909, 1.764 and 1.529 respectively).

4. Pages 188 and 189: The absence of dfs in the subscore analysis and the value of x in Table 7.16 suggests that average score were not used for these analyses and that instead each group was treated as if it contained approximately 60 individuals instead of 30 with two scores per person.

In view of the above problems, the data were analysed again using the average score for each category of the PCE. The findings were similar to the previous analysis i.e., there was no significant difference between the average score under each category of the PCE even though it appeared as though the experimental group patients had better scores on the communication aspect than did the control group patients.

Thus the reader should note that conclusions from the initial analyses which appear on pages 129, 130, 157, 171, 173, 176 and especially on pages 211 and 212 may be invalid.

E. Eopapong - Thongkrajai

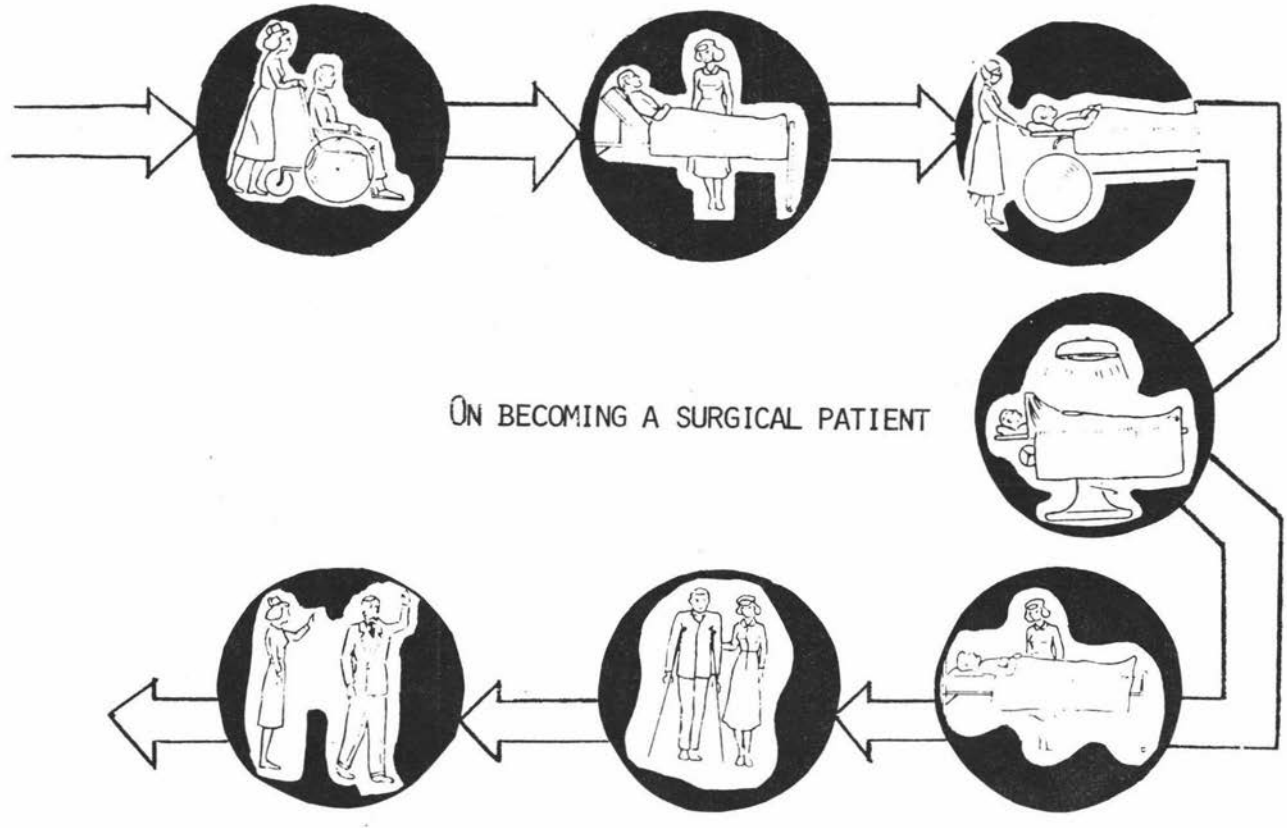
PREPARATION FOR SURGERY

A BOOKLET OF INFORMATION
FOR GENERAL SURGICAL PATIENTS

Nursing Studies Unit
Massey University
Palmerston North

INDEX

This booklet contains relevant information on becoming a surgical patient in a general hospital. It is recommended to be used in association with the patient-teaching programme specially prepared in the hospital. The whole programme is organised under the co-ordination and supervision of the operating theatre staffs and surgical ward staffs of Palmerston North Public Hospital.


ON BECOMING A SURGICAL PATIENT

GENERAL INFORMATION IN PREPARATION FOR SURGERY

INTRODUCTION

Having surgery can be a difficult experience for the person not well prepared for it. Since undergoing surgery involves many unusual happenings not part of the everyday routine of living, it is important to know what to expect in order to be ready, physically and psychologically, for this particular event of life. The type of surgery may differ from one person to another depending on the part of the body involved, but any surgical procedure affects all body systems in some way. For example, with a person undergoing abdominal surgery, this does not mean that only the organs in the abdomen are affected. There are effects also on breathing, the work the heart does, the ability to move about, and on general emotional state.

When people undergoing surgery share their feelings, fear of uncertainty, fear of the unknown and fear of loss have been found to be common worries. These kinds of fear can hinder recovery. If a person is uncertain about his condition and his treatment and plans for future care, as well as being in an unfamiliar environment, he is likely to have a negative attitude toward his total care. Such an attitude will have an impact on his physical recovery and wellbeing. Consequently, we believe that providing adequate information is an important aspect of providing good care.

GENERAL POLICY OF THE HOSPITAL

In countries where health is accepted as a basic human right, the general policy of any institutional health care service becomes one of giving appropriate and sufficient care to the people according to their health needs and problems. Palmerston North Public Hospital is a regional hospital in which it provides services to approximately 90,000 people in the Manawatu region. It is a 600 bed general hospital, including eight surgical wards (some general surgical and others for specialties). As well as providing health services, the hospital serves as a teaching hospital to the medical, nursing and other paramedical science students, e.g. physiotherapy, pharmacy, etc.

The hospital recognises that the individual has some responsibility for his own health and that a patient has the right to know what is going on in terms of establishing and organising his treatment and plan of care. Therefore, one of the most important aspects of health care service is sharing health related information. The organisation and presentation of such information is planned to enrich the patient's knowledge and understanding of his illness, treatment and care, thereby increasing his confidence to cope with the associated stress.

ON BECOMING A PATIENT

The decision to perform a surgical procedure is made when this is the best way to relieve, reduce or avoid pain, suffering and abnormalities which interfere with a person's health. Fortunately, much of the risk and suffering associated with surgery

in the past has now been overcome. The method of eliminating micro-organisms which cause wound infection (asepsis) was developed in the nineteenth century along with the method of anaesthesia. Both are the corner-stones of effective surgery.

Although surgery is never without some risk, a person can be prepared and supported for this potentially stressful event in ways that help him to withstand the undesirable effects. The pre-operative period is a very important period when supportive care can be taken with greater assurance of an uneventful recovery.

PHYSICAL SETTING

The typical type of ward usually consists of about 30 beds. It is separated mainly into several four bed units, and are also some single rooms to which patients who need special and intensive care may be allocated. During the pre-operative period, you are likely to share a four bed unit. After surgery, usually you will be returned to the same bed, or perhaps transferred to a single room where you can rest quietly and peacefully with less disturbance.

