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Parents' understanding of discharge advice

Susan Howard
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**PARENTS' UNDERSTANDING OF
DISCHARGE ADVICE**

by

Susan Howard Dip. Health Sc.(Nursing).

**A Thesis Submitted in Partial Fulfilment of the
Requirements for the Award of**

Bachelor of Health Science (Nursing) Honours

**at the School of Nursing, Edith Cowan University
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USE OF THESIS

The Use of Thesis statement is not included in this version of the thesis.

ABSTRACT

Although it is often assumed that a person will have increased knowledge after being given new information, it is important to determine how much information the person can recall and comprehend. The study sample was drawn from a paediatric hospital in Australia. The primary purpose of this study was to evaluate parents' understanding of discharge advice. The study is significant both to nursing practice and to hospital credibility. Medical records (1979-85) at the study hospital showed that approximately 100 children per year returned to hospital with secondary haemorrhage after discharge, post tonsillectomy/adenoidectomy. It is reasonable to assume that at least a proportion of these secondary haemorrhages may have been prevented by adequate education of parents. It is important for the nurse to know that the discharge advice given to the parent is understood, as a lack of understanding may reduce its effectiveness. If the parent cannot recall the discharge advice it will not be available for the parent to comprehend its application to caring for the child at home following discharge. The research design was a descriptive, correlational study that took place from Day 1 to Day 3 of hospitalization. A convenience sample of one hundred parents accompanying their child to hospital for a tonsillectomy operation were given a written discharge instruction sheet on Day 1, the day of admittance to the ward. The parent took the initiative to ask for extra information, if he/she wished, at any time following this. A questionnaire was given to the parent on Day 3, prior to discharge. Quantitative data were collected over a period of twenty weeks and analysed using Chi-square

and ANOVA with a SAS package. Previous studies indicated that many factors have an effect on understanding. The factors examined in this study were whether the parent's asking for advice led to increased knowledge, whether the day on which the parent asked for advice affected knowledge and whether parent's knowledge was affected by occupation, education or anxiety level. The majority of parents (97%) thought they fully understood the discharge advice. This was reflected by the results indicating that 77% of parents had a high level of understanding, scoring between 55-100% correct answers on the questionnaire. Hypothesis (1) that there is a relationship between parents' understanding and the effects of time was not supported by the data. Hypothesis (2) that there is a relationship between the parent's level of understanding and the asking for and receiving of extra information was supported in part. Hypothesis (3) that there is a relationship between the parents' level of understanding and other variables such as occupation, level of education and anxiety level is reported in detail in the conclusion. Conclusions reached were that parents' understanding of discharge advice cannot be taken for granted and that, in order for the nurse to feel confident that continuity of care has been provided for the patient, parents' understanding of discharge advice must be evaluated and any knowledge deficit re-addressed. Replication of this study was recommended using a larger sample size, pre- and post-testing of knowledge and a more detailed assessment of parents anxiety level.

I certify that this thesis does not incorporate without acknowledgement any material previously submitted for a degree or diploma in any institution of higher education; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text.

Signature

DateFeb.....1992.....

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TABLE OF CONTENTS

ABSTRACT	i
DECLARATION	iii
ACKNOWLEDGEMENTS	iv
LIST OF TABLES	lx
LIST OF FIGURES	xi
CHAPTER 1	
INTRODUCTION	1
1.1 SIGNIFICANCE AND PURPOSE OF THE STUDY	3
1.2 RESEARCH QUESTION	4
1.3 RESEARCH OBJECTIVES	5
1.4 RESEARCH HYPOTHESES	6
CHAPTER 2	
LITERATURE REVIEW	7
2.1 EMPIRICAL LITERATURE	7
2.2 THEORETICAL LITERATURE	15
2.3 CLINICAL LITERATURE	24
2.4 SUMMARY AND THEORETICAL DISCUSSION	25

CHAPTER 3

METHOD AND PROCEDURE OF THE STUDY	32
3.1 DESIGN	32
3.2 POPULATION IDENTIFICATION	33
3.3 INCLUSION CRITERIA	34
3.4 SETTING	34
3.5 VARIABLES FOR STUDY	35
3.6 DEFINITION OF TERMS	35
3.7 INSTRUMENTATION	37
3.8 COMPILATION OF THE DISCHARGE INSTRUCTIONS	41
3.9 PILOT STUDY	43
3.10 RELIABILITY	44
3.11 CONTENT AND FORMAT OF THE QUESTIONNAIRE	45
3.12 DATA COLLECTION PROCEDURE	52
3.13 PROTECTION OF HUMAN RIGHTS	53

CHAPTER 4

INTERPRETATION OF STUDY FINDINGS	55
4.1 DATA ANALYSIS AND RESULTS	55
4.2 DISCUSSION	64
4.3 LIMITATIONS OF THE STUDY	75
4.4 RECOMMENDATIONS FOR CLINICAL PRACTICE	77
4.5 RECOMMENDATIONS FOR FURTHER RESEARCH	78
4.6 CONCLUSION	80

REFERENCES	84
-------------------	-----------

APPENDIX

A	QUESTIONNAIRE	92
B	DISCHARGE INSTRUCTIONS FOR A CHILD HAVING ADENOIDECTOMY AND TONSILLECTOMY	99
C	NURSES EXTRA INFORMATION SHEET	101
D	QUESTIONNAIRE	103
E	DISCHARGE INSTRUCTIONS FOR A CHILD HAVING ADENOIDECTOMY AND TONSILLECTOMY	110
F	NURSES EXTRA INFORMATION SHEET	112
G	TESTS USED TO ASSESS THE READABILITY OF THE WRITTEN DISCHARGE INSTRUCTIONS AND QUESTIONNAIRE	114
H	CHECKLIST FOR THE GIVING OF DISCHARGE ADVICE	120
I	EXPLANATION OF PROCEDURE TO BE CARRIED OUT BY THE NURSE	123
J	CONSENT FORM	124
K	CONTINGENCY TABLES 1-9 FOR χ^2 3×2 ANALYSIS ON QUESTIONS 1-9	125

LIST OF TABLES

CHAPTER 3

TABLE 3.1:	42
Estimated Readability Level of Parent	
Discharge Instructions and Questionnaire	
TABLE 3.2:	43
Comparison of American Grade Levels and	
Australian School Years	

CHAPTER 4

TABLE 4.1:	57
Results of 2×2 Chi-square Analysis	
Showing Whether Asking for Extra	
Information Lead to Increased Knowledge	
TABLE 4.2:	58
% of Parents Answering Correctly about the	
Kinds of Food or Fluids to Give a Child	
Following Tonsillectomy	
TABLE 4.3:	58
2×2 Chi-square Analysis Showing Whether	
Asking for Extra Information about Food or	
Fluid lead to Increased Knowledge	
TABLE 4.4:	59
Contingency Table for 3×2 χ^2 analysis	
for Questions 1-9 combined	
TABLE 4.5:	60
ANOVA for Occupation of Parent	
TABLE 4.6:	61
ANOVA for Education Level of Parent	
TABLE 4.7:	62
Distribution of Parents within	
Categories 1-3 levels of Education	

TABLE 4.8: ANOVA for Anxiety State of Parent	62
---	-----------

TABLE 4.9: Distribution of Parents within Categories 1-4 Anxiety States	63
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APPENDIX K

TABLE 1: Contingency Table for χ^2 3×2 Analysis for Question 1	125
---	------------

TABLE 2: Contingency Table for χ^2 3×2 Analysis for Question 2	125
---	------------

TABLE 3: Contingency Table for χ^2 3×2 Analysis for Question 3	126
---	------------

TABLE 4: Contingency Table for χ^2 3×2 Analysis for Question 4	126
---	------------

TABLE 5: Contingency Table for χ^2 3×2 Analysis for Question 5	126
---	------------

TABLE 6: Contingency Table for χ^2 3×2 Analysis for Question 6	127
---	------------

TABLE 7: Contingency Table for χ^2 3×2 Analysis for Question 7	127
---	------------

TABLE 8: Contingency Table for χ^2 3×2 Analysis for Question 8	127
---	------------

TABLE 9: Contingency Table for χ^2 3×2 Analysis for Question 9	128
---	------------

LIST OF FIGURES

CHAPTER 2

FIGURE 2.1: 29
**Theoretical Model - Factors Affecting the
Level of Understanding of Discharge Advice**

FIGURE 2.2: 30
**Theoretical Model - Time Factors Affecting
the Level of Understanding of Discharge Advice**

CHAPTER 3

FIGURE 3.1: 32
Research Design
(Adapted from Korsch, Gozzi and Francis, 1968)

CHAPTER 4

FIGURE 4.1: 55
**Number of parents obtaining different
scores on the questionnaire**

FIGURE 4.2: 56
**Number of parents who answered each
question correctly**

FIGURE 4.3: 66
**Application of Bloom's (1964) Educational
Objectives to caring for a child after
Discharge, Post-Tonsillectomy**

Chapter 1

INTRODUCTION

The primary purpose of this study was to evaluate parents' level of understanding of discharge advice. Understanding at its lowest level, according to Bloom (1956), is the ability to comprehend or grasp the meaning of material. Discharge advice is defined as information given, in written and verbal form, to the patient to be discharged to guide future home care actions.

The underlying assumptions of this study supported by the literature are: (1) education increases knowledge (Husband, 1983; Mills, Barnes, Rodell and Terry, 1985; Hibbard, Robinson, Pearson, Rosen and Taylor, 1979; Young 1986; Swezey and Swezey, 1976), and (2) patients benefit from education (Vaughan and Taylor, 1988; Cagan and Meier, 1983; Garding, Kerr and Bay, 1988; Cole, 1979; Husband, 1983; Mills *et al.*, 1985; Hibbard *et al.*, 1979). Swezey and Swezey (1976) quoted Rogers (1969) as stating that "Just because you've said something doesn't mean it's been learned" (p.417). Although it is often assumed that a person will have increased knowledge after being given new information, it is important to use some method of evaluation to determine how much information can be recalled and comprehended. If the information cannot be recalled and comprehended it will not be available for the person to use and apply to specific situations and the education therefore will not have been beneficial to the patient.

Generally patients and their families view discharge as one of the most important events of their hospital stay. The patient is dependent on the hospital staff until discharge and whilst many patients and families receive instructions at the time of discharge they leave the hospital with unidentified or unmet needs (Cagan and Meier, 1983). Many difficulties experienced after discharge could be removed or alleviated by giving fuller information (Vaughan and Taylor, 1988), and evaluating the patient's understanding of the discharge advice.

Discharge planning is important for effective quality of patient care and efficient use of resources (Esper, 1988; Stanton, 1988; Rossen and Coulton, 1985). The majority of hospitals today are overwhelmingly concerned with costs and there is a growing appreciation of "the importance of discharge planning because of its potential for controlling the use of expensive hospital resources" (Rossen and Coulton, 1985, p.55). Social workers were traditionally leaders in discharge planning. Physicians, nurses and hospital administrators were ambivalent about this function and some social workers did not always want to do the paper work and organizing that went with this function. Today this is changing dramatically. Hospital administrators can see the advantages of discharge planning effectively shortening the length of stay in hospital. Physicians are asked to co-operate in screening patients to identify high risk patients for complications at discharge. Nurses can see the potential of discharge planning contributing to their professional goal of managing the continuity of care for their patients (Rossen and Coulton, 1985; Hartigan, 1987).

Even though nurses do perceive patient/family education as a major component of direct care (Stanton, 1988), discharge planning has become a combined effort of several disciplines and begins on admission (Slevin and Roberts, 1987; Esper, 1988; Aucoin and Wegmann, 1988). Identification of patient needs and an adequate discharge plan can avoid readmission which is expensive for the patient, hospital and health care system (Isler 1975). Follow up evaluation of the discharge plan can be used to improve patient care and reduce avoidable costs (Rossen and Coulton, 1985).

Even though discharge advice may be given if it cannot be recalled it will not be available for use by the patient/family. Isler (1975), related by Cagan and Meier (1983), states that families listen to the nurse and appear to integrate the knowledge, but the question arises as to how much has been learned (Yurko and Fratianne, 1988). The teaching method is as important as the adequacy of content of the information being communicated, patient readiness to learn, and the perceived importance of the information received (Mills *et al.*, 1989; Farenfort, 1987; Grady, Buckley, Cisar, Fink and Ryan, 1988).

1.1 SIGNIFICANCE AND PURPOSE OF THE STUDY

Professional nurses are responsible and accountable for the nursing care they give to patients. A part of this responsibility is to provide patient education. The nurse needs to know if the information she gives to the patient is understood as a lack of understanding may reduce its effectiveness. According to Rossen and

Coulton (1985), if a patient is dissatisfied with his/her hospital experience and discharge plan litigious behaviour may follow.

This study is significant both to nursing practice and to hospital credibility. Medical records (1979-85) at the hospital where the study took place showed that approximately 100 children per year returned to hospital with secondary haemorrhage after discharge post tonsillectomy/adenoidectomy. It is reasonable to assume that at least a proportion of these secondary haemorrhages may have been prevented by adequate education of parents.

Within the next twelve months it is a probability that a proportion of tonsillectomy/ adenoidectomy patients will be admitted as day cases to the study hospital. It is therefore essential to fully inform the parent as to the care she/he needs to give to the child following discharge, and to ensure that the discharge advice is fully understood to help reduce the risk of post discharge complications. Evaluation of the parent's level of understanding of the discharge advice prior to discharge will provide an opportunity for the nurse to further explain any information not understood and so fulfil the nurse's obligation to provide quality continuity of care.

1.2 RESEARCH QUESTION

It has been stated (Stanton, 1988) that "patient education is an integral component of nursing care within the hospital environment" (p.10). The giving of discharge advice is an important part of nursing care but many families receiving

discharge instructions leave hospital with unmet needs (Cagan and Meier, 1983). In order to provide effective patient/parent education it is necessary to evaluate the patient/parent's level of understanding rather than assume that all the information that has been given has been understood.

The question for study was therefore:

"What is the level of understanding of discharge advice given by the nurse to parents of paediatric tonsillectomy patients?"

1.3 RESEARCH OBJECTIVES

1. To evaluate the parent's level of understanding of discharge advice.
2.
 - (a) To identify whether the parents asking for advice lead to increased knowledge, and
 - (b) Whether the day on which the parents asked for advice affected knowledge.
3. To identify whether the parents knowledge was affected by occupation, education or anxiety.

1.4 RESEARCH HYPOTHESES

These are stated as:

- 1. There is a relationship between the parent's level of understanding and the effects of time.**
- 2. There is a relationship between parent's level of understanding and the asking for and receiving of extra information.**
- 3. There is a relationship between the parent's level of understanding and their (a) occupation, (b) education and (c) anxiety level.**

Chapter 2

LITERATURE REVIEW

A literature search was conducted for the fifteen year period 1974-1989 using MEDLINE, CINHALL and ERIC data base. Nursing and education were areas accessed with only material written in the English language being used. The following pages describe the relevant material found.

2.1 EMPIRICAL LITERATURE

Vaughan and Taylor (1988), tried to identify what discharged surgical patients worried about and how they solved their problems. A postal survey of 100 patients was conducted one month after discharge with 64 being returned. Seventy percent of the sample felt they had need of help in the first few days at home and sought advice from their general practitioner. Areas of concern were with wound healing, activities of daily living ie. bathing, dressing, eating, elimination, sleeping and sexual activities. Findings indicated that although some people cope well when they go home there are "many others who experience difficulties which could be removed or alleviated by giving fuller information before discharge" (Vaughan and Taylor, 1988).

Cagan and Meier (1983), conducted a study to evaluate a discharge planning tool for families of high risk infants. The study population was divided into two groups. Group A (n35) had very little or no discharge preparation, Group B (n40)

had complete discharge preparation. The discharge planning tool was used to measure the parents knowledge and therefore readiness to care for the infant following discharge. Level of knowledge was interpreted by the researchers by noting if the parent behaviour corresponded to set criterion in areas of diapering, cord care, feeding, bathing, taking temperatures and accurately reading a thermometer, giving prescribed medicines etc. Following discharge a questionnaire was administered within 2-4 days to each family in the study to measure the parents perception of their readiness to care for their infant at home. Observations made were that the tool facilitated the transition from hospital to home care for families of high risk infants. Use of the tool standardized the discharge planning process. Cagan and Meier (1983), concluded that even though many parents received discharge instructions they left hospital with unmet needs. Discharge preparation is important and there is a need for parent involvement in the discharge process. Nurses should plan their patient care around the discharge process so as to help parents cope effectively at home.

Garding, Kerr and Bay (1988), studied the impact of patient education follow up by telephone on the knowledge of the postmyocardial infarction patient. It was concluded that patients who received follow up teaching telephone calls acquired greater knowledge than the control group. The findings suggested that although the teaching process begins in the hospital, "the lack of time to provide information and a decrease in readiness to learn are frequent barriers to receiving and retaining information" (Garding, Kerr and Bay, 1988, p.361).

