

**EFFECT OF PREOPERATIVE TEACHING ON
POSTOPERATIVE OUTCOME OF PATIENTS
UNDERGOING TRANSSPHENOIDAL
HYPOPHYSECTOMY**

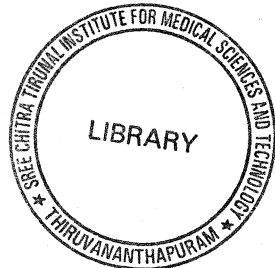
Project Report

Submitted in partial fulfillment of
the requirements for the Diploma in Neuro Nursing

Submitted by

Miss. Anu Johnson

Roll no: 5665



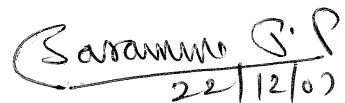
**Sree Chitra Tirunal Institute for Medical Sciences and
Technology , Trivandrum**

October 2007

CERTIFICATE FROM SUPERVISORY GUIDE

This is to certify that Miss. Anu Johnson has completed the project work on Effect of preoperative teaching on postoperative outcome of patients undergoing Transsphenoidal Hypophysectomy under my direct supervision and guidance for the partial fulfillment for the Diploma in Neuro Nursing in the University of Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum.

It is also certified that no part of this report has been included in any other thesis for procuring any other degree by the candidate.


22/12/07

Saramma P. P

Sree Chitra Tirunal Institute for
Medical Sciences and Technology,
Trivandrum-695011

Trivandrum
October 2007

CERTIFICATE FROM CANDIDATE

This is to certify that the project report on Effect of Preoperative Teaching on Postoperative Outcome of Patients Undergoing Transsphenoidal Hypophysectomy is a genuine work done by me at the Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum under the guidance of Saramma P.P

It is also certified that this work has not been presented previously to any university for award of degree, diploma or other recognition

Trivandrum
October 2007

Miss. Anu Johnson
Roll No. 5665
Sree Chitra Thirunal Institute for
Medical Sciences and Technology
Trivandrum-695011

APPROVAL SHEET

This is to certify that Miss. Anu Johnson bearing Roll No.5665, has been admitted to the Diploma in Neuro Nursing in January 2007 and she has undertaken the project entitled Effect of Preoperative Teaching on Postoperative Outcome of Patients Undergoing Transsphenoidal Hypophysectomy which is approved for the Diploma in Neuro Nursing awarded by the Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum as it is found satisfactory.

Examiners

Guide

Trivandrum
October 2007

Saramma.P.P
Lecturer in Nursing
Sree Chithra Thirunal Institute for
Medical Sciences and Technology
Trivandrum - 695 011

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ABSTRACT

Effect of preoperative teaching on postoperative outcome of patients undergoing transsphenoidal hypophysectomy

Preoperative teaching is an important part of patient care and can prevent complications, as well as promote patient fulfillment during hospitalization. The objectives of this study was to find out the effectiveness of preoperative teaching on postoperative outcome of patients undergoing transsphenoidal hypophysectomy. The sample size was 32. The experimental group (n=12) was selected consecutively during August to October 2007 and the control group was selected retrospectively during June – July 2007. Self-prepared tool was used for the data collection. Planned individual health teaching given prior to surgery regarding preoperative preparations and postoperative experiences using self prepared pamphlet. Post test was done on the day of transfer out from the I.C.U. Comparison of experimental and control group indicates the major complications reported in both group was C.S.F rhinorrhea and the minor problem was headache. The results support the addressing information provision on postoperative experience preoperatively appears to produce an improvement in postoperative outcome of the patient. Postoperative outcome of experimental group was statistically better than the postoperative outcome of control group.

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LIST OF ABBREVIATIONS

C.S.F	Cerebro Spinal Fluid
D.I	Diabetes Insipidus
A.C.T.H	Adreno Cortico Tropin Hormone
N.S.I.C.U	Neuro Surgical Intensive Care Unit
N.S.W	Neuro Surgical Ward
T.S	Transsphenoidal Surgery

INTRODUCTION

CHAPTER I

INTRODUCTION

The development of neuro surgery has taken place primarily during the past century. British surgeons were among the first to become involved with the new field and they guided neuro surgery through its infancy in the last two decades of the 19th century. Neurological surgery had begun almost a quarter of a century earlier when William Macewen in Glasgow removed the first brain tumor successfully and when Victor Horsley similarly removed the first tumor of the spinal cord in 1886 (Wilkins & Rengachary 1985). Neuro surgical procedures are mainly performed for the treatment of cerebral injury, hydrocephalus, vascular repair, tumor removal, tumor or lesion biopsy.