Necessary facilities have been provided for patient's comfort and ease while staying in the hospital, for instance, you will have your own bedside table and chair. Other facilities are provided such as earphones to listen to the radio or music on line, and electric bell to ring for the staff.

The general trend nowadays is to reduce the period when a surgical patient is bedfast so you can expect to be independent of bed pans and the like within a day or so.

The hospital is centrally heated, so that the temperature does not change much between daytime and night time.

THE IMPORTANCE OF ANAESTHESIA

A surgical operation is always associated with some form of anaesthesia, either local or general. General anaesthesia means the sensation of the whole body is suspended whereas local anaesthesia stops the sensation in only part of the body.

It is common practice that you will be given premedication about an hour before the scheduled operation time. Therefore, you are likely to experience the feeling of drowsiness before coming to the operating room. Because of this premedication, a smaller amount of anaesthetic agent is needed.
Briefly, the stage of general anaesthesia that you are going to experience are:

Stage 1: Anaesthesia is usually commenced with an injection given into a vein in the arm. This is called induction, and is followed by you breathing in an anaesthetic vapour through a mask (this vapour is the controlling agent throughout the period of anaesthesia). During this first stage you are likely to have a sensation of warmth over the body and feel dizzy and detached from the world as you pass into a semi-conscious stage.

Stage 2: This is a transitional period before you lose consciousness altogether. It is a brief period during which you are still conscious but unable to move any part of the body.
Stage 3: is the stage at which the operation begins. You will feel nothing and be completely unconscious.

During the period of operation, the anaesthetist will control the amount of anaesthetic agent accurately in relation to your stage of anaesthesia, by observing indicators such as size and reaction to light of the eye pupil, rate and depth of breathing, blood pressure and pulse. You will be closely observed throughout the whole period.

PHYSICAL PREPARATION

The aim is to get the patient into the best state for surgery with skin clean and healthy, bladder and bowel empty, and generally well nourished, rested and relaxed, and free from infection.

(a) Diet and Smoking: There is a dietitian available to advise on difficulties and special requirements. Otherwise, after admission you will have ordinary meals from the hospital kitchen and be encouraged to drink freely (6-8 glasses per 24 hours). Sometime before a general anaesthetic, all intake of food and fluid by mouth is stopped in order to avoid the risk of choking or getting food particles into the air passages should a person vomit while still unconscious. Thus, you will probably see a sign "Nil by Mouth" appear over your bed and be told by the nurse not to eat or drink anything from about 4-6 hours before

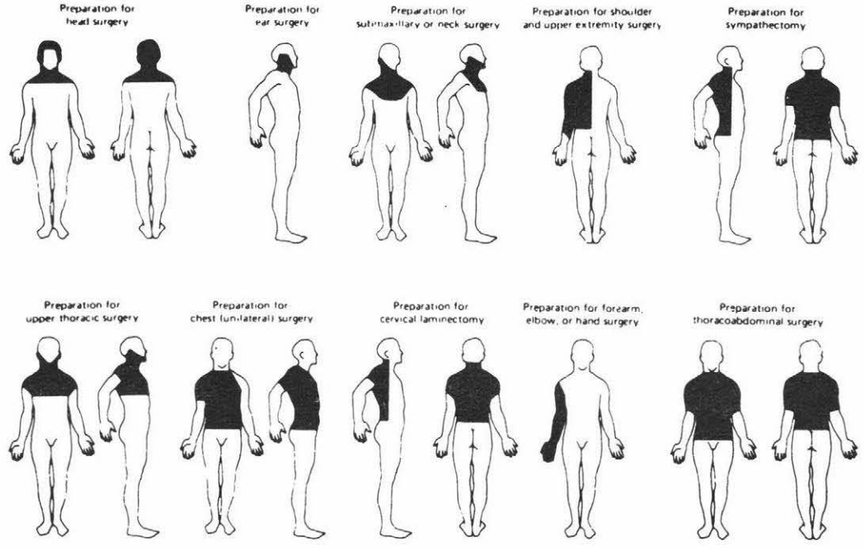
the scheduled operation time. Smoking should be stopped at least 4 hours prior to surgery to prevent lung irritation.

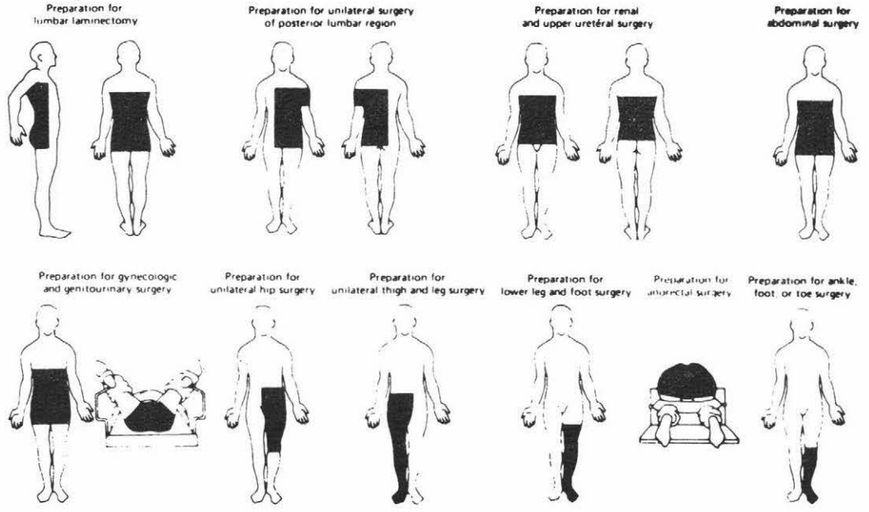
(b) Hygiene and skin preparation: The aim of the special preparative skin care is to make the skin as free as possible of germs without damaging it. In general, the skin will be shaved and cleaned for about 8-12 inches all around the site of the incision. Some examples shown in page 9.

On the night or morning before the operation, you will be asked to shower and shampoo with a special antiseptic solution (Phisohex) which is used like soap. This prevents bacterial growth on the skin. Nails should be clean and any tinted nail polish removed as colour of the finger nails is one of the indicators used to assess the amount of oxygen circulating in the blood stream during durgery and anaesthesia.

As well as regular teeth brushing you may be encouraged to use a mild antiseptic mouthwash. False teeth are usually removed just before going to operating theatre, as are contact lenses.

(c) Bowel and bladder: If you have not been having regular daily bowel motions, an enema may be required on the evening before operation. The bladder also should be emptied just before going to the theatre. There are two reasons for these procedures. One is to avoid involuntary emptying of bowel and bladder while under anaesthetic and the other, in the case of abdominal surgery, is to make organs easier to handle during the operation. There is also a risk that distended intestines or bladder could be





AREAS FOR SKIN PREPARATION

accidentally punctured.

(d) Rest and sleep: A good sleep on the night before operation is important. Usually the surgeon orders sleeping pills in case you cannot go to sleep. If you have any pain, or feeling of discomfort, tell the nurse immediately and also discuss any doubts or worries that you are experiencing, as these prevent you from getting to sleep.

ON LEAVING THE WARD

On the morning of the operation your temperature, pulse and respiration rate will be checked and recorded as usual. A blood pressure reading will probably be taken also. Any symptoms such as a sore throat or cold should be noted and reported to the nursing staff at once as the anaesthetist will have to check that they are not sufficient to make the anaesthetic a risk. At this stage you will have been told the scheduled time of your operation.