Cole (1979), developed a multiple-choice questionnaire to assess patients' and students' medical vocabulary knowledge. Many factors were identified that affect the receptiveness of people to health information, for example, a person may not be interested or motivated, they may be over anxious, unwell, depressed, slow or bored. The way the information is communicated may be monotonous, uninteresting, irrelevant, frightening, too lengthy or incomprehensible. It is important to ensure that the use of words that might be misunderstood should be avoided. Pike (1973) is quoted by Cole (1979) as stating that "effective health education of the patient by the doctor depends largely on the ability of the patient to understand the information given and his motivation to listen and act on it" (p.112). The use of medical jargon can be misleading and the patient's lack of understanding can be attributed to the patient giving the impression that he/she knows more than he/she really does. Rather than overestimate a persons understanding it is thought that "oversimplification is usually better than total failure to communicate" (Cole, 1979 p.112). Simplification may be achieved by using language aimed at the age group 10-12 years. It has been found that people of low social status and low educational level do have problems understanding medical words and are most probably the ones in need of the information. Special care should be taken to explain paramedical/biological words in lay terms (Cole, 1979).

Husband (1983), conducted a longitudinal study to try to systematically assess the use and effectiveness of ante-natal education courses. Pre and post test twenty item questionnaires were developed. The pretest was given to 48 primiparous women and 39 completed the post test close to delivery. Forty six percent of the women attended ante-natal classes. Findings indicated that women who attended

ante-natal classes obtained a statistically significant score than women who did not attend. The conclusion reached was that ante-natal education can be effective in significantly increasing level of knowledge.

Mills *et al.* (1985), undertook to explain the roles of patient knowledge, demographic information, general intelligence and problem solving ability and dysfunctional behavioural parameters as potential predictors of compliance with an educational programme after discharge from hospital. A non-random sample of 277 patients diagnosed as having Ischemic heart disease documented as acute myocardial infarction were assessed. Four weeks after discharge a 23 item multichoice test of knowledge was given with an increase in knowledge defined as the difference between pre and post test scores.

Compliance was assessed by means of a 14 item behaviour assessment questionnaire. Findings indicated that post test knowledge scores showed that learning had occurred attributable to the patient education programme. Post test knowledge scores, after education classes, were a powerful predictor of compliance.

Hibbard *et al.* (1979), conducted a survey of ante-natal education methods "to assess the assimilation of information by patients during pregnancy, with particular regard to the effect of socio-economic status and maternal age; to determine the benefit to the patient in terms of relief of anxiety" (p.39). A cross sectional study of primigravidae patients was carried out with different groups of women being interviewed at each of three stages, these being stage I: first attendance, stage II: 35 weeks gestation and stage III: in early puerperium. After

the first stage interview all patients were given an information booklet, advice on other literature available and leaflets on specific topics, for example, breast feeding. Knowledge was assessed by having each patient included in the study complete a multiple choice questionnaire. Results showed that there is a trend for women in the higher social and economic groups to have better knowledge than women in the lower social and economic groups. Women in the older age groups were more knowledgeable than younger women. Women who attended mothercraft classes were less anxious than those who did not.

Yurko and Fratianne (1988), instituted a study to evaluate the quality of their burns discharge programme. A fifteen item questionnaire was developed to evaluate the ability of patients or parents of small children to understand burn wound healing, dressing care and treatment of healed areas of skin, disposal of dressings, washing of clothes and their understanding of the need to report blister formation, increased temperature, wound drainage, and signs of infection. They were also evaluated on their understanding of their exercise programme, dietary needs, prescribed medications and home environment limitations. The sample included 27 adult burns patients and 16 parents of paediatric burns patients who were given the questionnaire on their first return clinic appointment. Results indicated the need to re-evaluate the discharge teaching programme. There was a significant difference between the positive response of patients and what they thought they knew and their actual understanding of wound care and their ability to care for blisters, and the recognition of signs of infection.

Johnson, Axen, Beebe and Halvorson (1988), conducted a study to define the role of the registered nurse (R.N.) in discharge planning. A questionnaire was developed to rate the R.Ns' perception of importance of 22 discharge planning activities and the R.Ns' performance of each discharge planning activity. Importance was ranked on a four point scale ranging from four, very important to one, not important. Performance was rated on a five point scale ranging from four, always performed to zero, not applicable. Eighty four percent of 525 questionnaires were returned. A random sample of 50 patient subjects were interviewed on the day of discharge. Questions asked of these patients included the following: how important was it that the R.N. discussed each discharge planning activity with them, and how well did they feel each activity had been performed. All 22 discharge activities were identified as being of high importance by R.Ns' with performance scores being higher on concrete, specific tasks that related directly to the patients hospitalization and discharge. For example medication instruction, activity restriction, treatment and procedures and use of equipment for use at home, answering family questions about the patients illness, listening and providing emotional support. In contrast patients identified only six activities as important. These included medication instruction, activity restriction, teaching treatments or procedures and use of home going equipment, and having nurses observe returned demonstrations by patients, and answering questions of the family about the patient's illness. Patients ranked R.N's performance of the discharge planning activities higher than the R.Ns' did themselves.

Grady *et al.* (1988), undertook a study to determine what information was important to the cardiac surgical patient and how well prepared the patient was for

discharge. One hundred subjects were given pre and post discharge questionnaires. Conclusions reached were that nurses needed to identify what information is perceived to be important by the patient and take this into account when preparing individual education programmes.

Haskins, Merrill and Bailey (1990) conducted a study to evaluate the effectiveness of perioperative teaching given to parents of children undergoing myringotomies. Prior to surgery, patients and families received pre-operative booklets and the nurse reviewed the instructions with them. Post-operative instructions were reviewed using printed sheets. Pre- and post-test questionnaires consisted of 11 identical questions. Following the post-test parents were interviewed to determine their learning needs. Feedback indicated that parents preferred to have both verbal and printed material, the printed sheet serving as a reference supporting the verbal instructions. Study findings supported the hypothesis that "parents would achieve a greater than 80% score on post-test following perioperative teaching intervention by the nurses" (Haskins, Merrill and Bailey 1990, p.1573).

Strieff (1986) attempted to determine whether or not the reading level of clients in an ambulatory health care setting allowed them to comprehend written patient education material. The actual level of clients' reading skill was assessed using the Wide Range Achievement Test (WRAT). Four readability grade levels were calculated for each of 28 patient education texts available in the health care setting: the SMOG, FOG and Fry scores and the average of the three. SMOG is a grade-level readability formula developed by McLaughlin; FOG is a grade-level

readability formula developed by Gunning; Fry developed a readability graph for a quick estimation of grade-level readability of materials from grade 1 to college. The 28 patient education instruction materials were found to have a readability level at or above the 5th grade level. It was found that "54.7% of the study participants read at a level that would not allow them to comprehend the patient education materials available in their primary health care setting" (Strieff, 1986, p.51). It is assumed that patients benefit from written educational materials given to them by health care practitioners. The practitioners may be incorrect in their perception of clients' level of understanding of the health related information and may need to perform WRAT on every non-urgent patient seen at a first visit. If readability levels were calculated when educational materials were written and printed on each pamphlet this would be timesaving and ensure they were matched with the patients' reading level.

Spadero, Robinson and Smith (1980) used four readability tests to evaluate the level of difficulty of patient drug information. These were the Flesch formula, the FOG formula by Gunning, the Fry Readability Graph and the Spache Grade-Level Score. These formulas allow quick and easy assessment of readability but do not take into account all the variables that can influence reading difficulty and so are not perfectly valid. As there was a high correlation between the various formulas mentioned, they were considered to be valuable tools to use in assessing readability. It was found that, of 111 brochures reviewed, only 57 (approximately 50%) were at a standard level or below. Standard level was interpreted as at the eighth to ninth grade using the Flesch formula.

2.2 THEORETICAL LITERATURE

Young (1986) reviewed three strategies for increasing compliance with medical regimes. These were organizational, educational and behavioural. Organizational and educational strategies have been used to promote and maintain adherence to therapeutic regimes. Behavioural strategies are used mainly to resolve noncompliant behaviour. Organizational strategies include making changes to the way health care is delivered and by actively including patients in their treatment plan. Educational strategies include the way information is presented to the individual and the interest, ability and willingness of the learner. Whatever method of presentation is selected there are six general principles to be used as a guide. "These are brevity, organization, primacy, readability, repetition and specificity" (Young, 1986 p.234). It is noted that written materials improve compliance and that these materials should be aimed at the Grade 4 level to be readable by the average individual. When presenting information it is important to select methods that are "short, clearly organized, provide for repeating information and contain a readable written component" (Young 1986 p.34). The learning goal must be specified for it to be relevant to the learner. If an individual does not perceive the need to know some piece of information it will not be learned.

It is important to evaluate what an individual has learned and there are several methods available to do this. Allowing the learner to ask questions and offering further explanations is one method. Another method is to ask the learner to repeat certain aspects of his treatment plan. Another is to have the learner give demonstration of techniques or procedures, keep a diary or have a written test. Any

of these may be combined to find out what information has been learned as well as what has not been remembered (Young 1986).

Kuipers and Davidhizar (1988), reviewed ten types of education strategies or methods that may be combined to provide an effective educational teaching plan. These include the use of learning contracts, individual teaching, lectures, group discussion, guest speakers, printed materials, audiovisuals, role play, peer counselling and games. It is recommended that a variety of teaching methods should be used with frequent evaluation and modification in response to changing patient behaviours.

When written materials are designed to use as a teaching tool at home they should reinforce or supplement what has been said previously. To be effective, Ryan-Morrell (1985) is reported by Kuipers and Davidhizar (1988) as saying that the handout "should convey accurate information; be understandable to the patient and contain only the information the patient has been taught" (p.58). It should also be written at a lower readability level to facilitate greater comprehension by larger numbers of patients. Standard reading level was interpreted by Spadero *et al.* (1980) as the eighth to ninth grade level using the Flesch readability formula.

Swezey and Swezey (1976), discuss educational theory as a basis for patient education. It is stated that behavioural theorists believe that the patient's ability to acquire new information is dependent on a variety of internal factors and previous experiences. Educationalists are reported to describe possible barriers to learning

related to the motivational factors described by behaviouralists (Swezey and Swezey 1976).

Thorndike (1965), an educational theorist, is reported by Swezey and Swezey (1976) as stating that there are "Two simple laws having a major effect on educational thinking and practice" (p.418). Number one is "the law of effect" and is interpreted as there being a need for feed back and number two is "the law of exercise" which has been translated into "practice makes perfect" (Swezey and Swezey, 1976, p.418). These concepts can be traced back to behavioural theorists Pavlov and Skinner. Skinner (1968) is reported by Swezey and Swezey (1976) as believing that learning is increased with positive reinforcement and that negative reinforcement teaches a person to avoid undesired responses.

The Gestalt school proposes that learning does not always take place in logical sequence and therefore patient education should allow for development of a patient's own insights into his/her disease process and the educational process that may permit him/her to do so (Swezey and Swezey 1976).

Bloom (1956), organized various approaches, opportunities and levels of learning in his "taxonomy of the cognitive domain". Swezey and Swezey (1976), apply the taxonomy to educational objectives and propose that at the lowest level the acquisition of knowledge or information, "the patient learned his diagnosis". The next level is the comprehension of that knowledge. This enables the patient to recognize problems associated with his disease. When the patient realizes that he has a problem he may apply this knowledge by seeking advice from a physician.

The analysis of that knowledge occurs when the physician interprets the patient's complaints to him, and evaluation is possible when the physician determines the appropriate therapeutic regime and the patient can see why the treatment is necessary. Bloom (1956) is quoted by Swezey and Swezey (1976) as stating that:

Evaluation requires judgement substantiated by criteria based on information previously derived and analyzed - something more than an educated guess, something that approaches the highest order of what is meant by "clinical judgement". (p.419)

Rogers (1969) is quoted by Swezey and Swezey (1976) as stating that "Just because you've said something doesn't mean it's been learned" (p.417). This should be kept in mind when planning any patient education activity and the simplest way to test this is to ask the learner to explain what has been said in his own words. A patient may answer "Yes" when asked "Do you understand what I am saying?", but this answer may be given to avoid embarrassment. The patient may feel he has taken up too much valuable time and will answer "Yes" rather than take time to ask questions to clarify misunderstandings. The patient may be asked to demonstrate procedures or techniques to confirm an understanding or assess knowledge by planned pre and post tests (Swezey and Swezey, 1976, p.420).

Swezey and Swezey (1976) conclude that it is the health professional's responsibility to use the best approaches available when planning patient education in order to facilitate patient learning so that the patient may develop optimum abilities to cope with his/her disease. If the education objectives are not considered and the method of teaching is not chosen wisely learning will not take place and non compliance will result.

Duberley (1980), examines health education as a part of nursing practice and reports that nursing theorists Henderson and Orem suggest that nursing and health education is changing and the responsibility of nurses is to teach and advise patients about their own health care. Redman (1972) is quoted by Duberley (1980) as stating that patient teaching gives rise to several questions:

Does the nurse want to teach?
 Does the patient want to learn?
 What should the patient know?
 Does the nurse need the doctor's permission to teach?
 What is the best way to teach?
 How does the nurse know whether the patient has learned? (p.12)

Few nurses are taught how to teach. Student nurses may model themselves on other nurses who taught them but may not be given any formal instruction in how to teach patients. "If nurses are to teach their patients as a part of nursing care they must possess adequate knowledge of teaching skills and they must have practice in using teaching skills." (Duberley 1980, p.12)

To answer Redman's second question it is necessary to look at the nurses assessment of a patient's learning or teaching need. Observation of the patient's physical condition may indicate a learning need, for example, dry cracked skin on the feet of a patient with circulatory problems may mean that the patient needs teaching about foot care. Information giving of known outcomes for a particular disease may be necessary. It cannot be taken for granted that a person has knowledge relevant to assist him with his recovery. "A patient's failure to ask questions should not be construed as meaning that he understands: the impetus should and must be that of the nurse" (Duberley, 1980 p.13). The nurse is

responsible for ensuring that the patient understands. Even though a patient's learning needs may have been identified learning will not be achieved if there is no motivation to do so. Collaboration is necessary between nurses and doctors as to what should be taught. There are many skills that the nurse needs to have for the teaching to be effective or the patient will not be able to cope with health problems, both present and future.

The content of what is to be learned determines the method of teaching, for example, motor skills are best taught by demonstration and practice. Discussion of the information being presented allows patient participation and expression of difficulties that may have arisen.

Whether patient learning has been achieved can be determined by observing and questioning the patient. If a patient, or in the case of a paediatric patient the parent, is unable to answer a list of simple questions relating to the teaching that took place then this would indicate that the teaching has not been effective. Alternative methods of teaching would be required to meet the parent's learning deficit to enable the parent to care for the child at home. "The goal of health teaching is to assist the individual in developing his optimal health potential" (Duberley 1980, p.14).

Fahrenfort (1987), discusses issues in patient education and states that it is the physician who always determines the patient's treatment and it is assumed that the patient will go along with it if he knows the reasons why this decision has been made.

Compliance and education are often linked together but it is difficult to generally conclude that the receiving of more information leads to more compliance. Some studies indicate that when more information is offered compliance is greater but this depends on the kind of information given and the way it is offered (Fahrenfort 1987). It is realistic to provide support programs that are patient centered but the goal of patient education cannot be unquestioning compliance with medical advice. Patient education must be based on the sharing of information, questioning about concerns and doubts so that providers and consumers can learn from each other (Farenfort 1987).

Stanton (1988), attempts to examine nurse - patient interaction in the teaching process. It is put forward that provider and recipient roles should be congruent, but these roles can change as the patient moves into different phases, for example, from illness to convalescence. Nurses do perceive patient/family education as a major component of direct nursing care, and the nurse should attempt to move the patient toward having an internal locus of control. The nurse should use strategies which will facilitate the teaching process and lead ultimately to increased compliance. Patient education is economically beneficial to the hospital and patient and it is central to the patient achieving self care.

Sallis (1985), looked at the application of behavioural methods to improve adherence to paediatric therapeutic regimes. Guidelines were given to promote a systematic behavioural approach to this problem. One such guideline was to determine a patient's/parent's understanding of a regime the child and family were asked to describe it in their own words. This allowed for immediate identification

of misunderstandings. Another example was to give a clear written summary of instructions to help reduce forgetfulness.

Bormuth (1974) tried to answer the question, "How well should a person learn to read?" (p.65). The study attempted to identify performance criteria that can serve as the goal of instructional programs. Models were developed that might tell when a person is literate with respect to a single material or number of materials or models that might tell us when a person can read well enough to achieve his goals. However, these models, even if well developed, only partially answer the initial question, given that "literacy is jointly determined by reading ability and readability" (p.65).

Harrison (1986) reviews work on readability in the United Kingdom from 1981-86. The first section deals with the practical side of readability, estimating reading difficulty of reading material aimed at the general public and school children. The second section deals with theory and new research on "how to describe or measure text difficulty, the development of microcomputer programs to predict difficulty, new work on the validity of the cloze procedure" (p.521). Interest in readability is increasing as educational institutions recognise the continued importance of written communication.