Pituitary adenomas are tumors that occur in the pituitary gland and account for about 7-18% of all intracranial neoplasms (American Brain Tumor Association 1997, as cited in Prather, et al., 2003). Although these are benign lesions, their growth rate is variable and the recurrence is about 10 to 35%. The majority of pituitary tumors are found in the anterior lobe of the pituitary. Tumors in the posterior lobe are rare. Pituitary adenomas are classified as either hormone secreting or nonsecreting tumors. Based on size pituitary tumors can be divided in to microadenomas (< 1c.m diameter) and macro adenomas (> 1c.m diameter).

Transsphenoidal surgery was performed as early as the 1920s. However, because of inadequate lighting and insufficient equipment, the procedure was abandoned and transfrontal craniotomies were performed. Microsurgical equipment and

fluoroscopy have made transsphenoidal surgery the favored approach for tumors within the sella or with moderate supra sellar extension (Esther et al. 1992). This approach is minimally invasive, provides direct visualization of the pituitary area, and avoids some of the risks and complications of craniotomy. In the hands of an experienced neurosurgeon pituitary surgery has extremely low morbidity and mortality rates.

1.1 Background of the study

The transsphenoidal approach to pituitary microadenomas is like any other neurosurgical procedure, accompanied by complications that may jeopardize the safety of the patient and the success of the treatment. The transsphenoidal approach to the pituitary gland was first used in the early years of this century and was originally performed only for the debulking of massive pituitary tumors.

Microsurgery of the pituitary gland was introduced in the early 1960s and the development of its techniques has allowed the selective removal of microadenomas for the treatment of endocrine disorders of the pituitary. Transsphenoidal surgery is often the first line of treatment for most secreting adenomas (Greenberg, 2001, as cited in Gorden, 2007). The modern approach to the sella turcica is very similar to that described originally by Cushing. Although a strict midline oronasal rhinoseptal approach is most commonly used, both the lateral endonasal or the combined oronasal lateral submucosal approaches are suitable in some patients.

Transsphenoidal surgery has many advantages in providing access to the sella turcica. In a medically fit patient, surgery is the treatment of choice for all non secretory pituitary & para pituitary lesions. For secretory tumors surgery offers the possibility of rapid & complete cure. Surgical 'cure' rates have been reported to be over 80% in cases of microadenoma patients with non secretory adenomas as well as all patients with Cushings disease (Post & Muraszko, 1986 as cited in Walter, et al.,1991).

The majority of patients with pituitary adenoma (more than 98%) are approached via the transsphenoidal route. Transsphenoidal surgery was performed as early as the 1920s. The advantages are that no brain retraction is required and that there is an extremely low morbidity and mortality. The transsphenoidal route also provides an exposure that permits separation of the tumor from the normal gland. The adenoma can be resected, leaving the normal gland in place (Walter, et al.,1991).For non prolactin secreting adenomas radiation therapy may be necessary if there is residual tumor or residual hypersecretion.

The clinical presentation is dependent on the hormone that is secreted and structures affected. Hormone secreting tumors can result in conditions such as Cushings disease, acromegaly, impotence ,infertility, amenorrhea and galactorrhea (Chipps et al.,1992, as cited in Walter 1991). Pituitary tumors also can compress the pituitary and cause hyposecretion. Patients also can present with neurological deficits resulting from compression of surrounding structures by the tumor. The

most common deficit is loss of peripheral vision resulting from compression of the optic chiasm (Counsel 1996, as cited in Walter 1991).

Patients undergoing transsphenoidal surgery have complex needs that require expert care and the co-ordination of a multidisciplinary team of health care professionals. In general patients requiring this surgery are cared for in intensive care units. An innovative program of the university of Virginia developed 15 years ago, enabled these patients to be cared for on an acute care unit for entirety of hospitalization (Prather et al., 2003).

1.2 Need and significance of the study

The patient with pituitary tumor undergoing transsphenoidal surgery represents a challenge to all nurses. In most institutions, post-operative care of these patients occurs in the intensive care setting, primarily because of fluid imbalance secondary to diabetes insipidus. Which is a common and potentially dangerous complications of the surgery. Patient must be carefully monitored for postoperative visual loss, hemorrhage, C.S.F leak, and meningitis, signs of pituitary insufficiency and alterations in fluid balance.