About an hour before the operation, you will be asked to put on a special hospital gown. Hair should be combed and arranged in comfortable style will all pins, combs and clips removed (including wigs and hairpieces). Also nail polish and facial make-up are not worn because they can mask skin colour which normally is used during the anaesthesia to indicate adequacy of the oxygen supply in the blood.

The description on the last section of the booklet under the heading "Operative Day" can be helpful in giving you an overall picture of the process.

IN THE OPERATING THEATRE

About half an hour before the actual time of surgery, you will be transferred to the operating thestre accompanied by the nurse. You will be wheeled to the anaesthetic room first where the anaesthetist will probably make a final check on your overall condition and physical fitness for anaesthesia. You might be anaesthetised in the room and transferred to the operating room before the anaesthetic is commenced. The anaesthetist will make this decision in consideration to your condition, type of surgery and other factors. Intravenous injection is one method of starting general anaesthesia. Sometimes if it has not been done already from the ward, it may be decided to start an intravenous drip through a needle into one of your veins in the anaesthetic room.

On the operating table, you will be placed in a comfortable and suitable position which gives good exposure of the operative area for the type of surgery which you are undergoing. The actual operative procedures begin only after you are already unconscious. The total time will vary according to the type of operation. Further details will be shown in the slides associated with this booklet.

RECOVERY ROOM

The purpose of the recovery room is to provide an area where post-anaesthetic patients can be continuously observed and given the skilled care that prevents immediate post-operative complications. From the operating table, you will be placed on a stretcher. This is much narrower than an ordinary hospital bed

so the nurse will put the side rails up along the stretcher for your safety, and sometimes a safety belt is applied to protect and prevent you from physical injury such as falling if you are restless.

During this period, some people can be very restless, although they will probably feel very sleepy still. The recovery room nurse will assist you to be as comfortable as possible.

In the recovery room there are likely to be many activities going on. You may hear the sound of machines most of the time, as the room is well equipped with things to check the normal rate of recovery of each patient as well as to deal with emergencies, e.g. pulse and blood pressure monitors, suction machine and mechanical resuscitators, etc. The recovery room nurse will observe and record your general condition and progress of recovery. Blood pressure, pulse and respiration rate will be taken regularly until you are fully awake.

Recovery from anaesthesia may take 30 minutes to 5 hours. After which time you will be transferred back to the ward.

PAIN AND COMPLICATION OF SURGERY

Simply, pain is "what you feel when it hurts". Post-operative pain occurs from many factors. The main cause is due to tissue injury or trauma. The other causes are thought to be muscle spasm and insufficient blook supply to the tissue of the organ. The greatest need for pain relief is between 12-36 hours post-operatively. After 48 hours the presence of severe pain could indicate complications. The pain that you are likely to experience is at the incision site. It can be a stabbing, burning, shooting or flashing type of pain.

Other than this, there is pain such as gas pains (colic) and aching of the body. Most of the pain can be relieved or minimized. Some types of pain can be controlled to a greater extent by means of your participation. For example, exercise and ambulation help minimise gas pains and improve bowel activities, so allowing you to get back to eating a regular diet sooner than you might anticipate.

Post-operative complications affecting lungs, intestines, heart and blood vessels can all be prevented by means of post-operative exercises as described in the following pages.

POST-OPERATIVE EXERCISE AND EARLY AMBULATION

Return to full ambulation is gradual, but almost all types of surgical patients are encouraged to be out of bed within 24-48 hours after the operation. Even before you are able to walk, in fact, as soon as you are fully awake, there are certain bed exercises which you should do regularly (hourly when awake). It is a good idea to practice the exercises pre-operatively. Instructions are given below. The nurse will help you with the exercises until you are able to do them for yourself.

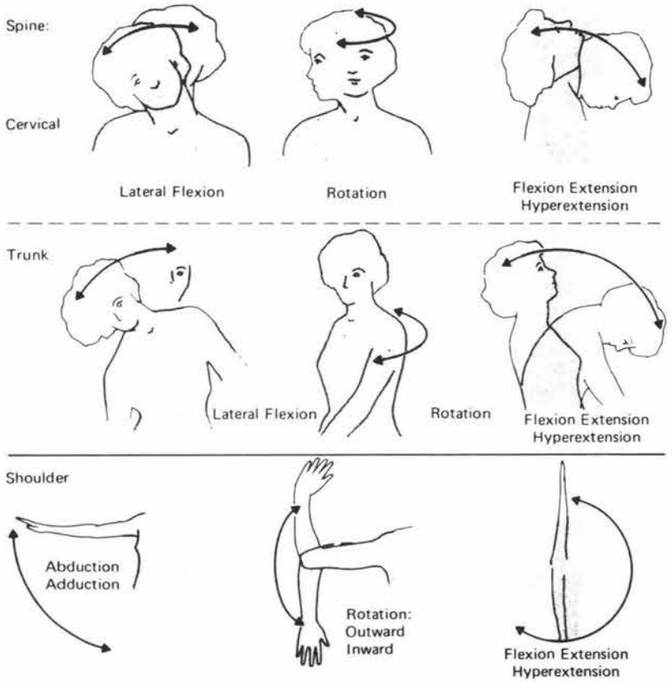
TYPES

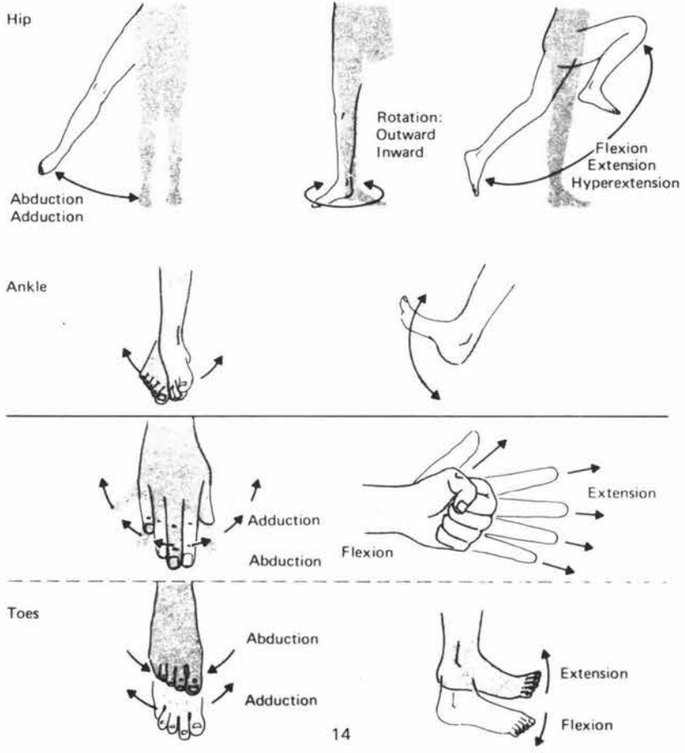
(1) a. Deep breathing exercise -

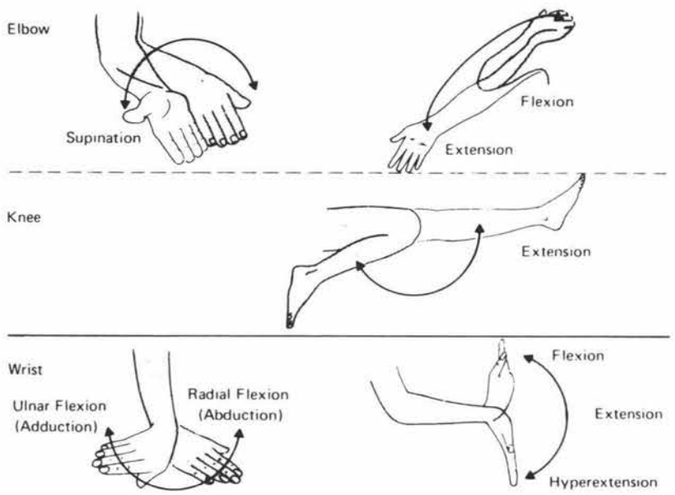
take a deep breath, hold your breath for a very brief interval and breathe out completely by using a blowing motion as if you were about to blow out candles.
Repeat this 10 times.

b. Coughing exercise -

take a deep breath, hold it and then slowly breathe it out all the way. On the next breath hold it and cough from the chest.