The R.E.A.D.S. project (1978) provides an evaluation of printed materials using computer assessment. The R.E.A.D.S. program provides readability scores (or grade equivalents) for six readability formulas:

1. Flesch (1948) Reading Ease Formula
2. Power's (1958) Revision of the Flesch Formula
3. Dale-Chall (1948) Formula
4. Holmquist's (1968) Revision of the Dale-Chall Formula
5. Spache Formula (1974 Revision)
6. Fry Readability Graph

(The R.E.A.D.S. Project 1978)

Fry (1977) discusses the origin and development of the Fry Readability Graph. Reliability and validity of formulas are discussed with the conclusion that for formulas to have a "modest amount of reliability" they must "consistently correlate fairly well with each other" (Fry, 1977, p.246). Validation of the Fry Readability Graph was by "interformula and comprehension scores and oral reading errors" (p.246).

Spadero (1983) reviews four readability formulas that are available to assess the readability of written materials. The Spache Grade-Level Score method is most beneficial to the health care practitioner and should be used to assess young children's materials, Grades 1 to 3. The Flesch, FOG and SMOG formulas are suitable for materials for older children and adults, Grades 4 to College. These formulas allow quick, easy assessment of readability but, as some writers vary their reading levels as they write, it is important to randomly sample passages within the text. To ensure good communication between practitioners and patients when using written materials the first step should be to assess the readability of the material

prepared for patients. Inclusion of pictures in a pamphlet will not necessarily aid the reader if the text has a high readability level.

2.3 CLINICAL LITERATURE

Hartigan (1987), quotes the American Nurses' Association Division on Community Health Nursing Practice, in consultation with the ANA Commission on Nursing Services (1975), when looking at discharge planning for high risk groups, as stating that:

The professional nurse is responsible and accountable to the patient/client for the quality of nursing, and as an integral part of that nursing, every professional nurse giving that care has a responsibility to plan for the continuity of care for the patient/client. (p.30)

Discharge planning is only one nursing activity. As a person goes from wellness to illness, independence to dependence, assessment, planning and evaluation of the patient's health status is ongoing with discharge planning aiming to ensure continuity of care for both sick and well persons and their families.

Bennett (1986), offers advice to increase patient compliance of a self care plan. Techniques included getting to know the patient before beginning teaching, talking to him, asking questions and listening to answers. It is also important to make sure the patient understands what he is supposed to do and why - using basic language, being specific. In addition the teaching process must include setting daily, weekly realistic goals, praising all attempts to meet goals, being positive, being

prepared to compromise and preparing alternative methods to reach goals, offering incentives and rewards.

2.4 SUMMARY AND THEORETICAL DISCUSSION

The following is a summary of the material found in the literature, relevant to the subject being researched, and a brief discussion of how the information was used to guide the investigator in the writing of the discharge information and questionnaire.

It is generally accepted that the patient is dependent on the hospital staff until discharge. Cagan and Meier (1983), believe that while many families receive instruction at the time of discharge they leave hospital with unidentified or unmet needs. According to Vaughan and Taylor (1988), many difficulties experienced after discharge could be removed or alleviated by giving more detailed, precise information before discharge and evaluating the patient's understanding of the discharge advice. The information given must be understandable and relevant to the patient's problem. A clearly written summary may help reduce forgetfulness (Sallis, 1985) and the information must be aimed at approximately Grade 4 level to be readable by the individual (Young, 1986; Cole, 1979; Kuipers and Davidhizar, 1988). Researchers Bormuth (1973-74), Harman (1970), and Northcott (1975) are reported by Strieff (1986) as having found that 20% of people in the United States were unable to read material written at the 5th grade level. According to Spadero (1983) 50% of health care clients are unable to read instructional material written at the 5th grade level. Doak and Doak (1980) are reported by Strieff (1986) as

stating that at least 20% of patients may be unable to read patient education instructions at all. The average educational level of parents these days may be much higher than this. Flesch (1974) is reported by Spadero, Robinson and Smith (1980) as stating that the standard reading level is at the eighth or ninth grade and that an average high school student should find materials written at this level "easy to read yet educational, without the individual being bothered by sheer reading difficulty" (p.218). Readability assessments of patient education materials indicate a vast majority are written well above the eighth Grade level (Spadero, 1983; Spadero, Robinson and Smith, 1980). In order to ensure readability the information should be aimed at the lowest level which, according to Cole (1979), should be at the 10-12 year age group. Cole (1979), tried to assess level of reading difficulty but did not give an explanation of how this was achieved except to say that test words used in the study were taken from materials with Flesch Reading-Ease scores. It seemed that monosyllabic words are easier to understand than polysyllabic words but it was indicated that "the syllable method of determining readability is not wholly reliable" (Cole, 1979, p.120). Before beginning a patient education programme we are advised to assess a client's level of knowledge and readiness to learn. "However, only a handful of studies have examined clients' reading abilities at all, and even fewer have looked at the relationship between reading level and the ability to comprehend written health care instructions" (Strieff, 1986, p.48). The majority of literature does not mention how the researchers knew that the written information that was given to the study participants was easily readable by the average person. If the written information was above the readability level of the study participants this may have affected the study results. The information must be designed for use at home to reinforce or supplement what has been said

(Kuipers and Davidhizar 1988), by the nurse. Patient perception of the importance of the information being given by the nurse must be identified in order to prepare effective individual patient education programmes (Grady et al., 1988; Young, 1986). The lack of time to provide information and a decreased readiness to learn are frequent barriers to receiving and retaining information (Garding et al., 1988; Swezey and Swezey, 1976). "A patient's failure to ask questions should not be construed as meaning that he understands" (Duberly, 1980, p.13). The responsibility should and must be that of the health care worker to ensure that the patient understands the discharge advice (Cole, 1976; Duberly, 1980; Esper, 1988; Hartigan, 1987). Rogers (1969) is quoted by Swezey and Swezey (1976) as stating that "Just because you've said something doesn't mean it's been learned" (p.417). It is important to evaluate what a person has learned or has not learned (Young 1986).

It is necessary for the tonsillectomy patient/child to receive adequate oral fluids, food, analgesia and rest following discharge from hospital. Only by having a high level of understanding of the home care needed will the parent be able to give the optimal home care to the child. An improved level of understanding of discharge advice should increase the quality of home care following discharge, and help reduce the number of return visits to hospital due to complications, for example, haemorrhage. The giving of discharge advice to the parent of a post operative tonsillectomy patient/child is not sufficient. The nurse must ensure that the advice is understood for it to be effective.

According to Cole (1979), receptiveness to health information may be affected by lack of motivation or interest, the person "may be overanxious or unwell,

depressed, slow or bored" (p.111), or the person may be influenced by his/her social economic and cultural heritage as well as by personal characteristics, previous experience and knowledge (Hibbard *et al.*, 1979). Many factors affecting the level of understanding of discharge advice have been identified from the previous studies (Cole, 1979; Garding, Kerr and Bay, 1988; Swezey and Swezey, 1976). These factors are shown diagrammatically in Figure 2.1. Theoretically this model shows that some factors affecting the nurse and the parent overlap when discharge advice is being given and received. This overlap leads to differing levels of parental understanding and may have an eventual effect on the standard of care the child receives from its parent. Whilst all factors shown in the model are acknowledged as having a possible effect on the parent's understanding of discharge advice they are outside the scope of this study.

In this study time factors that may affect the parent's level of understanding are categorized as Day 1, Day 2, and Day 3, the theory being that the time at which the discharge advice is given and received will affect the parent's level of understanding of the discharge advice. The influencing variables considered in this study are seen to be: (a) occupation of the parent, (b) level of education of the parent, and (c) the parent's anxiety state related to caring for the child at home following discharge. The standard of home care will depend on the level of understanding of the discharge advice. This theory is presented in Figure 2.2.

The majority of studies in the literature review used questionnaires to evaluate the level of understanding of information given. Some used multichoice questionnaires, others used pre and post tests, rating scales and open and closed

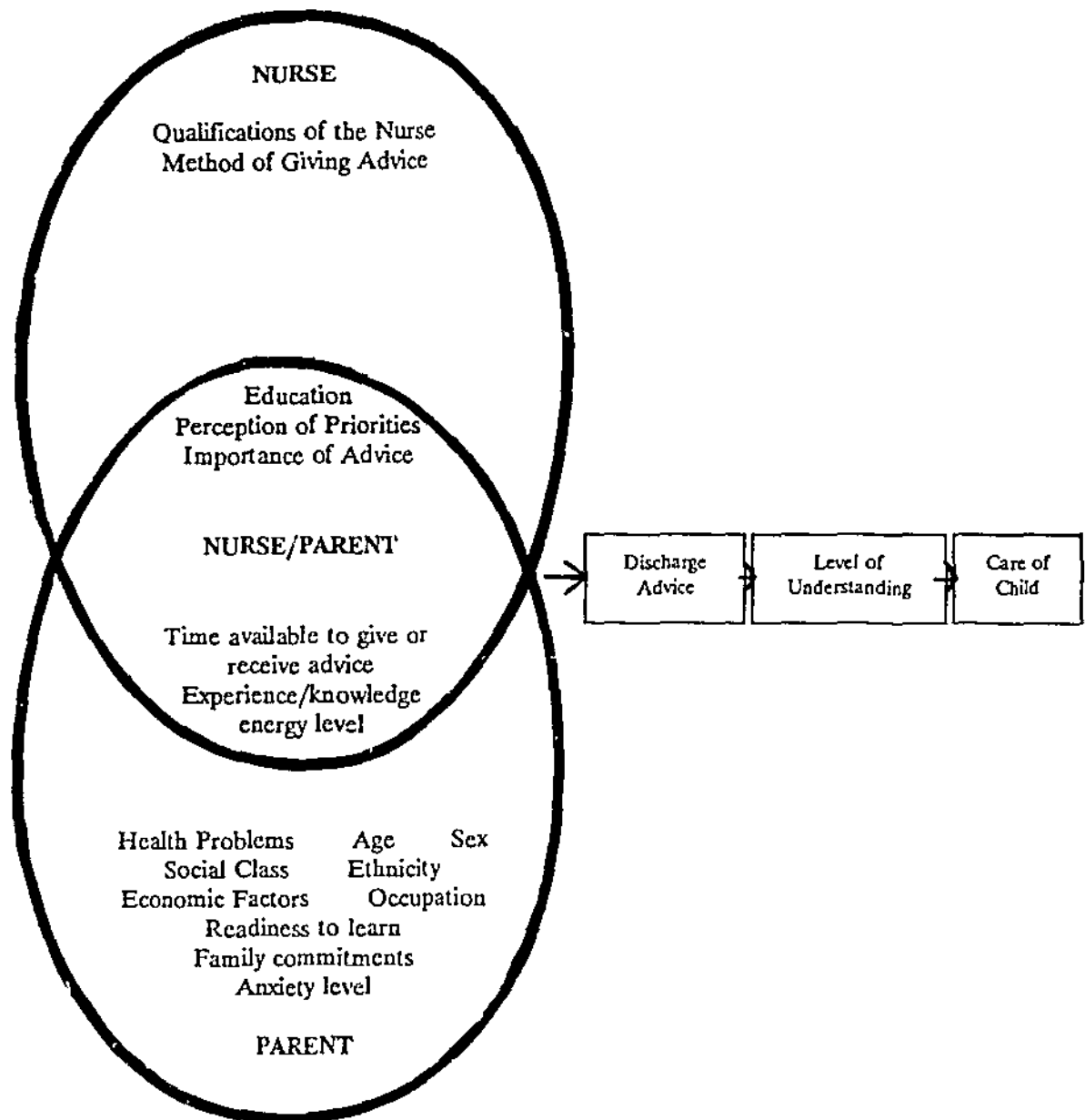


FIGURE 2.1: Theoretical Model - Factors affecting the level of understanding of discharge advice

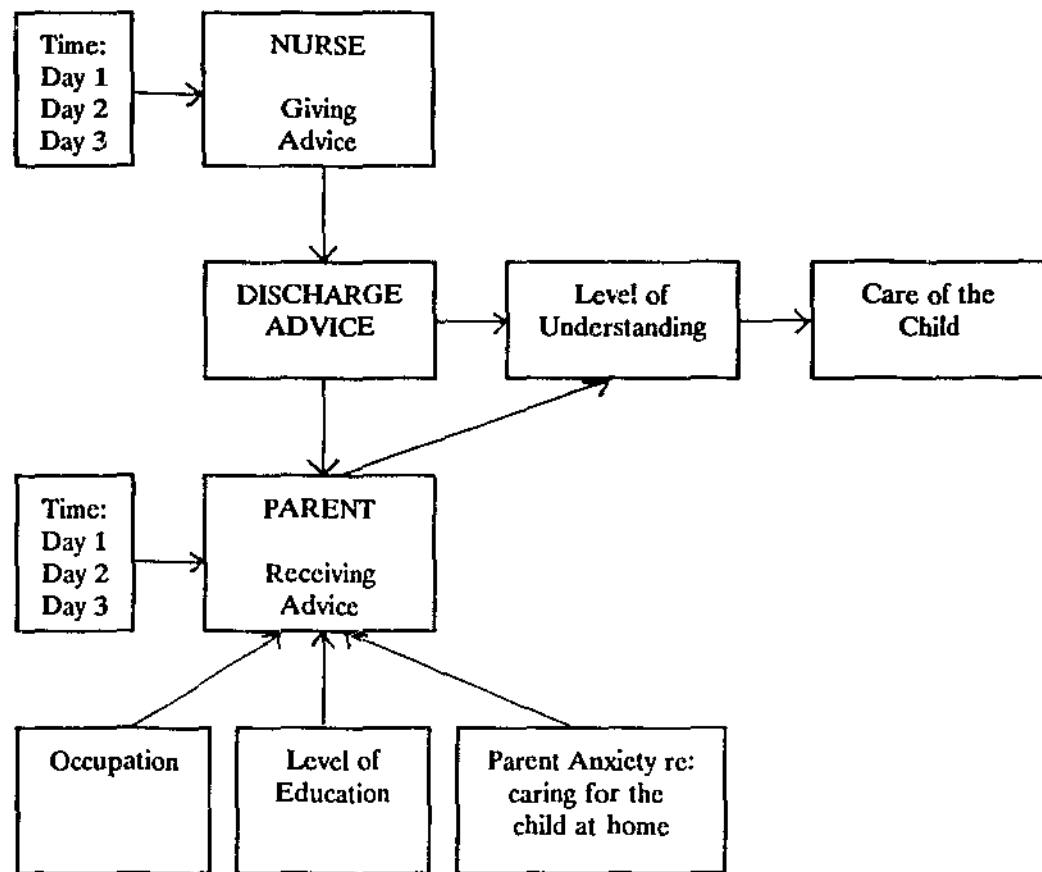


FIGURE 2.2: Theoretical Model - Time Factors affecting the Level of Understanding of Discharge Advice

questions. There does not seem to be one type of questionnaire that is more successful than another. It was therefore decided to use open and closed questions in the questionnaire for this study with a rating scale used for assessment of certain items. Multichoice questions were not thought to be appropriate as they may give a prompt to the parent to give the correct answer by elimination of obviously wrong statements. Findings in the literature were taken into account when writing the discharge advice and questionnaire. It seemed important to ensure that the parent was given all relevant information before discharge and take into account the ability and willingness of the parent to learn.

It may not be possible to assess how willing the parent is to learn but to try to reduce this problem as well as being given full written information at a low readability level, the parent should be allowed time to ask questions and each piece of written information should be short, accurate and clearly organized (Young, 1986; Kuipers and Davidhizar, 1988).

Chapter 3

METHOD AND PROCEDURE OF THE STUDY**3.1 DESIGN**

The research design was a descriptive correlational study that took place from Day 1 to Day 3 of hospitalization. Figure 3.1 illustrates the research design and briefly summarizes the independent and dependent variables.

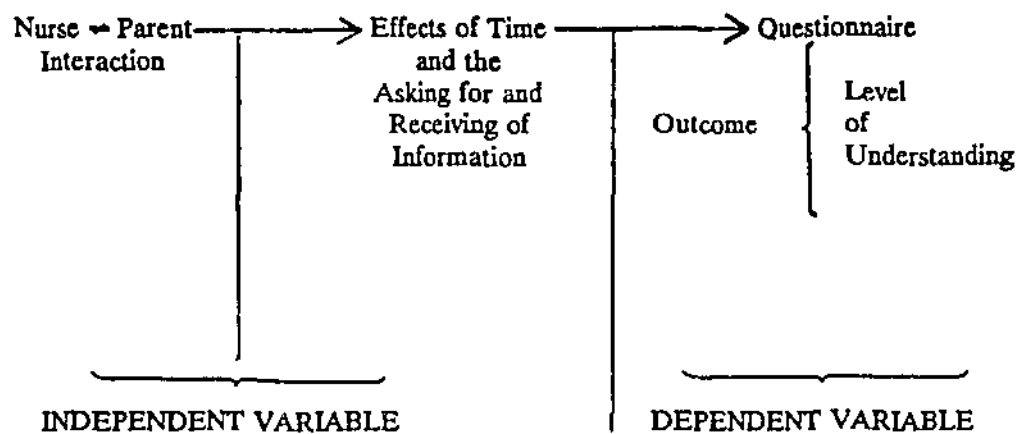


FIGURE 3.1: Research Design
(Adapted from Korsch, Gozzi and Francis, 1968)

The usual length of stay for a child having a tonsillectomy is three days. Day 1 is the day the child is admitted to the hospital ward. Day 2 is the operative day and Day 3 is the day the child is usually discharged. Written discharge advice was given to the parent on Day 1, with extra information available at any time following this, ie. on Day 1, Day 2 or Day 3. The initiative to seek further information was taken by the parent with the parent asking for further information if he/she felt it was necessary. On Day 3, prior to discharge a questionnaire was given to the parent to evaluate the parent's level of understanding of the discharge advice previously given. Relationships between the variables of understanding of discharge advice, the effects of time, and the asking for and receiving of explanatory information were examined. Other influencing variables: parent's occupation, level of education and anxiety state, related to caring for the child at home following discharge, were briefly examined.