The use of transsphenoidal pathway can be a vital tool for critical care nurses in anticipating complications and improving patient outcomes. Complications such as diabetes insipidus and C.S.F leak associated with post transsphenoidal patients may result in prolonged hospitalization and worsened functional outcome. Implementing a transsphenoidal critical pathway for these patients can guide their

care and alert critical care nurses to potential complications and their prevention or treatment (Eisemberg, 1998).

Sree Chitra Tirunal Institute For Medical Sciences and Technology (SCTIMST) is an national importance, It is a tertiary care center for cardiac and neuro patients . This hospital have separate complex for neuro surgery, including Neuro Surgery I.C.U, theatre and ward. A minimum of one operation is done in one week for pituitary adenoma. Table 1.1 shows the number of operated cases of Transsphenoidal Surgery from January 2007 to June 2007 in SCTIMST.

Months	Male	Female	Number of cases	Recurrent cases
January	1	2	3	0
February	2	2	4	0
March	9	3	12	2
April	3	3	6	2
May	2	3	5	3
June	3	5	8	1
Total	20	18	38	8

During the clinical experience, the investigator has noticed that many of these patients were unable to co-operate with the fact of having nasal packing, and prolonged supine position. It is also seen that these patients did not adequately receive special instructions on postoperative experiences. Hence the investigator felt the need to provide preoperative teaching and psychological support to these patients and to conduct a study on effect of preoperative teaching on postoperative out come of patients undergoing transsphenoidal hypophysectomy.

1.3 Statement of the problem

Effect of preoperative teaching on postoperative outcome of patient undergoing transsphenoidal hypophysectomy.

1.4 Objectives of the study

- (1) To find out the effectiveness of pre-operative teaching on post-operative outcome of patients undergoing Transsphenoidal Hypophysectomy.
- (2) To find out relationship between post-operative outcome and selected variables.

1.5 Operational definitions

Transsphenoidal Hypophysectomy : The transsphenoidal hypophysectomy is the surgical removal of the pituitary gland and/or tumor by means of transverse incision made in the Buccal sulcus and the mucoperiosteum elevated from the floor of the nose and the nasal spine with the aid of a surgical microscope.

Preoperative Teaching : Planned individual teaching given by the investigator prior to surgery regarding pre-op preparations and postoperative experience including I.C.U stay, propped-up positioning, nasal pack removal and oxygen inhalation. A health education pamphlet in Malayalam is prepared and used for this study.

Postoperative Outcome: It includes postoperative outcome parameters like length of I.C.U stay, use of analgesic, nasal pack removal, propped-up positioning and occurrence of complications like C.S.F leakage infections and visual disturbance.

1.6 Methodology

Research approach: Comparative study,

Setting: NSICU, NSW of SCTIMST,

Sample size: 30

Sampling: Consecutive sampling

Study design: Experimental study

Data collection: Self prepared questionnaire

Technique: Interview, observation and a review of retrospective and concurrent medical records

1.7 Delimitations

- (a) Sample size was selected from only one institution,
- (b) The patients who know Malayalam,
- (c) Duration is 3 months,
- (d) Control group was selected retrospectively,

1.8 Summary

This chapter deals with introduction, background of the study, need & significance of the study, statement of the problem, definition of terms, objectives of the study, methodology & limitations.

1.9 Organization of the report

Chapter II presents a summary of related studies reviewed, chapter III deals with methodology of this study, chapter IV analysis and interprets the findings and chapter V presents a summary of the study, conclusion, discussion

implementation, limitation and recommendation. The report also includes a selected references and appendices

REVIEW OF LITERATURE

CHAPTER II

REVIEW OF LITERATURE

Quantitative research is typically conducted with in the context of previous knowledge. To build on existing theory or research, the quantitative researcher strives to understand what is already known about a topic. (Burns & Susan 2003)

The overall purpose of a research literature review is to assemble knowledge on a topic.