RANGE OF MOTION EXERCISE

Repeat this 5 times. While doing this, support your incision site with your hands as well.

(2) Arm exercise through range of motion with specific attention to movement of shoulder joint.
- see diagram
- this is also to be done hourly or two hourly

(3) Hand and finger exercise to maintain good circulation and muscle tone
- see diagram
- this should also be done hourly or two hourly

(4) Ankle and toe exercise to aid in maintenance of good circulation
- see diagram
- this should be done hourly or two hourly

(5) Contraction of the abdominal and buttock muscle to help maintenance of circulation and improve bowel activities
- Contract and relax the muscle of your abdomen and buttocks alternately while lying flat on bed, each for 10 times. This should be done hourly or two hourly.

The advantages of these exercises and of early ambulation are that they reduce the likelihood of post-operative complications as well as they help to reduce pain, speed up the return of normal bladder and bowel functioning (and hence resumption of a normal diet). Normal intestinal functioning is indicated by the return of peristalsis, which means that bowel movement can be heart and felt, and there is passage of gas (flatus).

CARE OF WOUND

The most important requirement for the successful care of wound is to make sure that the site is free of germs (asepsis) beforehand. Bacteria are excluded from wound during the period of operation by maintaining sterility in the operating room. Organisms that enter the wound usually are destroyed by the natural power of resistance of the body.

Surgical wounds in that they are made under germ free (Aseptic) conditions and usually are closed by sutures after all bleeding points have been tied carefully.

In healthy tissue, a wound heals usually in 5-7 days. In the successful closing of the wound, the sutures will start to seal up by 24 hours. This is the reason that the dressing applied initially can usually be removed after 24 hours, except in the oozing wound. The dressing has several purposes i.e. to absorb drainage, the splint and immobolise the wound, to protect from mechanical injury such as rubbing of bed clothes.

Through the healing process, you should be careful not to contaminate the wound by scratching, pulling or playing with the suture thread. Spray dressing is normally used to seal the wound after gauze dressing has been removed. It contains antibiotics and substances that act like a thin film covering the wound site. Whatever type of dressing is applied, careful observation and strict aseptic technique are to be maintained. Report to the nursing staff if you have pain and ask them if there is anything about the wound which worries you, e.g. localised swelling and redness of the skin around the wound, or unusual discharge which could

indicate infection.

ANTICIPATING TIME OF DISHCARGE

Most patients will be almost at their "normal" capacity for daily living at the time of discharge from the hospital, although some further convalescence is usually required. The average length of stay is from one to two weeks, but in many cases is shorter than this. An appointment for follow-up examination (usually 4-6 weeks after discharge) should be made for you. Some patients might return earlier within a week - for removal of sutures, or this may be done by the district nurse in the patient's home.

If the wound requires dressing or there are tubes to be cared for, then discuss the matter with the charge nurse and arrangement can usually be made for regular visiting by a district nurse.

The length of stay in hospital might be longer in cases where body function has changed permanently, e.g. patient with an amputation, or an ostomy (artificial opening) for feeding and elimination purposes. For this person self care can be practised during the period in hospital until he can manage on his own or with some assistance. Continuity of care at home should follow on after discharge.

BACK TO THE ACTIVITIES OF LIFE

After being discharged from the hospital, you may need a "resting period" before going back to work. Two weeks is common for most surgical patients. You should be able to manage most activities of daily living such as personal hygiene care, getting meals, etc., but heavy duties are still restricted, as those can cause mechanical injury to the body, especially the organ that has just

been operated on. In any case, at first, you may not have the energy for heavy tasks. There is often a visiting nurse who works in close co-ordination with the hospital and who is available to help you plan your care and advise on matters such as when to return to work, etc.

SELF CARE

Self care means becoming increasingly independent and responsible for your own care. When you experience a problem and overcome it yourself, this is the best kind of learning experience, and it is worth sharing with people with similar problems.

Thus, self care is knowing how to take good care of yourself after being discharged from the hospital. In resuming your usual activities, the important thing is not to rush into every activity you usually do, but to proceed little by little.

Keeping a check on yourself is necessary/ Clues for observation and a guideline care are as follows:

Nutrition: (except in the cases that have some restrictions)

- eat well balanced diet with plenty of Protein (meat and cheese) and carbohydrates, e.g. rice, potatoes, and bread, provide energy. Vitamin C found in fresh fruit and vegetables such as tamarillos, tomatoes, carrots, prune and orange juice helps the healing process.

- the total intake of fluids should be about 2500-3000 millilitres (8-10 glasses) daily unless contra indicated by kidney or heart disorders.

Elimination:

- avoid constipation: check for bowel motion every three days until becoming daily or on a normal habit.
- avoid gas producing food, e.g. bananas, cabbage and beans.

- avoid over-distention of bladder and bowel. If you are unable to pass urine or have difficulties in passing it, the district nurse or your general practitioner should be informed immediately. Constipation can be relieved by mild laxatives obtained from the chemist. It is prevented by careful attention to ensure a diet containing plenty of roughage, e.g. wholemeal bread, porridge made with coarse oatmeal, fresh green vegetables, etc. and drinking plenty of water.

Clothing:

- wear comfortable and easy care clothes, avoiding, for instance, constrictive clothing below level of lesion, e.g. tight garter or belt.

Rest and Sleep:

Although individual sleep requirements vary, in general the average is for at least eight hours of sleep.
An hour sleep or rest in the afternoon might be beneficial for the healing process.

Exercise:

Special exercise, e.g. range of motion exercise which aims to improve muscular and joint activities may be necessary for anyone who has difficulties in walking. The point to keep in mind is to exercise up to tolerance level, but to avoid fatigue.

SELF OBSERVATION FOR LATER COMPLICATION

At the time of discharge, ask the doctor or the charge nurse if there are any things for which you should watch out.
Report to the district nurse or doctor any continued pain or redness around the wound, or anything else which is unusual or is causing you

discomfort such as trouble in passing urine.

SUMMARY OF THE PROCESS
"HAVING AN OPERATION"

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(The day before surgery)

Admission to hospital
Admission procedure at admission office
Arriving at word
Being introduced to the ward environment
Visited and examined by surgeon
Information of operative procedures given
Instruction of post-operative exercise and what to expect after operation being given
Physical preparation performed
Resting period in the night before surgery

OPERATIVE DAY
(The day of surgery)

Being checked for physical preparation
Changing into special surgical gown
Premedication for anaesthesia given an hour before surgery
Being transferred to operating theatre
Check by the anaesthetist for physical fitness for anaesthesia
Operative procedures begin

POST-OPERATIVE PERIOD
(24-48 hours after surgery)

Operative procedures performed and skin closed
Being transferred to recovery room

Being assessed and observed for general condition
Period of recovery from anaesthesia
Fully recovered from anaesthesia
Transferred to the ward
Continuing of observation, e.g. pain is expected
Post-operative exercises performed 1-2 hourly.