3.2 POPULATION IDENTIFICATION

The target population were parents of children having a tonsillectomy. It was a convenience sample of parents accompanying their child to hospital for a tonsillectomy operation during the period of the study. Data were collected over a period of twenty weeks. The sample size was 100. Hospital figures to July 1988 indicate that approximately 35 tonsillectomies are performed each month.

3.3 INCLUSION CRITERIA

1. The child was admitted to one specific paediatric hospital for an elective tonsillectomy.
2. The operative procedure included tonsillectomy but could include any or all of the following procedures: (a) Adenoidectomy, (b) Myringotomies and tubes, (c) Cautery of inferior turbinates, (d) Antrum washout.
3. The parent accompanying the patient on admission to hospital was present at discharge.
4. The parent had no previous experience of having a child undergo a tonsillectomy procedure.
5. The person giving the advice was a Registered or an Enrolled nurse.
6. The parent had to have basic English knowledge. (Having basic English knowledge was defined as being able to function at a socially acceptable level in verbal communication.)

3.4 SETTING

The study was carried out at a 239 bed paediatric hospital in Australia. There are eight surgical areas in the hospital. The study was confined to a specific surgical ward.

3.5 VARIABLES FOR STUDY

The dependent variable was identified as the level of understanding of discharge advice and was measured as a percentage score of answers to a questionnaire. The independent variable was a combination of the effects of time (ie. the time at which the nurse gave the written discharge advice - Day 1) and the asking for and receiving of additional explanatory information.

Influencing variables were identified as occupation, level of education and parental anxiety related to caring for the child at home following discharge.

3.6 DEFINITION OF TERMS

Discharge Advice

Conceptual Definition - Information given to the patient to be discharged to guide future home care actions.

Operational Definition - Information given in written and verbal form to the parent of the paediatric tonsillectomy patient to guide home care actions after discharge.

Understanding

Conceptual Definition - The level of knowledge retained, regarding discharge advice.

Operational Definition - Knowledge recalled and measured as a percentage in response to a questionnaire administered on Day 3 of hospitalization, pre-discharge.

Learning

Conceptual Definition - A process which results in a change of behaviour.

Operational Definition - The ability to answer questions correctly relating to information given some time earlier.

Parent

Conceptual Definition - Being the father or mother of a child.

Operational Definition - Having legal guardianship of the child, able to give consent for hospital procedures; the person accompanying the patient on admission to hospital and the same person being present at discharge, ie. may be a close relative, aunt, uncle or grandparent.

Time

Conceptual Definition - A period with events or characteristics; a distinguishable part of the year or day.

Operational Definition - Category of time when additional discharge advice is given, ie. Day 1, Day 2, Day 3.

3.7 INSTRUMENTATION

A questionnaire was developed to measure the parents' level of understanding of discharge advice (see Appendix A).

Content Validity

To ensure content validity, the questionnaire (see Appendix A), the information to be given as written discharge advice (see Appendix B) and the Extra Information Sheet (see Appendix C) were presented to three clinical nurses and to one staff development nurse, identified as specialists in Ear, Nose and Throat surgical patient care. An average congruency percentage of 90% was considered an acceptable measure of content validity.

It was necessary to make some adjustments to the written Discharge Instructions and Extra Information Sheet as follows:

1. To change "Give clear fluids to drink such as water, and cordial" to "Give a variety of fluids to drink" and include here "but do not give citrus fruit drinks, such as orange juice, during the first two days" instead of leaving this in the Extra Information Sheet. The explanation for not giving citrus fruit drinks remained in the Extra Information Sheet to ensure the nurse gave the reason if the parent asked why citrus fruit drinks should not be given. An explanation of why a "normal diet" is important was included in the Extra Information Sheet ie. "a normal diet promotes chewing which exercises the

facial and neck muscles, ultimately leading to decreased pain sensation", to provide a rationale for the directions being given if the parent asked about diet.

2. There was 100% acceptance of the medication advice but it was agreed that a change to the wording of the time period of 48-72 hours should be made to make it 2-3 days. It was thought that some parents may not easily equate 48-72 hours as the same time period as 2-3 days.
3. It was thought necessary to include the advice "Between the 5th and 7th days the clot begins to dissolve and bleeding may occur" in the written Discharge Instructions instead of only in the Extra Information Sheet as the parent should be made aware of the most likely time that bleeding may occur so as to increase the parent's coping skills if bleeding occurred. Where the word "vomit" had been used it was decided to add (ie is sick) as an explanation of the meaning of the word "vomit".
4. There was 100% acceptance of this piece of advice but it was thought necessary to add to the Extra Information Sheet that "if the family live in a country area they should stay within easy reach of their local emergency hospital or local Doctor".
5. No changes were necessary.

6. The time period was increased from 3-5 days to 7-10 days to reduce the risk of haemorrhage.
7. No changes were necessary.
8. It was agreed that the information about the child possibly having foul smelling breath following the operation should not be included as not all children would have this and this information may increase parental anxiety unnecessarily.

Changes to the Questionnaire were as follows:

Question 3. On which part of the head will you look for bleeding that may occur after you have taken your child home?

The word "head" was thought to be ambiguous and was changed to "face".

Question 5. What are the signs of bleeding (other than seeing blood) that you should look out for?

This question was deleted as it was thought to be ambiguous.

Question 7. Where should your child play during the first 3-5 days after you take him/her home?

The time period was changed to 7-10 days to correlate with number 6. on the Discharge Instruction sheet.

After these changes were made the Discharge Instructions and the Extra Information Sheet were presented to two Ear Nose and Throat Consultants as a further check of content validity.

Changes were as follows:

Point 7. of the Discharge Instructions should state that swimming should not be allowed in a swimming pool rather than just state that swimming is not allowed as some parents may allow their child to play in the family pool without thinking that they are allowing them to swim.

Point 8. of the Extra Information Sheet was incorrect and was changed to "Following tonsillectomy the pain or discomfort felt by children, described as soreness of the throat or earache, is referred pain as nerve endings are left exposed in the tonsil bed. As healing takes place pain sensation decreases. This is a normal response and panadol may be given if needed for the same reason as given in Section 2".

The revised Questionnaire (Appendix D), written Discharge Instruction sheet (Appendix E), and Extra Information Sheet (Appendix F) were used in the pilot study.

3.8 COMPILATION OF THE DISCHARGE INSTRUCTIONS

The Discharge Instructions were compiled from the discharge advice given on the Ear, Nose and Throat surgical patient ward at the study hospital and copies of discharge advice used by other children's hospitals in Australia (Adelaide Children's Hospital, 1990; Royal Children's Hospital, 1989; The Royal Alexandra Hospital for Children, 1989). Each piece of information was checked for accuracy using nursing and medical textbooks (Brunner and Suddarth, 1988; Pillitteri, 1981; Thompson, McFarland, Hirsch, Tucker and Bowers, 1986; Phipps, Long and Woods, 1987; Warner, 1978) before being collated and used as a base. Discharge advice given by a Consultant E.N.T. surgeon to his private patients was obtained and used with his permission.

The question arose as to how the researcher would know that the instructions were written at a level that would be readable and understandable by the average individual. As stated previously in Chapter 2 it is suggested that the instructions should be aimed at the reading level of a 4th grade student (ie age group 11-12 years), (Young, 1986; Cole, 1979; Kuipers and Davidhizar, 1988) to ensure readability.

To assess the readability level of the written Discharge Instructions and questionnaire, four formulae were used. See Appendix G for explanations of methods of analysis used. Results are displayed in Table 3.1.

TABLE 3.1:
Estimated Readability Level of Parent
Discharge Instructions and Questionnaire

Readability Formula	Passage 1 Grade Level	Passage 2 Grade Level	Passage 3 Grade Level	Average Grade Level
FLESCH formula	6	6-7	7	6
FOG formula by GUNNING	7	7	8	7
Readability Graph by Fry	6	6	7	6
SMOG formula by McLaughlin	30 sentences used for assessment			8

It can be seen that using the Flesch and FOG formulas and the Readability Graph by Fry that the readability level of the Discharge Instructions and Questionnaire is estimated to be at the 6-7th grade level. When using the SMOG formula readability level was estimated to be at the 8th grade level. The SMOG formula is one of the easiest methods to use and is considered to be one of the most accurate (Spadero, 1983). The SMOG method is based on 100% comprehension whereas the other methods are based on 50% to 75% comprehension. Therefore all parents reading the Discharge Instructions and Questionnaire having reached American Grade 8 (Australian Year 8) should be

able to fully comprehend the information. See Table 3.2 for comparison of American Grade levels and Australian School Years.

TABLE 3.2:
Comparison of American Grade Levels and
Australian School Years

America		Australia	
Grade Level	Age Group	School Year	Age Group
4-5	9-11	4-5	9-10
6-7	11-13	6-7	11-12
8-9	13-15	8-9	13-14
10-11	15-16	10-11	15-16

Compiled with assistance from the
United States Consulate General, Education Advisory Service (1990);
Department of Education and Youth Affairs (1984).

3.9 PILOT STUDY

To determine the clarity of the questions and the effectiveness of the instructions a pilot study was performed using ten subjects. Each subject was interviewed individually after completion of the questionnaire. Each subject was asked if the instructions given to enable him/her to answer the questionnaire were clear or whether the subject could offer any suggestions for improvement. Each subject was asked if they thought the questions in the questionnaire were clearly written or if the subject could offer any suggestions for rewording of any of the

questions. All ten subjects stated that they thought the instructions and questions were clearly written and could offer no suggestions for improvement. These ten subjects were included in the study and the questionnaire was accepted as the final version for the study.

3.10 RELIABILITY

To enhance reliability of the administration of the questionnaire the investigator met with the nurses on all shifts on the ward involved in the study. A verbal explanation of what was required of them was given together with a brief explanation of the purpose of the study. A request was made for the nurses' full co-operation in collecting the data using the checklist (see Appendix H). An explanation sheet of the procedure to follow by the nurse (see Appendix I) was supplied with each checklist.

On Day 1 the nurse gave the written Discharge Instruction sheet (Appendix E) to the parent bringing a child to the hospital for a tonsillectomy operation and asked the parent to read it carefully, while remaining with the parent. The nurse asked the parent if he/she wished to ask any questions and answered them using the Extra Information Sheet (see Appendix F). The nurse was requested not to give extra information unless the parent asked for it.

If the nurse gave extra information at any time he/she was asked to tick [✓] the appropriate box on the checklist, to show which piece of additional information was needed by the parent and on what day it was given. If information was

requested regarding discharge advice not covered in the written Discharge Instruction sheet or in the Extra Information sheet, the nurse was requested to refer to the clinical nurse specialist (CNS) on the ward for advice. These questions asked by the parent and the answers given by the nurse were recorded in the space provided on the checklist sheet. The nurse was requested not to put the name of the patient or parent on any of the study documentation.

On Day 3 prior to discharge the investigator asked the parent if he/she had a child previously have a tonsillectomy or adenoidectomy operation. If the answer was "No" the investigator gave the questionnaire to the parent. The questionnaire requested the parent's participation in the study. If the parent agreed to take part in the study he/she was asked to sign a consent form (Appendix J). The consent form was put in the envelope provided and placed in the box allocated for this purpose during the period of the study. The investigator collected the questionnaire when the parent had finished and put it in the file allocated for this purpose for the period of the study.

3.11 CONTENT AND FORMAT OF THE QUESTIONNAIRE

The purpose of the covering letter of the questionnaire (see Appendix D) was to request the participation of the parent in the study. It gave assurance to the parent that their child had received the highest standard of care during the child's stay in hospital and that the parent may withdraw at any time from the study or withhold information if he/she wished. Assurance was given that the identity of the parent would be anonymous as neither the parent's or child's name would be put

on any of the study documentation. A brief explanation of the potential benefits of the study was given and the parent was assured that there were no risks to the child or to the parent if the parent took part in the study. Instructions were given to assist the parent answer the questionnaire. An estimated time frame to answer the questionnaire was suggested to indicate to the parent how much time to allow to complete the questionnaire.

Answers to questions 1 to 9 were used to assess the parent's level of understanding of the information given as discharge advice.

Question 10. Was the written information sheet given to you?

This was asked to check that the initial written Discharge Instruction Sheet was received by the parent. If it had not been given to the parent then the parent could not be included in the study.

Question 11. Did you ask for further information?

This question was used as a cross check of agreement between the nurse's checklist marking and the parent's recollection of when he/she asked for more information. If there were any inconsistencies this would possibly indicate that either the nurse was not filling in the checklist correctly or that the parent did not understand this question.

Question 12. If YES, was the information requested on:

DAY 1. The day your child came into hospital?

DAY 2. The day your child had his operation?

DAY 3. The day your child left hospital?

This question was asked to indicate to the investigator which day the parent needed to ask for more information about the discharge advice. It was also used as a cross check of agreement between nurses checklist marking and the parent's answer to this question. Inconsistencies would possibly indicate that either the nurse was not filling in the checklist correctly or the parent did not understand this question.

Question 13. Did you feel that adequate information was given to you by the nurse?

This question was asked to indicate whether or not the parent was satisfied with the quality/quantity of the discharge advice he/she had been given by the nurse. Dissatisfaction with the quality/quantity of the discharge advice may indicate a need to re-evaluate the discharge advice.

Question 14. Was the information given to you:

Fully understood?

Partly understood?

Not understood?

This question was asked to indicate the parent's estimation of their own level of understanding of the discharge advice. This may be used to compare what the parent thought they understood with the actual level of understanding as indicated by the score of answers to the questionnaire.

Question 15. Are you the same parent/person that brought your child to hospital for his/her operation?

This question was asked to ensure that the parent/person who brought the child to the hospital and received the written Discharge Instructions was the same parent/person who was present at discharge and answered the questionnaire. If the answer to this question was "No" then the subject was not included in the study.

Question 16. What is your relationship to the child?

Mother

Father

Other (please specify) _____

The answer to this question indicated which parent was involved in the care of the child during hospitalization and likely to continue in the care of that child at home following discharge. It is generally accepted that the mother cares for the child more than the father and that she has some knowledge of basic nursing skills to enable her to care for her child at home following discharge. If the answer to this question indicated a trend that the father was the prime carer then there may be a need to ensure that teaching of some basic nursing skills is available to the

father, such as taking a temperature, hygiene needs, dietary needs etc., before the child is discharged from hospital.

Question 17. What is your occupation?

Parental occupation was identified as an influencing variable affecting level of knowledge. This question allowed categorization of the subject's occupation, basing classification of occupation upon the Department of Employment and Industrial Relations and Australian Bureau of Statistics (1987). Four main categories were used for computer assessment. Some classifications were grouped together in a category to keep the number of categories to a minimum. Category 4 was not a listed category but was used to include the single parent/housewife in the study.

Category 1 - Professional.

Included Professionals: eg teachers, pharmacists; Business Professionals, eg accountants; Para-professionals, eg Registered Nurses.

Category 2 - Clerical.

Included Bank officers, clerks, secretaries, market researchers, data entry operators and telephonists.

Category 3

Salespersons and personal service workers/tradespersons/labourers and related workers. Included shop assistants, barmaids, taxi drivers, chefs, machinists, silk screeners, storepersons, and cleaners.

Category 4

Single parent/housewife/home duties.

This information was then used to find out if occupation affected knowledge. If the subject had given 'housewife' or 'home duties' as their occupation jointly with some other occupation then the other occupation was taken to be the subject's occupation.

Question 18. If you have a partner, what is your partner's occupation?

This question was asked to identify the subject's partner's occupation and whether the subject was a single parent. If the subject had no partner then the subject was identified as a single parent which allowed categorization of the subject's occupation where the parent had answered 'housewife' or 'home duties' to question 17.

Question 19. Please indicate which years at school you completed

Before Year 10

Year 10

Year 11

Year 12

Question 20. Are you or have you been involved in any further education? Please indicate

College or University Diploma

Bachelor Degree

Other, please state _____

Level of education was identified as an influencing variable and these two questions were asked to assess the parent's level of education. This information was then used to find out if level of education affected knowledge.