The literature focusing on post-operative care models for transsphenoidal surgery was reviewed by using Medline. The key search words were out come of transsphenoidal surgery, preoperative teaching, postoperative study about transsphenoidal surgery. The search revealed nursing literature addressing the care of patients undergoing transsphenoidal surgery. The review of literature related to the study is presented in the following sections:

2.1 Studies related to risk factors of complications following transsphenoidal surgery

2.2 Studies related to outcome analysis of transsphenoidal surgery patients

2.3 Studies related to pre-operative teaching in transsphenoidal hypophysectomy patients

2.1. Studies related to risk factors of complications following transsphenoidal surgery

Nishioka et al., (2005) conducted a retrospective study about risk factors of C.S.F rhinorrhea following transsphenoidal surgery. The samples were 200 consecutive cases of transsphenoidal surgery performed by a single surgeon for 168 adenomas and 32 other sellar and parasellar lesions. Intra operative C.S.F leakage was encountered in 38 cases (19.0 %). Its incidence did not correlate to tumor size. Among four micro adenoma cases with C.S.F leak, three were ACTH adenomas. In contrast, post-operative C.S.F rhinorrhea was observed in five cases (2.5%) all following transsphenoidal surgery for adenomas. It was frequently noted in cases with prior transsphenoidal surgery and prior radiotherapy. Two cases that required surgical interventions had received transsphenoidal surgery and radiotherapy previously. This study showed that the risk of post-operative C.S.F rhinorrhea was significantly increased in cases with prior transsphenoidal surgery or radiotherapy or both.

Nemergut et al., (2005) conducted a study on predictors of diabetes insipidus (D.I) after transsphenoidal surgery. The purpose of this study was to elucidate patient and surgery specific risk factors for diabetes insipidus. The peri-operative record of 881 patients who had undergone transsphenoidal microsurgery at the authors institution between January 1995 and June 2001 were reviewed. Among 857 patients with out pre-operative D.I, the overall incidence of immediate post-operative diabetes insipidus was 18.3% with 12.4% of patients requiring treatment

with desmopressin at some point during their hospitalization. An observable intraoperative C.S.F leak was strongly associated with an increased incidence of both transient (33.3%) and persistent (4.4%) diabetes insipidus. Patients with a microadenoma were more likely to suffer transient diabetes insipidus than those harbouring a macroadenoma. Authors concluded that patient with an intraoperative C.S.F leak, a macroadenoma, or craniopharyngioma appeared to have an increased risk of transient diabetes insipidus.

Kelly et al.,(1995) conducted a study on delayed hyponatremia after transsphenoidal surgery in a series of 99 consecutive patients who underwent transsphenoidal surgery for pituitary adenoma, nine patients developed delayed hyponatremia, seven of whom were symptomatic. Of these seven patients four had been discharged from the hospital and required readmission on post operative day seven to nine. In the nine patients who developed hyponatremia, on the average, serum sodium level was began to fall on day four and reached a nadir on day seven (mean serum sodium nadir 123mmol/L). The development of delayed hyponatremia was associated with the presence of a macroadenoma in eight of the nine patients. Seven of the nine patients had serum sodium levels less than 130mmol/L and required treatment. One patient was treated with fluid restriction alone and six were treated with both fluid restriction and intravenous urea therapy. Twenty four and 48 hours after urea administration, serum sodium levels rose by an average of 6 and 10mmol/L, respectively, and at discharge, levels averaged 136 mmol/L. This study showed that intravenous administration of urea provides a rapid

yet safe means of correcting symptomatic hyponatremia when fluid restriction alone is inadequate.

Saekin (2000), conducted a study on pre and post-operative respiratory assessment of acromegalics with sleep-apnea. The samples were all men, aged from 47 to 59 years. Authors described four acromegalic patients with sleep apnea who underwent transsphenoidal surgery. The post-operative sleep study was carried out from the 1st post-op day to the 8th day for one to eight days. Only the worst postoperative result was shown patient I had two operations two year apart oxygen desaturation was 21.8 pre-operatively and 51.9 post-operatively. Pre-op and post-op oxygen desaturation index was 18.1 and 22.2 in patient-II, 21.6 and 22.5 in patient III, and 45.5 and 18.9 in patient IV respectively. Authors concluded that the post-op oxymetric study commonly showed worse results in acromegalics with nasal packing.

Two major potential complications of patients undergoing transsphenoidal resection of pituitary tumor were Diabetes Insipidus, C.S.F leakage and a critical pathway might guide nurses in the prevention, recognition, and treatment of these complications. Eisenburg et al.,(1998).