CONVALESCENT PERIOD
(Subsequent time)

Start mobility (e.g. up in chair and walking)
Pain should be ceased
Wound starts to heal up
Own hygiene and personal care
Continues bed exercise if still bed fast
Resuming normal habits, e.g. foods, fluids and elimination

DISCHARGE
(Approximately 7-10 post-operative days)

No difficulties for home or family managing
No complications
Usual habits resumed
Wound at healthy state of healing
Fully mobilised or almost independently mobile

REHABILITATIVE PERIOD
(Home care)

Heavy duties are still restricted
Resting period before getting back to work
Continues regular visits for follow-up examination
Self care and self observation maintained

COMMON TERMS USED IN SURGICAL WARD

Ambulation -	Walking
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Analgesia -	Reduced sensibility to pain. Analgesic drugs are such as Disprin, Panadol and Pethidine.
Asepsis -	Germ free, the state of being free from disease producing or harmful micro-organisms.
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Vital signs -	Reflect bodily functions that are to maintain life, e.g. blood pressure, pulse and respiration.

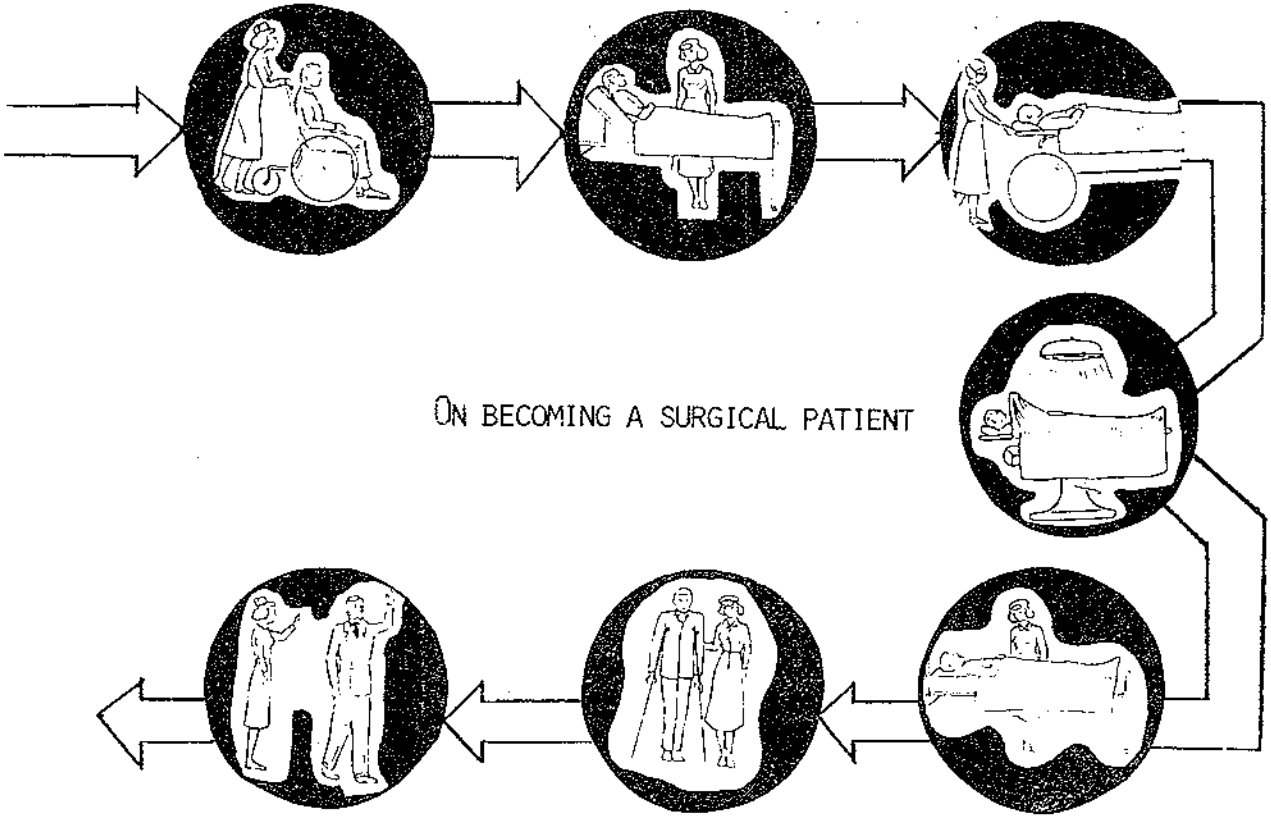
PREPARATION FOR SURGERY

A BOOKLET OF INFORMATION
FOR GENERAL SURGICAL PATIENTS

Nursing Studies Unit
Massey University
Palmerston North

INDEX

This booklet contains relevant information on becoming a surgical patient in a general hospital. It is recommended to be used in association with the patient-teaching programme specially prepared in the hospital. The whole programme is organised under the co-ordination and supervision of the operating theatre staffs and surgical ward staffs of Palmerston North Public Hospital.


ON BECOMING A SURGICAL PATIENT

GENERAL INFORMATION IN PREPARATION FOR SURGERY

INTRODUCTION

Having surgery can be a difficult experience for the person not well prepared for it. Since undergoing surgery involves many unusual happenings not part of the everyday routine of living, it is important to know what to expect in order to be ready, physically and psychologically, for this particular event of life. The type of surgery may differ from one person to another depending on the part of the body involved, but any surgical procedure affects all body systems in some way. For example, with a person undergoing abdominal surgery, this does not mean that only the organs in the abdomen are affected. There are effects also on breathing, the work the heart does, the ability to move about, and on general emotional state.

When people undergoing surgery share their feelings, fear of uncertainty, fear of the unknown and fear of loss have been found to be common worries. These kinds of fear can hinder recovery. If a person is uncertain about his condition and his treatment and plans for future care, as well as being in an unfamiliar environment, he is likely to have a negative attitude toward his total care. Such an attitude will have an impact on his physical recovery and wellbeing. Consequently, we believe that providing adequate information is an important aspect of providing good care.

GENERAL POLICY OF THE HOSPITAL

In countries where health is accepted as a basic human right, the general policy of any institutional health care service becomes one of giving appropriate and sufficient care to the people according to their health needs and problems. Palmerston North Public Hospital is a regional hospital in which it provides services to approximately 90,000 people in the Manawatu region. It is a 600 bed general hospital, including eight surgical wards (some general surgical and others for specialties). As well as providing health services, the hospital serves as a teaching hospital to the medical, nursing and other paramedical science students, e.g. physiotherapy, pharmacy, etc.

The hospital recognises that the individual has some responsibility for his own health and that a patient has the right to know what is going on in terms of establishing and organising his treatment and plan of care. Therefore, one of the most important aspects of health care service is sharing health related information. The organisation and presentation of such information is planned to enrich the patient's knowledge and understanding of his illness, treatment and care, thereby increasing his confidence to cope with the associated stress.

ON BECOMING A PATIENT

The decision to perform a surgical procedure is made when this is the best way to relieve, reduce or avoid pain, suffering and abnormalities which interfere with a person's health. Fortunately, much of the risk and suffering associated with surgery

in the past has now been overcome. The method of eliminating micro-organisms which cause wound infection (asepsis) was developed in the nineteenth century along with the method of anaesthesia. Both are the cornerstones of effective surgery.