Question 21. Please indicate how confident you feel about caring for your child at home following discharge.

Very confident

Moderately confident

Slightly confident

Not confident

Anxiety state, related to caring for the child at home following discharge was identified as an influencing variable. Rather than ask the parent how anxious

he/she felt, which might have elicited negative feelings towards caring for the child at home following discharge, a positive statement of level of confidence was asked for. On a four point scale - Very confident indicated that the parent did not feel any anxiety, Moderately confident indicated that the parent was slightly anxious, Slightly confident indicated that the parent was moderately anxious and Not confident indicated a high level of anxiety. As anxiety was identified as an influencing variable a more in depth assessment of anxiety was not necessary. It was only necessary to identify how anxious the parent thought they felt and see if this anxiety affected knowledge.

3.12 DATA COLLECTION PROCEDURE

Data were collected using a questionnaire (see Appendix D). To ensure reliability of data collection the investigator met with the nurses on all shifts on the ward involved in the study as previously explained on page 44.

Day 1. on admission: the parent was given the discharge instructions in written form (see Appendix E) and he/she was asked to read it carefully. The nurse asked the parent if he/she wished to ask any questions and answered them using the Extra Information Sheet (see Appendix F).

The use of this sheet ensured all parents had access to the same information. No extra information was given unless the parent asked for it. If extra information relating to the Discharge Instructions was given at any time the nurse indicated on a checklist (see Appendix H) which piece of information needed more explanation

and on what day it was given. If information was requested regarding discharge advice not covered in the written Discharge Instruction Sheet or in the Extra Information sheet the nurse referred to the CNS on the ward for advice. These questions asked by the parent and the answers given by the nurse were recorded in the space provided on the checklist sheet.

Day 2. operative day: the parent had time to review the discharge advice and ask any questions of the nurse if he/she wished.

Day 3. discharge day: prior to discharge the investigator requested the parent's participation in the study and gave the parent the questionnaire.

As the study participants names did not appear on any of the study documentation sheets that the nurse and parent filled out, a numbering system was devised to enable the researcher to identify and match up the two sets of data sheets, ie. the checklist with the questionnaire for each subject.

Data sheets were collected daily by the investigator. Access to the investigator was by telephone at work or at home in case assistance was needed by the staff regarding procedure.

3.13 PROTECTION OF HUMAN RIGHTS

The proposal was submitted to the Ethics committee at the Edith Cowan University, previously the Western Australian College of Advanced Education (WACAE) and to the study Hospital before the study commenced.

All data in written or verbal reports are displayed as grouped data.

All parents bringing a child for a tonsillectomy during the period of the study were given the same discharge information. This ensured that all parents had access to the same discharge information whether or not they took part in the study, thus providing the same standard of care for each child.

Agreement to participate in the study was obtained in writing on Day 3, prior to answering the questionnaire, pre-discharge. If consent had been obtained before this time the validity of the study would have been jeopardized as an explanation of what was expected from the parent would have prompted the parent to increase their learning of the discharge advice. The consent form was separated from the other study documentation providing anonymity for the parent.

The parent was reassured that their child had received the optimal standard of care during hospitalization and that he/she may refuse to participate in the study or withdraw at any time or withhold information if he/she wished. There were no risks to the parent or child during the study, but the potential benefits of the study were that the needs of the parent would be identified. This information may be used to improve the standard of home care given by the parent to the child.

Chapter 4

INTERPRETATION OF STUDY FINDINGS**4.1 DATA ANALYSIS AND RESULTS**

Objective 1 was to evaluate the parents' level of understanding of the discharge advice. In order to find out how much the parents knew, the score of the answers to each question in the questionnaire was calculated and the results are displayed in Figure 4.1. It can be seen that 2% of parents scored two out of nine correct answers to the questionnaire; 7% scored 3 out of 9; 14% scored 4 out of 9; 19% scored 5 out of 9; 31% scored 6 out of 9; 18% scored 7 out of 9; 8% scored 8 out of 9 and 1% scored 9 out of 9.

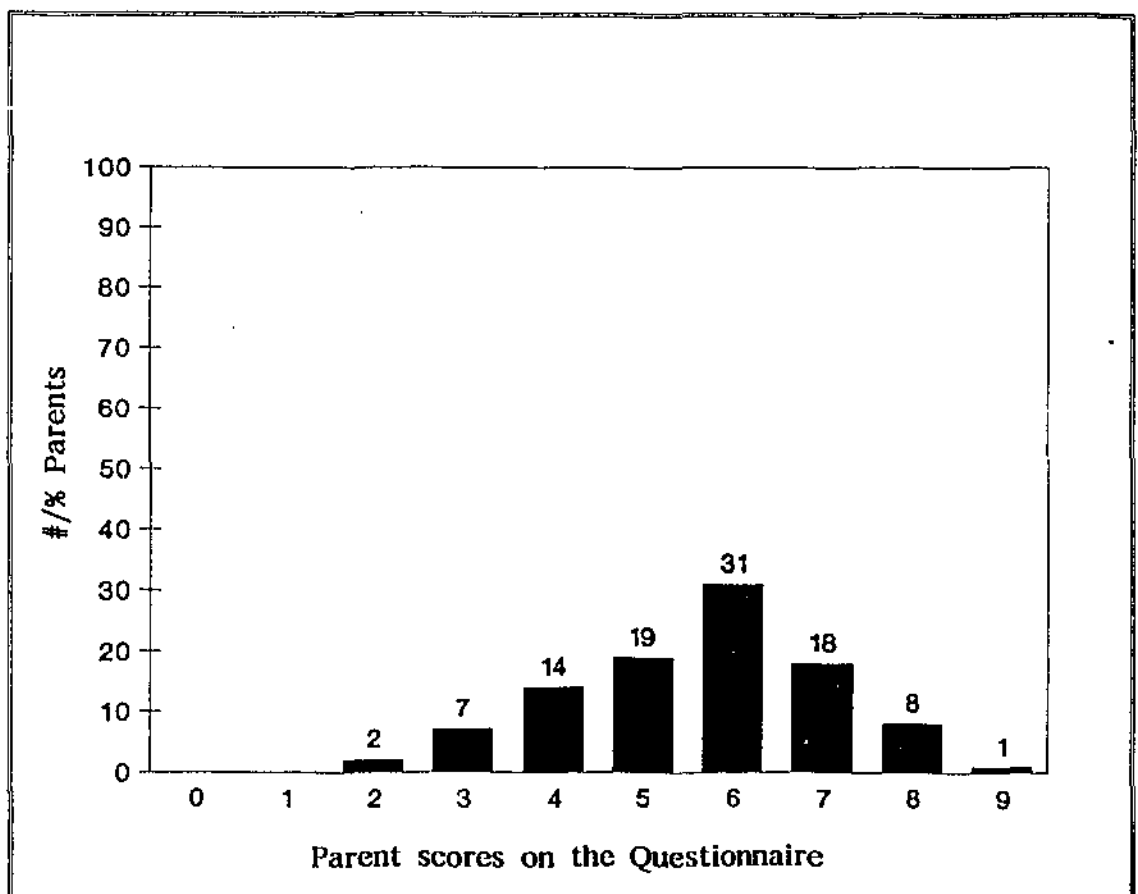


FIGURE 4.1: Number of parents obtaining different scores on the questionnaire

Following this the number of parents who answered each question correctly was calculated and the results are displayed in Figure 4.2. It can be seen that 26% of parents answered question 1 correctly; 69% answered question 2 correctly; 84% answered question 3 correctly; 26% answered question 4 correctly; 79% answered question 5 correctly; 80% answered question 6 correctly; 82% answered question 7 correctly; 50% answered question 8 correctly and 68% answered question 9 correctly.

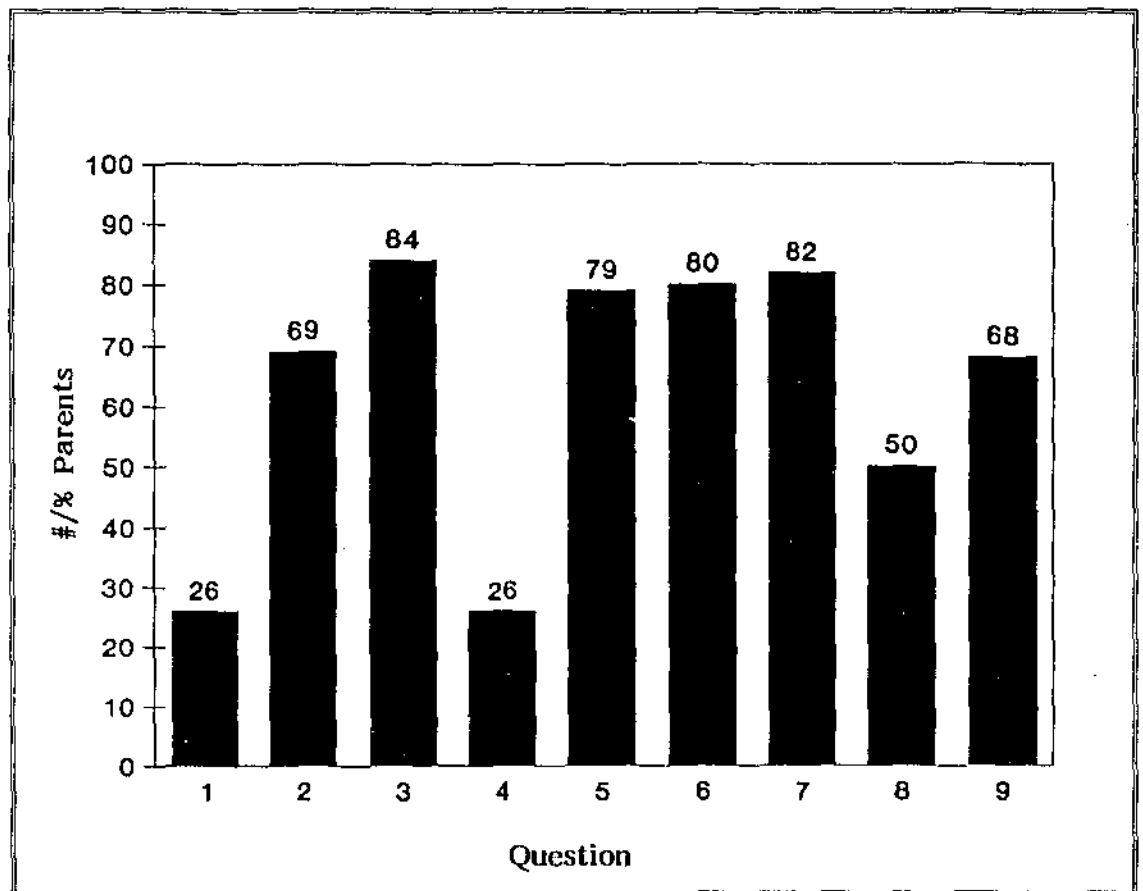


FIGURE 4.2: Number of parents who answered each question correctly.

Objective 2(a) was to identify whether the parents asking for advice led to increased knowledge. Chi-square test of independence was used to find out if parents who asked for extra information knew more than parents who didn't. Results are displayed in Table 4.1.

TABLE 4.1:
Results of 2×2 Chi-square Analysis Showing Whether Asking for
Extra Information Led to Increased Knowledge

Question	χ^2 Value	df	Prob.	Level of Significance	H ₀
1	4.008	1	0.045	*pr < 0.05	Reject
2	1.036	1	0.306	pr > 0.05	Accept
3	0.043	1	0.835	pr > 0.05	Accept
4	0.554	1	0.457	pr > 0.05	Accept
5	0.183	1	0.669	pr > 0.05	Accept
6	0.503	1	0.478	pr > 0.05	Accept
7	0.580	1	0.446	pr > 0.05	Accept
8	7.429	1	0.006	**pr < 0.01	Reject
9	7.402	1	0.007	**pr < 0.01	Reject

Only with Questions 1, 8 and 9 was there found to be a relationship between parents asking for information and an increased level of understanding.

As Question 1 asked parents about both food and drink that should be given to a child following tonsillectomy, the answers were reviewed and results displayed in Table 4.2.

TABLE 4.2:
% of Parents Answering Correctly about the Kinds of Food or Fluids to Give a Child Following Tonsillectomy

Question	% Parents Answered Correctly
1 - Food	50
1 - Fluid	48

A separate χ^2 test of independence calculated for Food and Fluid, Table 4.3, displays the results.

TABLE 4.3:
2×2 Chi-square Analysis Showing Whether Asking for Extra Information about Food or Fluid Led to Increased Knowledge

Question	χ^2 Value	df	Level of Significance	H ₀
1 - Food	2.778	1	pr > 0.1	Accept
1 - Fluid	22.148	1	pr < 0.001	Reject

Objective 2(b) was to identify whether the day on which the parent asked for advice affected the parent's knowledge.

χ^2 test of independence on each question was not possible as there were not enough frequencies in each cell. χ^2 requires expected frequencies of at least 5 in each cell. Contingency Tables 1-9 for 3×2 χ^2 analysis on Questions 1-9 are shown in Appendix K. As χ^2 analysis could not be performed for each question, all

questions were combined and χ^2 test of independence carried out using the totalled frequencies. To do this, each parent was categorized as a Day 1 asker, Day 2 asker or a Day 3 asker.

Depending on whether the parent answered $> 50\%$ of the questions they asked about correctly or incorrectly, they were categorized as Correct or Incorrect. With even numbers $\geq 50\%$ were Correct, $< 50\%$ were Incorrect. Table 4.4 shows frequencies and expected frequencies for this 3×2 χ^2 analysis.

TABLE 4.4:
Contingency Table for 3×2 χ^2 analysis
for Questions 1-9 combined

Question 1-9	Parent Asked for Extra Information on			
	Day 1	Day 2	Day 3	Total Row
Correct	28 (26.2409)	13 (15.9036)	25 (23.8554)	66 total correct
Incorrect	5 (6.7590)	7 (4.0963)	5 (6.7590)	17 total incorrect
Total Columns	33 Total Day 1	20 Total Day 2	30 Total Day 3	83 Total Answers

There was no significant increase in level of knowledge associated with which day the parent asked for extra information ($\chi^2 = 2.1487$, $df = 2$, $pr > 0.2$). Therefore, the day the parent asked for extra information did not affect the parent's level of understanding.

Objective 3 was to identify whether parents' knowledge was affected by their occupation, education or anxiety state. Using SAS package, ANOVA was calculated on knowledge scores for:

1. occupation of parent;
2. education of parent;
3. anxiety state of parent related to caring for the child at home following discharge from hospital.

Results were as follows.

TABLE 4.5:
ANOVA for Occupation of Parent

F Value	Pr > F	df	ANOVA SS	Mean Sq.
4.94	0.0031	1	28.6014	9.5338

4.94 is greater than the value required to reach an alpha of 0.01. It is concluded that there is a difference between the groups. A Scheffé-test was performed to compare the differences between the groups with unequal numbers. This showed a significant difference between groups 2 and 4, alpha 0.05. A level of significance was not reached for groups 1 and 2; 1 and 3; 1 and 4; 2 and 1; 2 and 3; 3 and 2; 3 and 1; 3 and 4; 4 and 1; 4 and 3.

For computer analysis, occupation was categorised as:

Category 1 = Professional/Business Professional/Paraprofessional

Category 2 = Clerical

**Category 3 = Salespersons and Personal Service Workers/Tradespersons/
Labourers and Related Workers**

Category 4 = Single Parent/Housewife/Home Duties

**TABLE 4.6:
ANOVA for Education Level of Parent**

F Value	Pr > F	df	ANOVA SS	Mean Sq.
2.59	0.0805	2	10.8208	5.4104

2.59 is less than the value required to reach an alpha of 0.05. It was concluded that the parents level of education did not affect their knowledge. For computer analysis, education level was categorized as:

Category 1: Not past Year 10

Category 2: Not past Year 12

Category 3: College/Bachelor/Higher

The distribution of parents within these categories is shown in Table 4.7.

TABLE 4.7:
Distribution of Parents within
Categories 1-3 levels of Education

Category	#/% Parents
1	50
2	29
3	21

TABLE 4.8:
ANOVA for Anxiety State of Parent

F Value	Pr > F	df	ANOVA SS	Mean Sq.
0.61	0.5446	2	2.6618	1.3309

0.61 is less than the value required to reach an α of 0.05. It was concluded that parent anxiety did not affect their knowledge.

For computer analysis parents anxiety state was categorized as:

Category 1: Very Confident (Nil anxiety)

Category 2: Moderately Confident (Slight anxiety)

Category 3: Slightly Confident (Moderate anxiety)

Category 4: Not Confident (High anxiety)

The distribution of parents within these categories is shown in Table 4.9.