Fraiola et al., (1999) performed a study in the area of surgical treatment of pituitary adenomas in elderly patients (over 70 years of age). From the author's experience it is a special problem because of the increased rate of peri operative complications and the reduced tolerance of post-operative fluid and electrolyte imbalance. The samples were 11 patients over 70 years of age affected by various histological

types of pituitary micro and macroadenomas. Special care was dedicated to the post-operative treatment in particular to electrolyte imbalances and to the immediate treatment of any pathological variation of these parameters. All the patients recovered well from the operation with an average hospital stay of 20 days. The tumor removal was completed in six cases and partial in the remaining five. With an average follow up of two years authors observed only one case of symptomatic recurrence of the disease. Result of this study showed that transsphenoidal surgery in the elderly is feasible and quite safe in the hands of an experienced team, if special care is devoted to the pre-operative selection of patients and to the post-operative treatment of fluid and electrolyte imbalance.

A study was conducted by Zada et al., (2007) To assess the incidence of symptomatic and occult hyponatremia in patients who had undergone transsphenoidal surgery. Patient who underwent transsphenoidal surgery between the period of 1997 and 2004 had serum sodium levels drawn on an outpatient basis on postoperative day seven. Two hundred forty one patients had routine serum sodium levels drawn as out patients on postoperative day seven. The overall incidence rate of symptomatic hyponatremia in the 241 patients was five percent. The majority of hyponatremic patients (80%) remained asymptomatic, where as 20% became symptomatic. Female patients were more likely to develop hyponatremia than male patients. Fifty two percent of patients who had transient diabetes insipidus early in their postoperative course subsequently developed hyponatremia, compared with 21% of those who did not have diabetes insipidus.

Patient age, tumor type and tumor size did not correlate with development of delayed hyponatremia. Analysis of this study showed that delayed hyponatremia occurred more frequently than was previously suspected in patients who had undergone transsphenoidal surgery, especially in female patients and those who previously had transient diabetes insipidus. The majority of hyponatremic patients remained asymptomatic.

Vanaken., (1997) conducted a retrospective study on possible risk factors of meningitis after transsphenoidal surgery in 228 patients. The incidence of meningitis was 3.1% (7 of 228 cases). Cultures of preoperative specimens from the anterior nasal vestibule in three of seven patients yielded staphylococcus aureus, but none of these patients developed staphylococcus aureus meningitis. Two of three patients with significant preoperative paranasal sinus abnormalities developed meningitis compared with only five of 225 patients with out significant paranasal sinus abnormalities. Three of twenty-two patients with C.S.F leakage developed meningitis compared with 40 of 206 patients with out intra operative C.S.F leakage. Six of seven patients with postoperative C.S.F rhinorrhea and only one of 221 patients with out postoperative C.S.F rhinorrhea developed meningitis. In this study authors concluded that postoperative C.S.F leakage is important risk factors of meningitis after transsphenoidal surgery.

2.2 Studies related to outcome analysis of transsphenoidal surgery

Dusick et al., (2006) conducted a study to describe postoperative questionnaire results in patients after a standard direct endonasal approach, an extended supra sellar endonasal approach, a reoperative transsphenoidal surgery for tumor removal with the operating microscope. A review conducted of 452 consecutive patients who underwent endo nasal surgery from July 1998 through April 2005. Three hundred and six were sent questionnaire and of these 259 (75%) completed them. Nasal packing was placed for 24 hours in the first 95 patients but not in the last 357. Seventy three percentage of patients reported a better experience than expected and eight percent worse than expected. The frequency of rhinological complaints declined from two weeks to three months post surgery ($p<.001$), by three months or more post surgery 67% to 87% of patients had no rhinological complaints and one to two percentage had severe complaints. Of 30 patients with prior sublabial surgery, the endo nasal procedure afforded easier recovery (87%), less pain (80%), better nasal airflow (79%), a shorter hospital stay (3-5 days). Rhinological recovery was typically rapid and relatively complete after direct endonasal transsphenoidal surgery using both standard and extended supra sellar approaches. Compared with the sublabial route, the endonasal approach was associated with less pain, better nasal airflow, and a shorter hospital stay.