Although surgery is never without some risk, a person can be prepared and supported for this potentially stressful event in ways that help him to withstand the undesirable effects. The pre-operative period is a very important period when supportive care can be taken with greater assurance of an uneventful recovery.

PHYSICAL SETTING

The typical type of ward usually consists of about 30 beds. It is separated mainly into several four bed units, and are also some single rooms to which patients who need special and intensive care may be allocated. During the pre-operative period, you are likely to share a four bed unit. After surgery, usually you will be returned to the same bed, or perhaps transferred to a single room where you can rest quietly and peacefully with less disturbance.

Necessary facilities have been provided for patient's comfort and ease while staying in the hospital, for instance, you will have your own bedside table and chair. Other facilities are provided such as earphones to listen to the radio or music on line, and electric bell to ring for the staff.

The general trend nowadays is to reduce the period when a surgical patient is bedfast so you can expect to be independent of bed pans and the like within a day or so.

The hospital is centrally heated, so that the temperature does not change much between daytime and night time.

THE IMPORTANCE OF ANAESTHESIA

A surgical operation is always associated with some form of anaesthesia, either local or general. General anaesthesia means the sensation of the whole body is suspended whereas local anaesthesia stops the sensation in only part of the body.

It is common practice that you will be given premedication about an hour before the scheduled operation time. Therefore, you are likely to experience the feeling of drowsiness before coming to the operating room. Because of this premedication, a smaller amount of anaesthetic agent is needed.
Briefly, the stage of general anaesthesia that you are going to experience are:

Stage 1: Anaesthesia is usually commenced with an injection given into a vein in the arm. This is called induction, and is followed by you breathing in an anaesthetic vapour through a mask (this vapour is the controlling agent throughout the period of anaesthesia). During this first stage you are likely to have a sensation of warmth over the body and feel dizzy and detached from the world as you pass into a semi-conscious stage.

Stage 2: This is a transitional period before you lose consciousness altogether. It is a brief period during which you are still conscious but unable to move any part of the body.
Stage 3: is the stage at which the operation begins. You will feel nothing and be completely unconscious.

During the period of operation, the anaesthetist will control the amount of anaesthetic agent accurately in relation to your stage of anaesthesia, by observing indicators such as size and reaction to light of the eye pupil, rate and depth of breathing, blood pressure and pulse. You will be closely observed throughout the whole period.

PHYSICAL PREPARATION

The aim is to get the patient into the best state for surgery with skin clean and healthy, bladder and bowel empty, and generally well nourished, rested and relaxed, and free from infection.

(a) Diet and Smoking: There is a dietitian available to advise on difficulties and special requirements. Otherwise, after admission you will have ordinary meals from the hospital kitchen and be encouraged to drink freely (6-8 glasses per 24 hours). Sometime before a general anaesthetic, all intake of food and fluid by mouth is stopped in order to avoid the risk of choking or getting food particles into the air passages should a person vomit while still unconscious. Thus, you will probably see a sign "Nil by Mouth" appear over your bed and be told by the nurse not to eat or drink anything from about 4-6 hours before

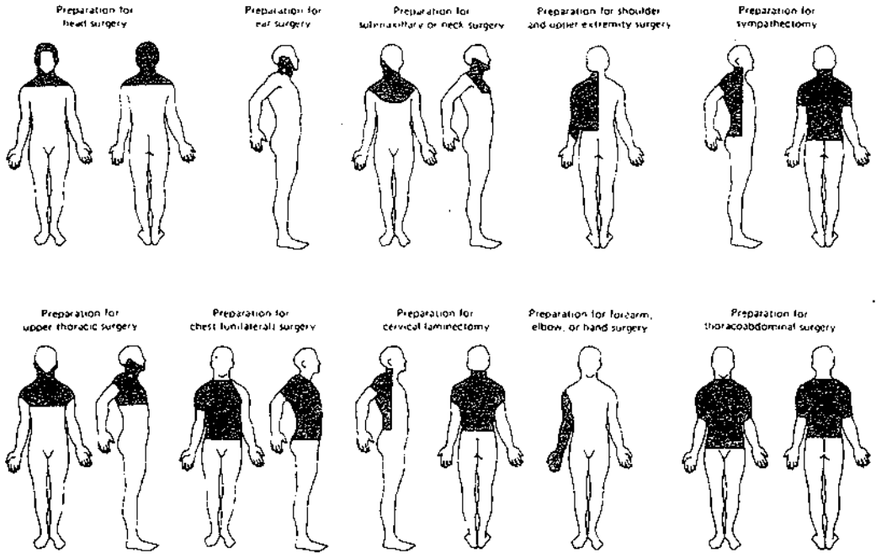
the scheduled operation time. Smoking should be stopped at least 4 hours prior to surgery to prevent lung irritation.

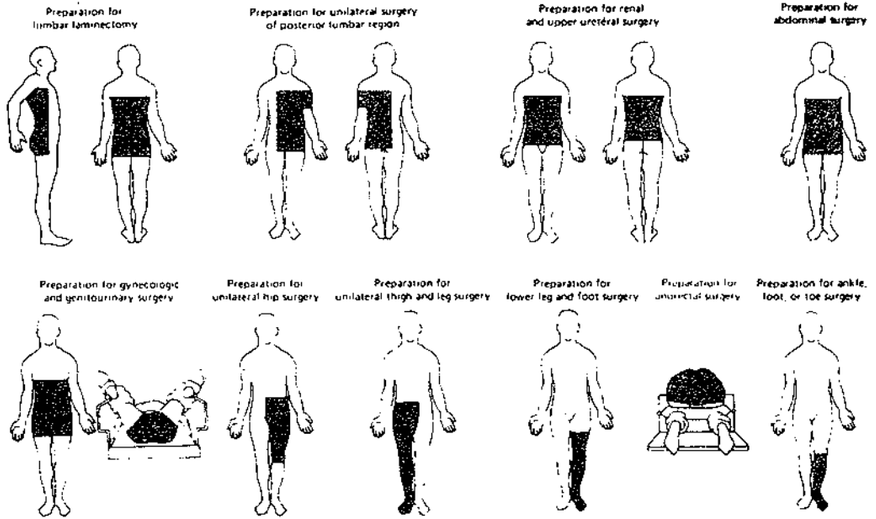
(b) Hygiene and skin preparation: The aim of the special preparative skin care is to make the skin as free as possible of germs without damaging it. In general, the skin will be shaved and cleaned for about 8-12 inches all around the site of the incision. Some examples shown in page 9.

On the night or morning before the operation, you will be asked to shower and shampoo with a special antiseptic solution (Phisohex) which is used like soap. This prevents bacterial growth on the skin. Nails should be clean and any tinted nail polish removed as colour of the finger nails is one of the indicators used to assess the amount of oxygen circulating in the blood stream during durgery and anaesthesia.

As well as regular teeth brushing you may be encouraged to use a mild antiseptic mouthwash. False teeth are usually removed just before going to operating theatre, as are contact lenses.

(c) Bowel and bladder: If you have not been having regular daily bowel motions, an enema may be required on the evening before operation. The bladder also should be emptied just before going to the theatre. There are two reasons for these procedures. One is to avoid involuntary emptying of bowel and bladder while under anaesthetic and the other, in the case of abdominal surgery, is to make organs easier to handle during the operation. There is also a risk that distended intestines or bladder could be





AREAS FOR SKIN PREPARATION

accidentally punctured.

(d) Rest and sleep: A good sleep on the night before operation is important. Usually the surgeon orders sleeping pills in case you cannot go to sleep.
If you have any pain, or feeling of discomfort, tell the nurse immediately and also discuss any doubts or worries that you are experiencing, as these prevent you from getting to sleep.