TABLE 4.9:
Distribution of Parents within
Categories 1-4 Anxiety States

Category	#/% Parents
1	79
2	20
3	1
4	0

Other information obtained from the questionnaire was as follows:

1. 98% of parents were satisfied that they had been given adequate information by the nurse to enable them to care for their child at home, following discharge.
2. 97% of parents thought they fully understood the discharge advice with 3% of parents believing that they only partly understood the advice.
3. 94% were mothers and 6% were fathers involved in the care of the child during hospitalization.

Only seven parents out of the one hundred asked questions relating to information not addressed in the Discharge Instruction Sheet or in the Extra Information available to parents. These questions were related to when the child

would be discharged, when the follow-up appointment would be made, when would the child be allowed to use a pillow in bed at home, is it normal for the child to vomit blood, and a query about the actual operation the parent had consented to, for the child.

4.2 DISCUSSION

The development of patient education materials and programmes has made a substantial contribution to the health and welfare of patients (Kruger, 1990). With paediatric patients it is essential to have an effective education programme for parents to assist them in providing optimal care at home for their child following discharge.

The acquisition of information or knowledge is recognized as an important outcome of education. The emphasis on knowledge where it involves only recall or remembering is distinguished from the emphasis on knowledge as involving understanding. We often think of knowledge as something that is learned as a result of being presented with information that is communicated in one form or another, that is, in verbal, written or visual form (Bloom, 1956).

Learning that goes one step beyond the simple recall or remembering of material represents the lowest level of understanding. Understanding defined at its lowest level is the ability to comprehend or grasp the meaning of material (Bloom, 1956). In this study measuring parents understanding of discharge advice was by assessing the parent's recall and interpretation of the discharge instructions given

to them. The questionnaire provided the parent with the opportunity to summarize or explain what he/she thought was understood.

In Bloom's (1956) Taxonomy of Educational Objectives: The Cognitive Domain, the major categories considered are as follows:

1. Knowledge
2. Comprehension
3. Application
4. Analysis
5. Synthesis
6. Evaluation

"These categories start with the relatively simple knowledge outcomes and proceed through increasingly complex levels of intellectual ability" (Gronlund, 1976, p.38). The extent to which knowledge has been used in looking after discharged, post-operative tonsillectomy patients is demonstrated in Figure 4.3. Only the first two categories, Knowledge and Comprehension, apply to this study. It is not known how the parent applied his/her knowledge and comprehension of the discharge information to problem situations at home following discharge.

Bloom's (1964) Categories of Educational Objectives:

Categories of Bloom's Educational Objectives as they apply to the study of Parents Understanding of Discharge Advice

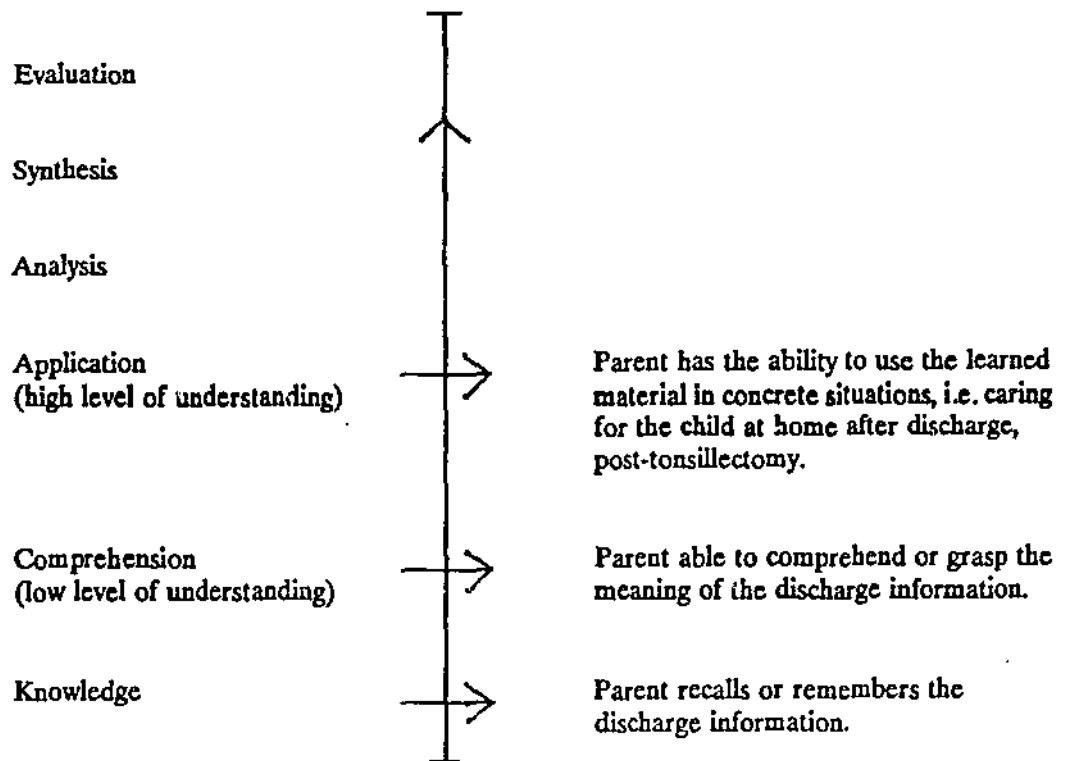


FIGURE 4.3: Application of Bloom's (1964) Educational Objectives to caring for a child after Discharge, Post-Tonsillectomy

In this study, 98% of parents were satisfied that they had been given adequate information by the nurse to enable them to care for their child at home following discharge. Even though 97% of parents thought they fully understood the discharge advice, the actual levels of understanding as displayed in Figure 4.1 showed that 19% scored five out of nine correct answers on the questionnaire with 23% scoring only two to four correct answers and 58% having a score of six to nine correct answers. This seems to indicate that the majority of parents had a high level

of understanding of the discharge advice as approximately 77% of parents scored between 55% and 100% correct answers on the questionnaire.

In Figure 4.2, we can see that with Questions 2, 3, 5, 6, 7 and 9 parents had a high level of understanding as questions were answered with between 68% and 84% accuracy. With Question 8, 50% accuracy was still an acceptable level. With Questions 1 and 4 only 26% accuracy was obtained and the question is raised as to why parents found these two questions difficult to answer. Focusing on each question it seemed that with Question 1 pertaining to food and drink, when the answers were reviewed it was found that 50% of parents knew what food to give their child and 48% of parents knew what fluids to give their child to drink. It may have been more appropriate to ask about food and drink in separate questions. With parents' understanding of what food to give the child even though 50% of parents answered the question correctly, the 50% that answered incorrectly may have been influenced by their own previous experience of what they were given to eat following tonsillectomy. It would have been useful to know if a parent had a tonsillectomy during their childhood to be able to find a possible correlation between the answer they gave and their own experience.

When considering the reasons for low level of understanding of Question 4, the parent may not have perceived it necessary to remember between which days bleeding may be most likely to occur, only that bleeding may occur. It would have been useful to follow the subjects in the study sample to see if any of them, answering question 4 incorrectly, returned their child to hospital with haemorrhage as postoperative complication. Low level of understanding may be associated with

other factors. A consideration related to a lower level of understanding of any question may be whether or not the wording of the question(s) is too difficult to comprehend. As the readability level of the Discharge Instructions and Questionnaire was estimated to be at American Grade level 7-8 (Australian School Year 7-8) age level 12-14 years, it is assumed all the study participants should have been able to read the Discharge Instructions and Questionnaire with 100% comprehension (SMOG formula). 50% of the study participants were educated up to Year 10 with 50% having a higher level of education. Even if parents had left school before Year 10 (age 15 years) they should have been able to read the Discharge Instructions and Questionnaire with 50% to 75% comprehension (Fog, Fry and Flesch formulas).

Another consideration may be whether parents' literacy, defined by Bormuth (1974) as "being able to respond appropriately to written language" (p.9), is associated with level of understanding. According to Bormuth (1974):

The number of years a person has been in school is a very poor index of his ability to read, for within any grade level it is common to observe very wide variations in reading abilities of students. (p.11)

If a person is able to read what he is given and gain enough information for his needs then the person should be considered literate. When a person is given a specific reading task it is possible to alter the person's literacy status by instructing him in literacy/reading skills or by adjusting the material to match his literacy/reading skills (Bormuth, 1974). In this study parents should be considered literate if they were able to get the information they needed to care for their child

at home following discharge from hospital, from the materials they read, that is, the discharge instructions. The discharge instructions were tailored to the parents needs and were at a readability level allowing the average parent to read and comprehend the information. Therefore the parents in this study can be considered literate with respect to the reading task they were set as indicated by the results showing an overall high level of understanding of the information given.

When stating that parents have a high level of understanding of the discharge advice, consideration must be given to parents motivation to learn and perception of what they feel is important to know when caring for their child. Not all parents would perceive that it is important to know when a child can play sport or where the child should play. The parent may be motivated to remember when a child is allowed to return to school if he/she perceives it is important to return to a previous routine. The parent may be motivated to learn and understand what medicine to give the child, the dose and how often, if he/she perceives it is important to know what to do if the child has pain.

Common sense and reasoning may have played a part in the parents' answering some questions correctly, for example, if a parent understands what the operation involves, that is, the tonsils are removed from the throat, then it seems reasonable to assume that the parent would know that the child's throat would be sore rather than the child's leg. But, if the parent did not understand about referred pain, then the parent would not know or understand that the child may also feel pain in the ears.

If we consider Bloom's (1956) theory as explained earlier, it may be argued that to answer the questionnaire parents need only be able to recall or remember the Discharge Information, but by giving the parent explanations as to why he/she should care for the child in the way described the parent is more likely to comprehend and understand the information. According to Bloom (1956) "knowledge which is organized and related is better learned and retained than knowledge which is specific and isolated" (p.35). It is generally accepted that explanations facilitate understanding. If only recall was deemed necessary and was being measured, then the discharge information would have to be written in brief statements without any explanation being given.

When trying to identify whether the parents asking for extra information lead to increased knowledge, it was found that only with three questions, numbers 1, 8 and 9, was there a significant relationship between parents asking for information and an increased level of understanding. When looking at these questions it seems that parents ask for more information about what food and drink they should give their child, where the child will be likely to feel pain, and what to do if the child bleeds heavily. As Question 1 was asking for information about food and about drink, it was necessary to conduct a χ^2 analysis for each part to see if parents who asked for extra information understood significantly more about the food or about the fluids they should give their child. Results showed that, when parents asked about what fluids to give their child, their level of understanding was significantly increased (χ^2 22.148, df = 1, pr < 0.001). Whereas when parents asked about what foods to give their child, no relationship was found between asking for extra information about food and increased knowledge (χ^2 2.778, df = 1, pr > 0.1). As

discussed earlier, parents' own previous experience of what they were given to eat following tonsillectomy may have had some influence here together with older generation, family pressures, for example, grandparents may have been conditioned to thinking that following tonsillectomy the most suitable foods are cold ice cream, slippery jelly and other soft foods. The grandparents then passed this advice on to their children, the study participants.

If we look at the kinds of information parents asked about, that have a significant relationship with parents' level of understanding, it seems that parents may have had more motivation to learn and understand if they perceived that it is more important to have information about nutrition, pain and emergency treatment, for immediate use on discharge, rather than information on where the child should play, the sports activities the child should not take part in, when the child should return to school or return appointments to the hospital for follow-up.

With regard to the parents who did not ask for extra information, they may not have perceived that it was not necessary as the information in the written Discharge Instruction sheet was perceived to be adequately explained (98% of parents were satisfied that the discharge information was adequate for their needs).

There was no evidence to make a conclusion as to whether the day the parent asked for extra information affected parents knowledge of the discharge advice, as in relation to specific questions there were insufficient numbers/frequencies in each cell to perform χ^2 analysis. When all questions were combined and χ^2 analysis performed, it was found that it did not make any difference to

parents knowledge whether they asked for extra information on Day 1, Day 2 or Day 3 ($\chi^2 = 2.1487$, $df = 2$, $pr > 0.2$). A more reliable indication of how the day the extra information was given might affect knowledge may be possible if a larger population could be used.

An attempt was made to identify whether parents knowledge was affected by their occupation, anxiety or level of education. It seems that parents occupation does have some significant effect on level of knowledge ($F 4.94$, $df = 3$, $pr > F = 0.003$). It is concluded that there is a difference between the groups. A Scheffé test indicated that Groups 2 and 4 are significantly different from each other; Group 2 was categorised as clerical, Group 4 as single parent/housewife/home duties. Category 2 parents may have found it easy to fill in the Questionnaire as in their daily work they fill in forms, answer questions, talk to people and ask for information, that is, they are functionally literate - they have acquired these literacy skills as a result of their work experience. Wickert (1989) states that, "Literacy is not a clearly definable positive/negative accomplishment. It is a set of skills that people have to varying degrees" (p.4). These literacy skills may have given Group 2 an advantage over Group 4 when asking for discharge advice and answering the questionnaire. Category 4 parents may be at home for the majority of each day and not be used to asking for or receiving information. They may not regularly fill in forms and may have been at a disadvantage in the study when compared with group 2 parents.

ANOVA indicated that parents' level of education did not affect their knowledge. In order to draw a conclusion as to why this should be so, it was

necessary to look at raw scores. It is noted that 50% of the sample fell into the category of being educated "up to year 10" level, 29% were educated "to Year 12" and 21% to Tertiary. Tertiary level was categorized as "College, Bachelor or Higher" education. As this study is concerned with understanding at its lowest level according to Bloom (1956), and the readability level of the Discharge Instructions and Questionnaire was estimated to be at the 7th to 8th Grade level (12-14 years) SMOG formula (for 100% comprehension), then all parents in the study should have reached a level of education that would have allowed them to comprehend/ understand the information given and be able to answer the questionnaire. Even if some parents had left school earlier than at the end of Year 10, maybe at age 15 years, they should still have been able to comprehend the material. It seems valid to state that the parent's educational level would not have affected the parent's knowledge acquisition or comprehension in this study. It is interesting to note that Wickert (1989) estimated that, of 12.25 million Australian adults, "1.2% were judged to have limited literacy skills" (p.9), but "most Australian adults can handle documents at the basic level although 13% of adults with 6 years or less of school may have trouble with certain tasks". (p.16)

ANOVA indicated that parents anxiety level related to caring for the child at home following discharge, did not affect level of knowledge. In order to draw any conclusions as to why this should be so it was necessary to look at raw scores. It is noted that 79% of parents did not feel any anxiety, 20% felt slightly anxious and 1% were moderately anxious. In this study anxiety was identified as an influencing variable and level of anxiety was only assessed from the parent's self-estimation of how anxious the parent felt. Anxiety was assessed by the parent by

estimating how confident he/she felt about caring for the child at home. A positive statement of level of confidence was used to estimate parental anxiety, as a negative statement of anxiety level would possibly have introduced some negative feelings of anxiety that may not have been present originally.

It is possible to state that, as no negative feelings of anxiety were induced by the questionnaire, parents may have had low or nil anxiety due to the combined influence of a number of other factors:

- * Parents had access to all available, relevant, accurate information (only 7 parents asked for further information not previously addressed, indicating that the information was comprehensive).
- * The readability level of the written discharge advice (School Year 7-8, age group 12-14 years) allowed 100% comprehension of the material (SMOG Formula).
- * The discharge advice was concise and clearly written.
- * Explanations were given by the nurse whenever the parent asked for them.
- * The majority of parents (98%) were satisfied that adequate information had been supplied.

- * 97% of parents felt they fully understood the discharge advice.

These factors may have contributed to decreased confusion and increased confidence ultimately leading to little or no parental anxiety.

4.3 LIMITATIONS OF THE STUDY

The study was carried out in only one hospital. In order to get sufficient numbers in the time available, the study population was not randomized. The data were collected over a twenty week period, from August to December. This did not bias the results as the data that were collected were not affected by the time of year. The number of subjects available may have been affected by seasonal changes in the occurrence of tonsillectomies performed.

Because this was a descriptive type study it is not known what the effect of giving no discharge advice might have been. The nurses were primed to give the information and it is not known if the outcome was attributable to the nurse giving the information because the absence of it was not being studied.

It can only be assumed that the nurse was accurate and conscientious when recording data and that the parent did not seek advice from other sources such as friends, or other staff that may be unaware of the study (ie. doctor, receptionist), or from books. The surgeon gave some discharge advice to the parent when making a pre-discharge visit but this would not have affected the study results as the advice was given after the questionnaire was answered.

The readability level of the Discharge Instructions and the questionnaire was estimated to be at approximately Grade 7. The desired readability level was stated as being at the Grade 4 level and it is not known how the difference in the desired and actual readability level affected the final results.

In this study, anxiety was measured as the parent's individual, personal estimation of how confident/anxious the parent felt about caring for the child at home following discharge from hospital. This was thought to be justified as anxiety was identified only as an influencing variable. However, it may have been more valuable to the study if parental anxiety had been measured using the State-Trait Anxiety Inventory (STAI) as explained by Hibbard *et al.* (1979). This may have given a more detailed assessment of parental anxiety allowing the researcher to identify a possible correlation between anxiety and level of knowledge.