Long et al., (1996) conducted a study on surgical outcome after repeated transsphenoidal surgery in acromegaly. The samples were reoperative cases of 16

patients between the period of 1970 and 1991. Reoperation was performed for persistent or progressive acromegaly in 11 patients, visual impairment in four, and disease recurrence in one. The second transsphenoidal surgery induced a greater than 50% decrease of G.H level in 11 patients. Three (19%) of 16 patients were cured according to the author's criteria and remained so after 2, 7, and 20 years. Two more patients had a postoperative basal G.H level of less than five. The following complications of the second surgery occur in three patients one subarachnoid hemorrhage, two new visual field defects, one cranial nerve palsy, and one meningitis. Moreover, 10 patients (62.5%) developed one or more new pituitary hormone deficiencies. In conclusion reoperation for persistent or recurrent acromegaly has low success and high complication rates.

A study was conducted by Charalampakip., (2007) on surgical technique and outcome of 50 patients with pituitary lesions treated with an endoscopic endonasal transsphenoidal approach. It was a retrospective study. Fifty samples with pituitary tumors were operated upon using an endoscopic endonasal transsphenoidal procedure with out nasal speculum or postoperative nasal packing. Postoperative discomfort was minimal and hospitalization was four to five days. Among the 50 patients, total tumor removal was achieved in 47 patients (94%), subtotal in two patients (4%). One patient died intra operatively due to subarachnoid hemorrhage. This study showed that the endoscopic endonasal transsphenoidal approach for removing pituitary lesions is a form of minimally invasive surgery offering excellent postoperative results.

Rappaport., (1990) conducted a study on outcome of transsphenoidal approach to pituitary tumors. Forty-four patients with pituitary tumors underwent transsphenoidal resection. A specialized team performed the procedure so as to optimize the results. Twenty patients had non-secreting macro adenomas and 24 suffered from hormone secreting adenomas. All who presented with visual deterioration had improved vision after operation. Only three developed new endocrine deficits, while in four with invasive prolactinoma, vision improved following surgery. Eight of eleven patients with acromegaly were cured, while in the other three, who had invasive tumors, growth hormone decreased significantly. Eight of nine patients with Cushing disease were cured. In only one cases did a permanent complication, diabetes insipidus occurred and there was no mortality. These results demonstrated the efficacy of the procedure and the advantages of a dedicated team.

Higher volume hospitals and surgeons provided superior short term out comes after transsphenoidal pituitary tumor surgery with shorter length of stay and a trend toward lower charges (Barker et al., 2003)

2.3 Studies related to preoperative teaching in transsphenoidal hypophysectomy patients

A study was conducted by Lithner et al., (2000) to investigate patients need for pre and postoperative information in transsphenoidal surgery. Fifty patients admitted for transsphenoidal surgery 37 women and 13 men. Their median age was 49.5 yrs, ranging 17-76. The patients answered one questionnaire both at admission

and at discharge. In the questionnaire, 48 statements had to be answered on a five point Likert scale. Data showed that patients admitted for transsphenoidal surgery want a lot of information both at admission and discharge. The most requested information was related to anxiety creating factors such as pain and postoperative symptoms after transsphenoidal surgery. Thirty percentage of the patient wanted both written and verbal information. This result focused on the need to develop and share with the patient both written and verbal information.

Jolley (2000) performed a study in 150 postoperative transsphenoidal patients about the amount of information received on postoperative nausea and vomiting and whether this could be improved. A convenience sample of 140 postoperative patients was questioned. The patients were asked whether they had received any information, whether they thought information provision could be improved, whether an information leaflet would be useful. About half of the patients questioned in the first audit had not received any information but thought that a patient information leaflet would be useful. This study showed that addressing information provision on postoperative nausea and vomiting with the use of audit led to a vast improvement in patient satisfaction.

A study was conducted by Meeker (1994) at Alton Debsner medical foundation in New Orleans, in 1989 to determine the impact of a preoperative teaching program on the incidence of postoperative atelectasis and patient satisfaction in transsphenoidal patients. The sample size was 81 patients. Results showed no

significant difference of post operative complications and patient gratification after participating in a structured preoperative teaching program.

The above given review literatures show the major complications following transsphenoidal surgery are C.S.F rhinorrhea, Diabetes Insipidus, and Hyponatremia these complications mainly seen in prior history of transsphenoidal surgery. Postoperative C.S.F leakage is important risk factors of meningitis after transsphenoidal surgery. In this review literature three studies are related to effect of preoperative teaching. Two studies showed that the preoperative teaching on postoperative experience led to a vast improvement in patient satisfaction and the result of third study showed that the no significant difference of postoperative experience after attending preoperative teaching program.