ON LEAVING THE WARD

On the morning of the operation your temperature, pulse and respiration rate will be checked and recorded as usual. A blood pressure reading will probably be taken also. Any symptoms such as a sore throat or cold should be noted and reported to the nursing staff at once as the anaesthetist will have to check that they are not sufficient to make the anaesthetic a risk. At this stage you will have been told the scheduled time of your operation.

About an hour before the operation, you will be asked to put on a special hospital gown. Hair should be combed and arranged in comfortable style will all pins, combs and clips removed (including wigs and hairpieces). Also nail polish and facial make-up are not worn because they can mask skin colour which normally is used during the anaesthesia to indicate adequacy of the oxygen supply in the blood.

The description on the last section of the booklet under the heading "Operative Day" can be helpful in giving you an overall picture of the process.

IN THE OPERATING THEATRE

About half an hour before the actual time of surgery, you will be transferred to the operating thestre accompanied by the nurse. You will be wheeled to the anaesthetic room first where the anaesthetist will probably make a final check on your overall condition and physical fitness for anaesthesia. You might be anaesthetised in the room and transferred to the operating room before the anaesthetic is commenced. The anaesthetist will make this decision in consideration to your condition, type of surgery and other factors. Intravenous injection is one method of starting general anaesthesia. Sometimes if it has not been done already from the ward, it may be decided to start an intravenous drip through a needle into one of your veins in the anaesthetic room.

On the operating table, you will be placed in a comfortable and suitable position which gives good exposure of the operative area for the type of surgery which you are undergoing. The actual operative procedures begin only after you are already unconscious. The total time will vary according to the type of operation. Further details will be shown in the slides associated with this booklet.

RECOVERY ROOM

The purpose of the recovery room is to provide an area where post-anaesthet patients can be continuously observed and given the skilled care that prevent immediate post-operative complications. From the operating table, you will be placed on a stretcher. This is much narrower than an ordinary hospital bed

so the nurse will put the side rails up along the stretcher for your safety, and sometimes a safety belt is applied to protect and prevent you from physical injury such as falling if you are restless.

During this period, some people can be very restless, although they will probably feel very sleepy still. The recovery room nurse will assist you to be as comfortable as possible.

In the recovery room there are likely to be many activities going on. You may hear the sound of machines most of the time, as the room is well equipped with things to check the normal rate of recovery of each patient as well as to deal with emergencies, e.g. pulse and blood pressure monitors, suction machine and mechanical resuscitators, etc. The recovery room nurse will observe and record your general condition and progress of recovery. Blood pressure, pulse and respiration rate will be taken regularly until you are fully awake.

Recovery from anaesthesia may take 30 minutes to 5 hours. After which time you will be transferred back to the ward.

PAIN AND COMPLICATION OF SURGERY

Simply, pain is "what you feel when it hurts". Post-operative pain occurs from many factors. The main cause is due to tissue injury or trauma. The other causes are thought to be muscle spasm and insufficient blook supply to the tissue of the organ. The greatest need for pain relief is between 12-36 hours post-operatively. After 48 hours the presence of severe pain could indicate complications. The pain that you are likely to experience is at the incision site. It can be a stabbing, burning, shooting or flashing type of pain.

Other than this, there is pain such as gas pains (colic) and aching of the body. Most of the pain can be relieved or minimized. Some types of pain can be controlled to a greater extent by means of your participation. For example, exercise and ambulation help minimise gas pains and improve bowel activities, so allowing you to get back to eating a regular diet sooner than you might anticipate.

Post-operative complications affecting lungs, intestines, heart and blood vessels can all be prevented by means of post-operative exercises as described in the following pages.

POST-OPERATIVE EXERCISE AND EARLY AMBULATION

Return to full ambulation is gradual, but almost all types of surgical patients are encouraged to be out of bed within 24-48 hours after the operation. Even before you are able to walk, in fact, as soon as you are fully awake, there are certain bed exercises which you should do regularly (hourly when awake). It is a good idea to practice the exercises pre-operatively. Instructions are given below. The nurse will help you with the exercises until you are able to do them for yourself.