Parent's level of understanding of the discharge advice, given in both verbal and written form, was measured prior to discharge of the child from hospital. While this measurement of parents' knowledge was informative, it may be that it would have been appropriate to test parent's prior knowledge of the home care needed for a child having a tonsillectomy. This would have given an indication as to whether the parent would be learning anything new from the discharge advice. In this study it was assumed that when the parent answered "No" to the question "Have you a child that has already had their tonsils or adenoids out" that the parent would have no knowledge of the kind of care the child should have at home following discharge from hospital. In fact, even though the parent may not have a child who previously had a tonsillectomy or adenoidectomy, the parent's life experiences may have

provided the parent with some knowledge that could be applied to specific problem situations arising at home following the child's discharge from hospital.

4.4 RECOMMENDATIONS FOR CLINICAL PRACTICE

Although the results of this study are not generalizable to all parents caring for children at home following post-operative discharge from hospital, and therefore should be cautiously interpreted, they do illustrate an important point - that parents understanding of discharge advice cannot be taken for granted. It seems feasible to recommend the implementation of a discharge education/instruction programme aimed at paediatric patients' parents. This would be congruent with the nursing process as it would be based on an initial assessment and analysis of parent's individual, discharge education needs. It would involve planning and implementation of instructions to meet the parents education needs and an evaluation of the knowledge gained from the instruction programme.

Even though this study does not indicate that there is an increase in parents level of knowledge when discharge advice is given on Day 1 at admission, rather than on Day 3 prior to discharge, if a parent education programme was to be implemented it would allow more time for the nurse to assess, analyze, plan and implement the programme if it was begun on Day 1, on admission of the paediatric patient to the ward. Evaluation of the effectiveness of the teaching programme should be carried out before discharge, allowing sufficient time for correction of misunderstandings and for repeat instructions to be given if specific areas of knowledge deficit are identified.

4.5 RECOMMENDATIONS FOR FURTHER RESEARCH

The primary purpose of this study was to evaluate parents' level of understanding of discharge advice and although results indicated that parents had a high level of understanding there is a need for replication of this study with a larger sample size.

As the results of this study are not generalizable to all parents caring for children at home following discharge from hospital, and parents caring for children at home who have had operations other than tonsillectomies may have different educational needs, it seems feasible to recommend that studies be carried out using various patient/parent groups. Children having various operations require different home care and these studies may indicate whether level of understanding is affected by type of operation performed and kind of home care needed.

In any further studies of this nature it seems appropriate to recommend that pre-testing of parents' knowledge be carried out to determine how much parents already know before any teaching programme is implemented. This may be a useful indication of which method of teaching would be suitable for the individual parent, for example, written instructions, demonstration and practice, audiovisual instruction packages, etc. Post-testing, prior to discharge, may indicate how much the parent learned and which piece(s) of information need reinforcement or further explanation. Post-testing at a set interval following discharge may indicate how the parent applied his/her knowledge to caring for the child at home and whether the

parent's level of understanding as estimated prior to discharge was a useful indication of the parent's ability to care for the child at home.

There is a need to develop a tool to assess parents prior knowledge of the post-operative home care necessary for paediatric tonsillectomy patients. By assessing prior knowledge it should be possible to identify parents' individual, educational needs. By focusing on these needs and taking into account the parents' perception of their importance, it may be possible have a greater consistency of effectiveness of discharge instructions. If parental understanding of discharge instructions is high then this may prove to be an important factor in reducing the risk of complications arising at home following discharge.

An important consideration in any further research should be to estimate the readability levels of written parent education materials. All written materials for parent use should be evaluated to see if the material is at a level that allows the average, individual parent to read with 100% comprehension, that is, at age level 12-14 years, Year 7-8 (SMOG formula). By evaluating readability levels of written patient education materials it may be possible to improve their nature and design thus facilitating increased parental understanding and increased overall effectiveness of the parent education programme.

In any further studies it may be appropriate to use the State-Trait Anxiety Inventory (STAI) as explained by Hibbard *et al.* (1979). The parents general disposition towards anxiety (trait anxiety) could be measured on arrival in the child's ward, prior to being given any discharge advice. The parents State anxiety could be

measured initially at the same time as the Trait anxiety and again prior to discharge and at a set interval following discharge. This would show how anxious the parent was at those given moments and may allow a more detailed correlation between the parents anxiety state and knowledge. It may indicate whether parent anxiety is increased or decreased after being given discharge information and whether anxiety was high or low after applying the discharge information to caring for the child at home.

4.6 CONCLUSION

Patient education has been recognized as an important nursing function (Cagan and Meier, 1983; Hibbard *et al.*, 1979; Johnson *et al.*, 1988; Grady *et al.*, 1988; Garding *et al.*, 1988; Haskins, Merrill and Bailey, 1990) and human learning as a complex process (Bloom, 1956; Rogers, 1969; Young, 1986; Swezey and Swezey, 1976).

Nurses are generally concerned about the quality of nursing care their patients receive and this envelopes continuity of care for the discharged patient. A part of ensuring continuity of care for the paediatric patient is the giving of discharge advice, by the nurse, to the parent to enable him/her to care for the child at home following discharge from hospital. Nurses providing discharge education/instruction for the parents of paediatric patients must have some method of evaluating parents understanding of it. Only if the instructions are fully understood is the possibility increased of the parent effectively applying it to providing optimal care for the child at home following discharge.

Therefore it is important to evaluate the parent's level of understanding of the discharge advice to see how much information can be recalled and comprehended. The nurse will then know if an individual parent has a knowledge deficit which needs to be re-addressed before the child is discharged from hospital. The nurse should feel confident that if a parent has a high level of understanding of the discharge advice then he/she will have knowledge available to apply to caring for the child at home.

The primary purpose of this study was to evaluate parents level of understanding of discharge advice. The assumptions that (1) education increases knowledge, and (2) patients benefit from education provided the basic foundation for this study.

In this study the majority of parents (97%) thought they fully understood the discharge advice. This was reflected by the results indicating that 77% of parents had a high level of understanding, scoring between 55-100% correct answers on the questionnaire.

Hypothesis (1) that there is a relationship between the parent's level of understanding and the effects of time was not supported by the data. There was no evidence to suggest that the day on which the parent asked for advice had any effect on level of knowledge.

Hypothesis (2) that there is a relationship between the parent's level of understanding and the asking for and receiving of extra information was supported

in part in that, with three out of nine questions, there was a significant increase in knowledge when parents asked for extra information, however, parents asking for extra advice could not be accepted as consistently affecting knowledge.

Hypothesis (3) that there is a relationship between the parent's level of understanding and their (a) occupation, (b) level of education and (c) anxiety level is reported as follows:

- (a) Parent's occupation was accepted as having an effect on knowledge but significant differences were not found between all groups.
- (b) Parent's level of education was rejected as being an influencing factor in this study. This was thought to be due to the readability level of the discharge instructions (School Year 7-8, age group 12-14 years using the SMOG formula) allowing parents to have 100% comprehension of the written material.
- (c) Parent's anxiety level was rejected as being an influencing factor in this study. Anxiety was only measured as parents' self-estimation of their anxiety level and as results showed that the majority of parents (98%) were satisfied that they had been given adequate discharge advice for the child's home care needs, parent satisfaction with the advice they were given may have had the effect of keeping parent anxiety level at a minimum.

Suggestions for further study are replication of this study using a larger sample size, pre- and post-testing of knowledge and a more detailed assessment of parents' anxiety level.

In conclusion, even though these results are not generalizable to all parents caring for children at home following discharge from hospital, they do illustrate the point that parents' understanding of discharge advice cannot be taken for granted. If the nurse is to feel confident that she has provided for continuity of care for her patient, then parents' understanding of discharge advice must be evaluated and any knowledge deficit re-addressed.

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APPENDIX A

QUESTIONNAIRE

Dear Parent,

I am conducting a study at the Princess Margaret Hospital for Children to find out if the discharge advice given to you is sufficient to meet your needs after you have taken your child home.

I request your participation in the study. If you do not wish to take part, wish to withdraw at any time during the study, or withhold any information, you may. Be assured that your child has received the highest standard of care during his/her stay in hospital.

Please sign the form provided if you agree to participate in the study. Do not put your name on any study document. The nurse will not record your name on any document used in the study. Your answers will be anonymous.

There are no risks to you or your child if you take part in the study. The potential benefits are that the needs of a parent regarding discharge advice will be identified. This information may be used to improve the standard of home care given.

Read each question carefully before answering.

With some questions you may need to indicate your answer by placing a tick [✓] in the appropriate box. Please do not refer to the written discharge advice to answer the questions.

It may take you 15-20 minutes to complete the questionnaire. If you require more information please contact the researcher, Sr Howard, on telephone number 350 5265.

1. What kind of food and drink will you give your child to prevent complications and promote healing over the first 7-10 days after he/she is discharged from hospital?

2. What medicine will you give your child and how often if he/she has pain during the first 7-10 days after leaving hospital?

3. On which part of the head will you look for bleeding that may occur after you have taken your child home?

4. Between which days may bleeding occur after you have taken your child home?

5. What are the signs of bleeding (other than seeing blood) that you should look out for?

6. When should your child return to school?

7. Where should you allow your child to play during the first 3-5 days after you take him/her home?

8. What sports will you let your child take part in when you take him/her home after the operation?

9. After the operation where may your child say he/she feels discomfort or pain?

10. What will you do if your child has heavy bleeding that does not stop within a few minutes?

Please tick the box [✓] as appropriate.

11. Was the written information sheet given to you?

YES [] NO []

12. Did you ask for any further information?

YES [] NO []

13. If YES, was the information requested on :

DAY 1. The day your child came into hospital? []

DAY 2. The day your child had his/her operation? []

DAY 3. The day your child left hospital ? []

14. Did you feel that adequate information was given to you by the nurse?

YES [] NO []

15. Was the information given to you:

Fully understood []

Partly understood []

Not understood []

16. Are you the same parent/person that brought your child to hospital for his/her operation?

YES [] NO []

17. What is your relationship to the child?

MOTHER ☐

FATHER ☐

OTHER (please specify) _____

18. What is your occupation?

19. If you have a partner, what is your partner's occupation?

20. Please indicate which years at school you completed

Before Year 10 ☐

Year 10 ☐

Year 11 ☐

Year 12 ☐

21. Are you or have you been involved in any further education? Please indicate.

College or University Diploma ☐

Bachelor Degree ☐

Other, please state _____

22. Please indicate how confident you feel about caring for your child at home following discharge.

Very confident []

Moderately confident []

Slightly confident []

Not confident []

If you are unsure about caring for your child at home following discharge please ask to speak to the clinical nurse specialist on your ward or feel free to contact the researcher on telephone number 350 5265.

Thank you for participating in this study and taking the time to answer the questionnaire before leaving the hospital with your child.

APPENDIX B

DISCHARGE INSTRUCTIONS FOR A CHILD HAVING ADENOIDECTOMY AND TONSILLECTOMY

1. For the first 7-10 days following your child's operation it is important to promote healing and prevent complications so give your child a variety of foods to eat, (eg. toast, meat, cereals, vegetables). Give clear fluids to drink such as water and cordial.
2. If your child says he/she has pain such as a sore throat or earache you may give him/her Panadol - Not Aspirin or Disprin as they may cause bleeding. Give this medicine at four hourly intervals and preferably before meals. Do not exceed six doses in any 24 hour period and if the pain does not decrease over the first 48-72 hour period see your own general practitioner.
3. Look out for any bright red blood that may come from the mouth or nose. If bleeding occurs at any time and does not stop within a few minutes or he/she vomits blood please return with him/her to the emergency dept.
4. Do not take your child out of the Metropolitan area before your next doctors appointment in case your child has some bleeding and you need to return quickly to the hospital.
5. Your child should not be allowed to go to school or play sport for 7-10 days or until the next doctor's appointment.

6. Your child should play at home where is quiet and out of hot weather for the first 3-5 days at home.
7. Your child should not be allowed to go swimming for 7-10 days.
8. If your child complains of earache or a sore throat after this operation do not worry, this is a normal response and will settle down. You may give your child Panadol as directed earlier.

Your child may have foul smelling breath between the 3-10th day following his/her operation. Do not worry, this is considered "normal".

APPENDIX C

NURSES EXTRA INFORMATION SHEET

1. Diet should be normal ie. toast, meat, cereals, vegetables - to debride the tonsil bed. Give clear fluids to drink such as water, cordial. Do not give citrus fruit juice drinks, such as orange juice, for the first 48 hours following the operation. The acidic juice may cause the child some distress when flowing over the exposed tonsil bed during swallowing.
2. Aspirin - Coagulation time of the blood is increased with prolonged use of Aspirin/Disprin.

Hypoprothrombinaemia occurs in doses over 5g/day (Laurence and Bennett, 1987, p.284).

Panadol is effective for pain relief where aspirin may cause haemorrhage (Laurence and Bennett, 1987, p.282).

3. Between the 5th and 7th days the clot begins to dissolve and bleeding may occur. Other indications of fresh bleeding may be: "frequent swallowing, clearing his/her throat or increased restlessness" (Pillitteri 1981, p.725). If profuse bleeding occurs (ie. a sudden gush of bright red blood that does not stop within a few minutes) parents should return with the child to the Emergency Dept.

4. Staying within the Metropolitan area will insure reasonable access to the hospital Emergency Dept if the child develops any complications such as haemorrhage.
5. There is increased risk of infection when:
 - (a) mixing with larger groups of children and
 - (b) being out in hot weather.
6. Keep the child quiet, as strenuous physical activity increases the risk of haemorrhage.
7. Swimming is not permitted for 7-10 days as there is a risk of infection at the surgical site.
8. The eustachian tube which forms a passage between the middle ear and the back of the mouth is short in a child and any discomfort related to soreness of the throat may be described as earache. This is a normal response and you may give Panadol if needed for the same reason as given in section 2.

APPENDIX D

QUESTIONNAIRE

Dear Parent,

I am conducting a study at the Princess Margaret Hospital for Children to find out if the discharge advice given to you is sufficient to meet your needs after you have taken your child home.

I request your participation in the study. If you do not wish to take part, wish to withdraw at any time during the study, or withhold any information, you may. Be assured that your child has received the highest standard of care during his/her stay in hospital.

Please sign the form provided if you agree to participate in the study. Do not put your name on any study document. The nurse will not record your name on any document used in the study. Your answers will be anonymous.

There are no risks to you or your child if you take part in the study. The potential benefits are that the needs of a parent regarding discharge advice will be identified. This information may be used to improve the standard of home care given.

Read each question carefully before answering.

With some questions you may need to indicate your answer by placing a tick [✓] in the appropriate box. Please do not refer to the written discharge advice to answer the questions.

It may take you 15-20 minutes to complete the questionnaire. If you require more information please contact the researcher, Sr Howard, on telephone number 350 5265.

1. What kind of food and drink will you give your child to prevent complications and promote healing over the first 7-10 days after he/she is discharged from hospital?

2. What medicine will you give your child and how often if he/she has pain during the first 7-10 days after leaving hospital?

3. On which part of the face will you look for bleeding that may occur after you have taken your child home?

4. Between which days may bleeding occur after you have taken your child home?

5. When should your child return to school?

6. Where should you allow your child to play during the first 7-10 days after you take him/her home?

7. What sports will you let your child take part in when you take him/her home after the operation?

8. After the operation where may your child say he/she feels discomfort or pain?

9. What will you do if your child has heavy bleeding that does not stop within a few minutes?

Please tick the box [✓] as appropriate.

10. Was the written information sheet given to you?

YES [] NO []

11. Did you ask for any further information?

YES [] NO []

12. If YES, was the information requested on :

DAY 1. The day your child came into hospital? []

DAY 2. The day your child had his/her operation? []

DAY 3. The day your child left hospital ? []

13. Did you feel that adequate information was given to you by the nurse?

YES [] NO []

14. Was the information given to you:

Fully understood []

Partly understood []

Not understood []

15. Are you the same parent/person that brought your child to hospital for his/her operation?

YES [] NO []

16. What is your relationship to the child?

MOTHER ☐

FATHER ☐

OTHER (please specify) _____

17. What is your occupation?

18. If you have a partner, what is your partner's occupation?

19. Please indicate which years at school you completed

Before Year 10 ☐

Year 10 ☐

Year 11 ☐

Year 12 ☐

20. Are you or have you been involved in any further education? Please indicate.

College or University Diploma ☐

Bachelor Degree ☐

Other, please state _____

21. Please indicate how confident you feel about caring for your child at home following discharge.

Very confident	[]
Moderately confident	[]
Slightly confident	[]
Not confident	[]

If you are unsure about caring for your child at home following discharge please ask to speak to the clinical nurse specialist on your ward or feel free to contact the researcher on telephone number 350 5265.

Thank you for participating in this study and taking the time to answer the questionnaire before leaving the hospital with your child.