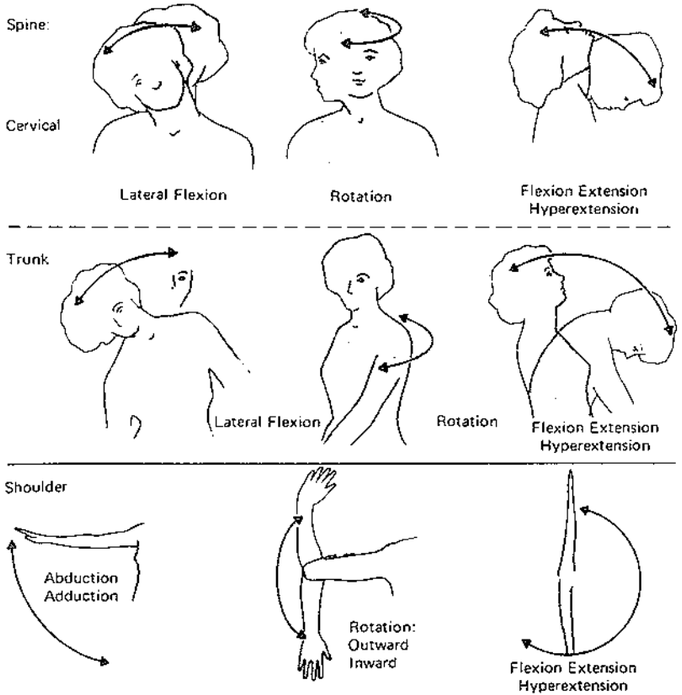
TYPES

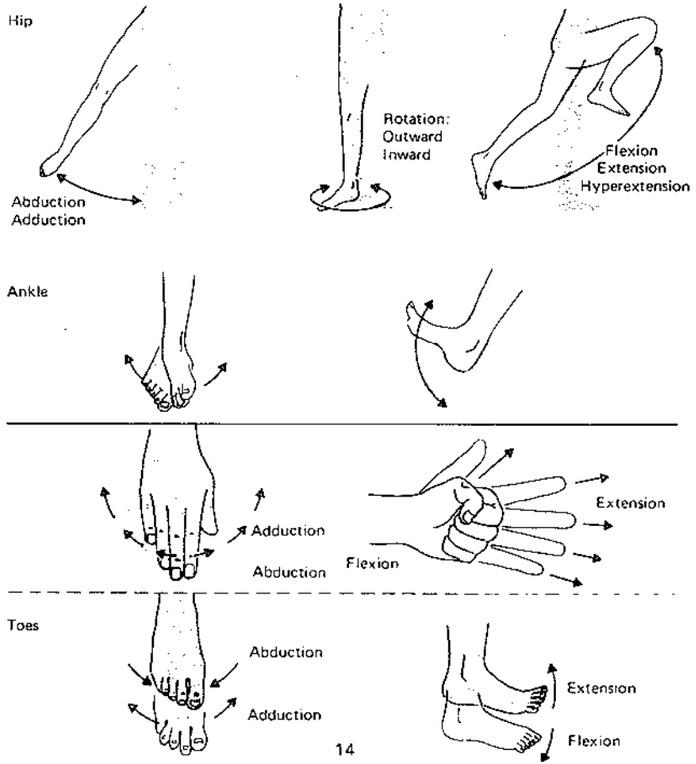
(1) a. Deep breathing exercise -

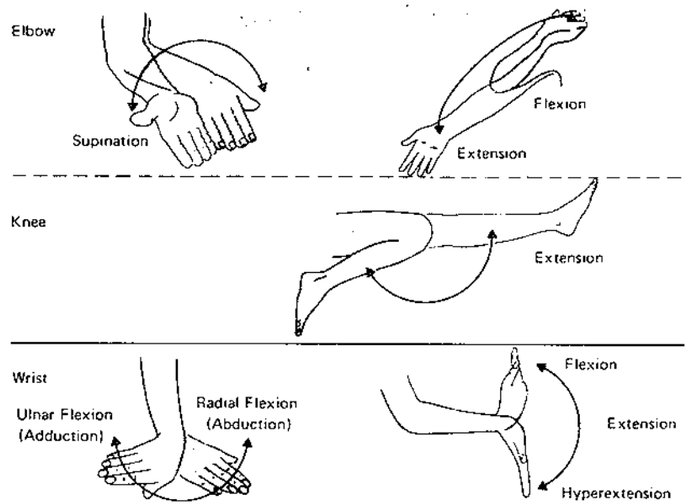
take a deep breath, hold your breath for a very brief interval and breathe out completely by using a blowing motion as if you were about to blow out candles.
Repeat this 10 times.

b. Coughing exercise -

take a deep breath, hold it and then slowly breathe it out all the way. On the next breath hold it and cough from the chest.







RANGE OF MOTION EXERCISE

Repeat this 5 times. While doing this, support your incision site with your hands as well.

(2) Arm exercise through range of motion with specific attention to movement of shoulder joint.
- see diagram
- this is also to be done hourly or two hourly

(3) Hand and finger exercise to maintain good circulation and muscle tone
- see diagram
- this should also be done hourly or two hourly

(4) Ankle and toe exercise to aid in maintenance of good circulation
- see diagram
- this should be done hourly or two hourly

(5) Contraction of the abdominal and buttock muscle to help maintenance of circulation and improve bowel activities
- Contract and relax the muscle of your abdomen and buttocks alternately while lying flat on bed, each for 10 times. This should be done hourly or two hourly.

The advantages of these exercises and of early ambulation are that they reduce the likelihood of post-operative complications as well as they help to reduce pain, speed up the return of normal bladder and bowel functioning (and hence resumption of a normal diet). Normal intestinal functioning is indicated by the return of peristalsis, which means that bowel movement can be heart and felt, and there is passage of gas (flatus).

CARE OF WOUND

The most important requirement for the successful care of wound is to make sure that the site is free of germs (asepsis) beforehand. Bacteria are excluded from wound during the period of operation by maintaining sterility in the operating room. Organisms that enter the wound usually are destroyed by the natural power of resistance of the body.

Surgical wounds in that they are made under germ free (Aseptic) conditions and usually are closed by sutures after all bleeding points have been tied carefully.

In healthy tissue, a wound heals usually in 5-7 days. In the successful closing of the wound, the sutures will start to seal up by 24 hours. This is the reason that the dressing applied initially can usually be removed after 24 hours, except in the oozing wound. The dressing has several purposes i.e. to absorb drainage, the splint and immobolise the wound, to protect from mechanical injury such as rubbing of bed clothes.

Through the healing process, you should be careful not to contaminate the wound by scratching, pulling or playing with the suture thread. Spray dressing is normally used to seal the wound after gauze dressing has been removed. It contains antibiotics and substances that act like a thin film covering the wound site. Whatever type of dressing is applied, careful observation and strict aseptic technique are to be maintained. Report to the nursing staff if you have pain and ask them if there is anything about the wound which worries you, e.g. localised swelling and redness of the skin around the wound, or unusual discharge which could

indicate infection.

ANTICIPATING TIME OF DISHCARGE

Most patients will be almost at their "normal" capacity for daily living at the time of discharge from the hospital, although some further convalescence is usually required. The average length of stay is from one to two weeks, but in many cases is shorter than this. An appointment for follow-up examination (usually 4-6 weeks after discharge) should be made for you. Some patients might return earlier within a week - for removal of sutures, or this may be done by the district nurse in the patient's home.

If the wound requires dressing or there are tubes to be cared for, then discuss the matter with the charge nurse and arrangement can usually be made for regular visiting by a district nurse.

The length of stay in hospital might be longer in cases where body function has changed permanently, e.g. patient with an amputation, or an ostomy (artificial opening) for feeding and elimination purposes. For this person self care can be practised during the period in hospital until he can manage on his own or with some assistance. Continuity of care at home should follow on after discharge.

BACK TO THE ACTIVITIES OF LIFE

After being discharged from the hospital, you may need a "resting period" before going back to work. Two weeks is common for most surgical patients. You should be able to manage most activities of daily living such as personal hygiene care, getting meals, etc., but heavy duties are still restricted, as those can cause mechanical injury to the body, especially the organ that has just

been operated on. In any case, at first, you may not have the energy for heavy tasks. There is often a visiting nurse who works in close co-ordination with the hospital and who is available to help you plan your care and advise on matters such as when to return to work, etc.

SELF CARE

Self care means becoming increasingly independent and responsible for your own care. When you experience a problem and overcome it yourself, this is the best kind of learning experience, and it is worth sharing with people with similar problems.

Thus, self care is knowing how to take good care of yourself after being discharged from the hospital. In resuming your usual activities, the important thing is not to rush into every activity you usually do, but to proceed little by little.

Keeping a check on yourself is necessary/ Clues for observation and a guideline care are as follows:

Nutrition: (except in the cases that have some restrictions)

- eat well balanced diet with plenty of Protein (meat and cheese) and carbohydrates, e.g. rice, potatoes, and bread, provide energy. Vitamin C found in fresh fruit and vegetables such as tamarillos, tomatoes, carrots, prune and orange juice helps the healing process.

- the total intake of fluids should be about 2500-3000 millilitres (8-10 glasses) daily unless contra indicated by kidney or heart disorders.

Elimination:

- avoid constipation: check for bowel motion every three days until becoming daily or on a normal habit.
- avoid gas producing food, e.g. bananas, cabbage and beans.

- avoid over-distention of bladder and bowel. If you are unable to pass urine or have difficulties in passing it, the district nurse or your general practitioner should be informed immediately. Constipation can be relieved by mild laxatives obtained from the chemist. It is prevented by careful attention to ensure a diet containing plenty of roughage, e.g. wholemeal bread, porridge made with coarse oatmeal, fresh green vegetables, etc. and drinking plenty of water.

Clothing:

- wear comfortable and easy care clothes, avoiding, for instance, constrictive clothing below level of lesion, e.g. tight garter or belt.

Rest and Sleep:

Although individual sleep requirements vary, in general the average is for at least eight hours of sleep. An hour sleep or rest in the afternoon might be beneficial for the healing process.

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Special exercise, e.g. range of motion exercise which aims to improve muscular and joint activities may be necessary for anyone who has difficulties in walking. The point to keep in mind is to exercise up to tolerance level, but to avoid fatigue.

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At the time of discharge, ask the doctor or the charge nurse if there are any things for which you should watch out.
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Start mobility (e.g. up in chair and walking)
Pain should be ceased
Wound starts to heal up
Own hygiene and personal care
Continues bed exercise if still bed fast
Resuming normal habits, e.g. foods, fluids and elimination

DISCHARGE
(Approximately 7-10 post-operative days)

No difficulties for home or family managing
No complications
Usual habits resumed
Wound at healthy state of healing
Fully mobilised or almost independently mobile

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Heavy duties are still restricted
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