APPENDIX E**DISCHARGE INSTRUCTIONS FOR A CHILD HAVING
ADENOIDECTOMY AND TONSILLECTOMY**

1. For the first 7-10 days following your child's operation it is important to promote healing and prevent complications so give your child a variety of foods to eat (eg. toast, meat, cereals, vegetables). Give a variety of fluids to drink. Do not give citrus fruit drinks, such as orange juice during the first two days.
2. If your child says he/she has pain such as a sore throat or earache you may give him/her Panadol. Do not give Aspirin or Disprin as they may cause bleeding. Give this medicine at four hourly intervals and preferably before meals. Do not exceed six doses in any 24 hour period. If the pain does not decrease over the first 2-3 day period see your own Doctor.
3. Between the 5th and 7th days the clot begins to dissolve and bleeding may occur. Look out for any bright red blood that may come from the mouth or nose. If bleeding occurs at any time and does not stop within a few minutes or he/she vomits (ie. is sick) blood please return with him/her to the emergency dept.
4. Do not take your child out of the Metropolitan area until after your next doctors appointment, except with consent from the ward, in case your child has some bleeding and you need to return quickly to the hospital.

5. Your child should not be allowed to go to school or play sport for 7-10 days or until after the next doctors appointment.
6. Your child should play at home where it is quiet and out of hot weather for the first 7-10 days at home.
7. Your child should not be allowed to go swimming in a swimming pool for the first 7-10 days at home.
8. If your child complains of earache or a sore throat do not worry, this is a normal response and will settle down. Give your child Panadol as directed earlier.

APPENDIX F**NURSES EXTRA INFORMATION SHEET**

1. Diet should be normal ie. toast, meat, cereals, vegetables - to debride the tonsil bed. A normal diet promotes chewing which exercises the facial and neck muscles ultimately leading to decreased pain sensation. Do not give citrus fruit juice drinks, such as orange juice, for the first 48 hours following the operation. The acidic juice may cause the child some distress when flowing over the exposed tonsil bed during swallowing.

2. Aspirin - Coagulation time of the blood is increased with prolonged use of Aspirin/Disprin.

"Panadol is effective for pain relief where aspirin may cause haemorrhage" (Laurence and Bennett, 1987, p.282).

3. Between the 5th and 7th days the clot begins to dissolve and bleeding may occur. Other indications of fresh bleeding may be: "frequent swallowing, clearing his/her throat or increased restlessness" (Pillitteri 1981, p.725). If profuse bleeding occurs (ie. a sudden gush of bright red blood that does not stop within a few minutes) parents should return with the child to the Emergency Dept.

4. Staying within the Metropolitan area will insure reasonable access to the hospital Emergency Dept if the child develops any complications such as haemorrhage. If the family live in a country area they should stay within easy reach of their local emergency hospital or local doctor.
5. There is increased risk of infection when:
 - (a) mixing with larger groups of children and
 - (b) being out in hot weather.
6. Keep the child quiet, as, strenuous physical activity increases the risk of haemorrhage.
7. Swimming is not permitted in swimming pools for 7-10 days as there is a risk of infection at the surgical site.
8. Following tonsillectomy the pain or discomfort felt by children, described as soreness of the throat or earache, is referred pain as the nerve endings are left exposed in the tonsil bed. As healing takes place pain sensation decreases. This is a normal response and panadol may be given if needed for the same reason as given in section 2.

APPENDIX G

TESTS USED TO ASSESS THE READABILITY OF THE WRITTEN DISCHARGE INSTRUCTIONS AND QUESTIONNAIRE

Flesch Formula

Method of Analysis

1. For short selections, test the entire selection. For longer selections, test at least three randomly selected samples of 100 words each. Do not use introductory paragraphs as part of the sample. Start each sample at the beginning of a paragraph.
2. Determine the average sentence length by counting the number of words in the sample and dividing by the number of sentences. Count as a sentence each independent unit of thought that is grammatically independent, i.e. if its end is punctuated by a period, question mark, exclamation point, semicolon or colon.
3. Determine the word length by counting all the syllables in the sample as if reading the words aloud. Divide the syllables by the number of words in the sample and multiply by 100.

4. Apply the formula

$$RE = 206.835 - 1.015SL - 0.846WL$$

where RE is the reading ease score, SL is the average sentence length in words, and WL is the average word length measured as syllables per 100 words.

The calculated reading ease score (RE) ranges from 100 (very easy to read) to zero (unreadable) with interpretations in between, as shown in Table 1.

Table 1:
Interpretation of the Flesch Reading Ease Score

Reading Ease	Grade	Description of Style	Syllables per 100 Words	Average Sentence Length
90-100	5	Very easy	123	8
80-90	6	Easy	131	11
70-80	7	Fairly easy	139	14
60-70	8-9	Standard	147	17
50-60	10-12	Fairly difficult	155	21
30-50	College	Difficult	167	25
0-30	College graduates	Very difficult	192	29

(Spadero, 1983, pp.274-275)

Fog Formula by Gunning

Method of Analysis

1. Count 100 words in succession (W). If the selection is long, take several samples of 100 words from throughout the piece and average the results.
2. Count the number of complete sentences. If the 100th word falls past the midpoint of a sentence, include this sentence in the count (S).
3. Divide the words (W) by the number of sentences (S).
4. Count the number of words having three or more syllables (A), but do not count (a) verbs ending in "ed" or "es" that make the word have a third syllable, (b) capitalized words, or (c) combinations of simple words, such as "butterfly".
5. Apply the formula

$$GL = (W/S + A) \times 0.4$$

where GL is the grade level, W is the number of words (usually 100), S is the number of sentences, and A is the number of words having three or more syllables. (Spadero, 1983, pp.275)

SMOG Formula by McLaughlin

Method of Analysis

1. Count 10 consecutive sentences near the beginning, 10 in the middle and 10 near the end of the selection to be assessed. Count as a sentence each independent unit of thought that is grammatically independent, i.e. if its end is punctuated by a period, question mark, exclamation point, semicolon or colon.
2. In the 30 randomly selected sentences, count every word of three or more syllables. Any string of letters or numerals beginning or ending with a space or punctuation mark should be counted if you can distinguish at least three syllables when you read it aloud in context. If a polysyllabic word is repeated, count each repetition. Do not count verbs ending in "ed" or "es" that make the word have a third syllable.
3. Estimate the square root of the number of polysyllabic words counted. This is done by taking the square root of the nearest perfect square. For example, if the count is 95, the nearest perfect square is 100, which has a square root of 10. If the count lies roughly between two perfect squares, choose the lower number. For example, if the count is 110, take the square root of 100 rather than that of 121.
4. Add 3 to the estimated square root. This gives the SMOG grade level, which is the reading grade level that a person must have reached if he is to fully understand the text assessed. (Spadero, 1983, pp.275)

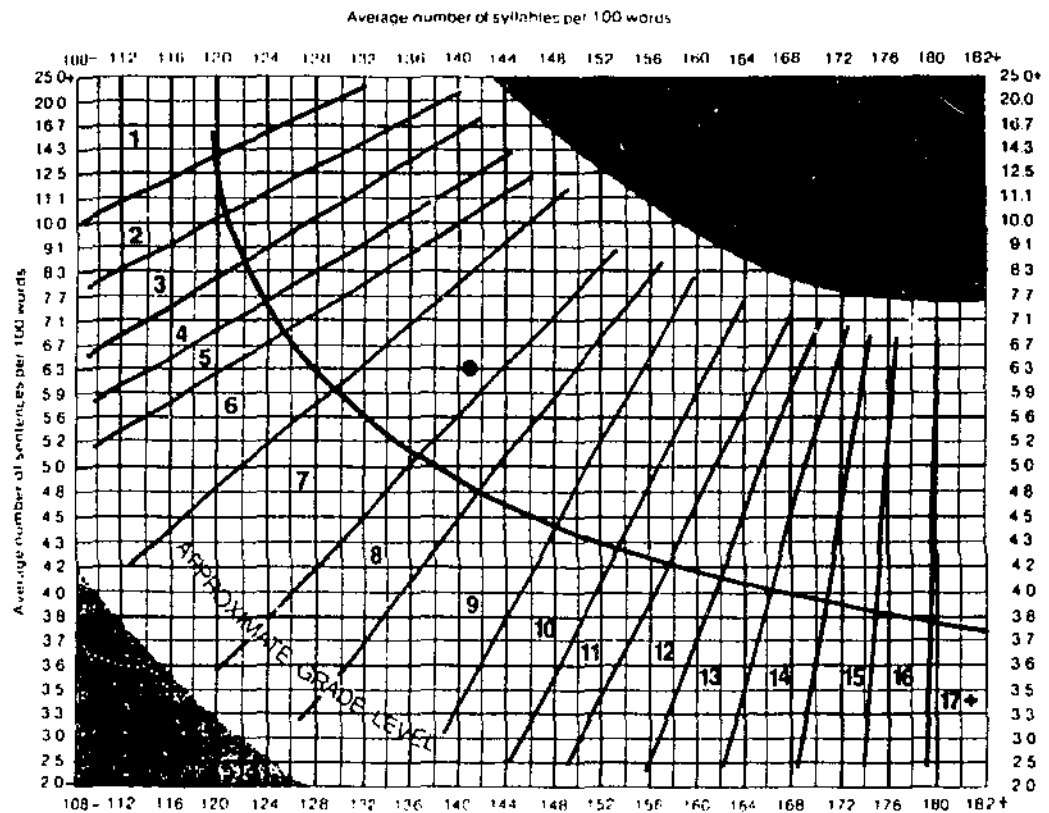


FIGURE 1: Graph for Estimating Readability - Extended
(by Edward Fry, Rutgers University Reading Center, New Brunswick, N.J. 08904)

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Expanded Directions for Working Readability Graph

1. Randomly select three (3) sample passages and count out exactly 100 words each, beginning with the beginning of a sentence. Do count proper nouns, initializations, and numerals.
2. Count the number of sentences in the hundred words, estimating length of the fraction of the last sentence to the nearest one-tenth.

3. Count the total number of syllables in the 100-word passage. If you don't have a hand counter available, an easy way is to simply put a mark above every syllable over one in each word, then when you get to the end of the passage, count the number of marks and add 100. Small calculators can also be used as counters by pushing numeral 1, then push the + sign for each word or syllable when counting.
4. Enter graph with *average* sentence length and *average* number of syllables; plot dot where the two lines intersect. Area where dot is plotted will give you the approximate grade level.
5. If a great deal of variability is found in syllable count or sentence count, putting more samples to into the average is desirable.
6. A word is defined as a group of symbols with a space on either side; thus, *Joe*, *IRA*, *1945*, and *&* are each one word.
7. A syllable is defined as a phonetic syllable. Generally, there are as many syllables as vowel sounds. For example, *stopped* is one syllable and *wanted* is two syllables. When counting syllables for numerals and initializations, count one syllable for each symbol. For example, *1945* is four syllables, *IRA* is three syllables, and *&* is one syllable. (Fry, 1977, pp.249)

APPENDIX H

CHECKLIST FOR THE GIVING OF DISCHARGE ADVICE

		Day 1	Day 2	Day 3
1.	Normal diet (e.g. toast, meat, cereals, vegetables) is important to promote healing and prevent complications.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	For pain give Panadol only - not Aspirin or Disprin.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	Observe for any fresh bleeding from the nose or mouth.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	Do not travel out of the Metro area before the next doctor's appointment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	No school or sports for 7-10 days or until the next doctor's appointment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. Keep the child quiet and out of hot weather for the first few days at home. ☐ ☐ ☐
7. Swimming is not permitted because of the chance of infection to the surgical area. ☐ ☐ ☐
8. The child may complain of earache following this operation. Give Panadol if needed. ☐ ☐ ☐

In this section please record additional questions asked by the parent and answers given by the nurse.

Q. _____

A. _____

Q.

A.

Q.

A.

APPENDIX I

EXPLANATION OF PROCEDURE TO BE CARRIED OUT BY THE NURSE

1. Day 1. On admission - give the written Discharge Instruction sheet to the parent and ask the parent to read it carefully, while remaining with him/her.
2. Ask the parent if he/she wishes to ask any questions and answer them using the extra information sheet.
3. No extra information should be given unless the parent asks for it.
4. If extra information relative to the discharge advice is given at any time tick [✓] the appropriate box on the checklist to show which piece of information needed more explanation and on what day it was given. If information is requested regarding discharge advice not covered in the written information sheet or in the extra information sheet you should refer to the clinical nurse specialist (CNS) on the ward for advice. Record the questions asked by the parent and the answers given by you on the checklist sheet in the space provided.
5. Do not put the name of the patient or parent on any of the study documentation.
6. Contact with the investigator, Sister Howard, is by Telephone: Tel No 350.5265 (home) or Theatre Reception (PMH).

Thank you for your assistance with the collection of data for this study.

APPENDIX J**CONSENT FORM**

I agree to participate in the study on discharge advice. I am aware that there are no risks to myself or to my child by taking part in the study and that I may withdraw from the study at any time.

Parent's signature: _____

APPENDIX K

**CONTINGENCY TABLES 1-9 FOR χ^2
3×2 ANALYSIS ON QUESTIONS 1-9**

TABLE 1:
Contingency Table for χ^2
3×2 Analysis for Question 1

	Parent Asked for Extra Information on			
	Day 1	Day 2	Day 3	Total Row
Correct	18 (17.0833)	5 (5.125)	18 (18.7916)	41 total correct
Incorrect	2 (2.9166)	1 (0.875)	4 (3.2083)	7 total incorrect
Total Columns	20 Total Day 1	6 Total Day 2	22 Total Day 3	48 Total Answers

TABLE 2:
Contingency Table for χ^2
3×2 Analysis for Question 2

	Parent Asked for Extra Information on			
	Day 1	Day 2	Day 3	Total Row
Correct	14 (14.7446)	4 (3.5106)	15 (14.7446)	33 total correct
Incorrect	7 (6.2553)	1 (1.4893)	6 (6.2553)	14 total incorrect
Total Columns	21 Total Day 1	5 Total Day 2	21 Total Day 3	47 Total Answers

TABLE 3:
Contingency Table for χ^2
3×2 Analysis for Question 3

	Parent Asked for Extra Information on			
	Day 1	Day 2	Day 3	Total Row
Correct	22 (20.9302)	4 (5.0233)	10 (10.0465)	36 total correct
Incorrect	3 (4.0698)	2 (0.9767)	2 (1.9535)	7 total incorrect
Total Columns	25 Total Day 1	6 Total Day 2	12 Total Day 3	43 Total Answers

TABLE 4:
Contingency Table for χ^2
3×2 Analysis for Question 4

	Parent Asked for Extra Information on			
	Day 1	Day 2	Day 3	Total Row
Correct	8 (7.8140)	1 (2.2791)	5 (3.9070)	14 total correct
Incorrect	16 (16.1860)	6 (4.7209)	7 (8.0930)	29 total incorrect
Total Columns	24 Total Day 1	7 Total Day 2	12 Total Day 3	43 Total Answers

TABLE 5:
Contingency Table for χ^2
3×2 Analysis for Question 5

	Parent Asked for Extra Information on			
	Day 1	Day 2	Day 3	Total Row
Correct	18 (16.25)	4 (4.875)	17 (17.875)	39 total correct
Incorrect	2 (3.75)	2 (1.125)	5 (4.125)	9 total incorrect
Total Columns	20 Total Day 1	6 Total Day 2	22 Total Day 3	48 Total Answers

TABLE 6:
Contingency Table for χ^2
3×2 Analysis for Question 6

	Parent Asked for Extra Information on			
	Day 1	Day 2	Day 3	Total Row
Correct	15 (15)	7 (7.5)	13 (12.5)	35 total correct
Incorrect	3 (3)	2 (1.5)	2 (2.5)	7 total incorrect
Total Columns	18 Total Day 1	9 Total Day 2	15 Total Day 3	42 Total Answers

TABLE 7:
Contingency Table for χ^2
3×2 Analysis for Question 7

	Parent Asked for Extra Information on			
	Day 1	Day 2	Day 3	Total Row
Correct	18 (17.0833)	5 (5.125)	18 (18.7916)	41 total correct
Incorrect	2 (2.9167)	1 (0.875)	4 (3.2083)	7 total incorrect
Total Columns	20 Total Day 1	6 Total Day 2	22 Total Day 3	48 Total Answers

TABLE 8:
Contingency Table for χ^2
3×2 Analysis for Question 8

	Parent Asked for Extra Information on			
	Day 1	Day 2	Day 3	Total Row
Correct	9 (10.3783)	3 (3.8919)	12 (9.7297)	24 total correct
Incorrect	7 (5.6216)	3 (2.1081)	3 (5.2702)	13 total incorrect
Total Columns	16 Total Day 1	6 Total Day 2	15 Total Day 3	37 Total Answers

TABLE 9:
 Contingency Table for χ^2
 3×2 Analysis for Question 9

	Parent Asked for Extra Information on			
	Day 1	Day 2	Day 3	Total Row
Correct	21 (20.4878)	5 (5.1219)	9 (9.3902)	35 total correct
Incorrect	3 (3.5122)	1 (0.878)	2 (1.6097)	6 total incorrect
Total Columns	24 Total Day 1	6 Total Day 2	11 Total Day 3	41 Total Answers