The key terms used for literature search, <http://www.ncbi.nlm.nih.gov> is given in Table 2.1

2.4 Key terms used for literature search.

Table: 2.1

Serial Number	Key Search Words	Number of Articles
1	Complications Following Transsphenoidal Surgery	170
2	Post Operative Outcome of Pituitary Adenoma	104
3	Health Education Regarding Pituitary Adenoma	9

METHODOLOGY

CHAPTER III

METHODOLOGY

3.1 Introduction

Methodologic research refers to investigations of the ways of obtaining, organizing and analyzing data. Methodologic studies address the development, validation, and evaluation of research tools or methods (Polit 2004). This chapter provides a brief description of different steps taken to conduct this study. It includes research approach, research design, setting, the sample and sampling technique, development of tool, description of tool, pilot study, data collection, procedure and plan of analysis

3.2 Research approach

The experimental approach was selected for the study.

3.3 Research design

It is the overall plan for addressing a research question including specifications for enhancing the studies integrity. For fulfilling the objectives of the study one group post test design only was utilized. A control group was selected retrospectively for comparison

3.4 Objectives

The objectives of the study were

- (a) To find out the effectiveness of preoperative teaching on postoperative outcome of patients undergoing transsphenoidal hypophysectomy

- (b) To find out relationship between postoperative outcome and selected variables.

3.5 Setting

The study was conducted in the Neuro surgical I.C.U and Neuro Surgical ward in Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum. The rational for selecting Sree Chitra Tirunal Institute for study was that the investigator was most familiar with this institution

3.6 Sample and sampling technique

Consecutive sampling technique was used to select the samples for the study. The duration of study period from August 2007 to October 2007 . The size of the sample was 32. All the patients who underwent transsphenoidal surgery during the study period were included. There were only 12 patients, since the sample size was small, a control group of 20 patients were selected retrospectively, who have undergone transsphenoidal surgery just before the study period, June to July 2007.

3.7 Criteria for sample collection

Inclusion criteria

- (a) Patient who are posted for transsphenoidal hypophysectomy in SCTIMST
- (b) Patient who knows Malayalam

Exclusion criteria

Patients who have undergone pituitary tumor excision through transcranial route.

There were only one patient during the study period

3.8 Development of tool

The purpose of data collection tool is to obtain relevant data, review literature have a vital role to prepare data collection tool. Investigator prepared a tool based on the area of the study and submitted to experts in SCTIMST for content validity.

3.9 Description of tool

The tools used in the present study have 3 sections.

Section I: It deals with demographic data of the patient

Section II: It consists of preoperative teaching regarding preoperative preparations before going to surgery and postoperative experiences after transsphenoidal surgery.

Section III: This section is about postoperative outcome of the patient who has undergone transsphenoidal hypophysectomy. It contains seven questions regarding length of ICU stay, use of analgesic, propped-up position, vision improvement, nasal pack removal, CSF leak and development of any other postoperative complications. Out of these five questions were in the form of a four point rating scale (1, 2, 3, 4) with a total score of 20. Two items were related to postoperative complications. Minor complications each were given -1 score (Maximum - 4) and major complications each were given -3 score

(Maximum - 9) see Appendix D. Medical records also were consulted.

3.10 Pilot study

The pilot study is often developed similarly to the proposed study, using similar subjects, the same settings, the same treatment, and the same data collection and analysis techniques. After obtaining permission from the authorities pilot study was conducted on September 2007. The purpose of the pilot study was to develop and refine any of the steps in the research process. The study was conducted among three samples. Two females and one male. Planned individual teaching given by the investigator prior to surgery regarding preoperative preparations and postoperative experiences using self prepared pamphlet. Post test was done on the day of transfer out from the I.C.U. most of the patients took 15 to 20 mts for completing the questionnaire. After pilot study modification done in data collection tool. The study was satisfactory.

3.11 Data collection

The data were collected from NSICU and NSW of SCTIMST. For data collection formal permission was obtained from the authorities. The period of data collection was from August 2007 to October 2007. Investigator introduced herself to the patient and explained the purpose of the study and consent was taken from each sample.

The technique used for data collection was interview, observation, and review of case sheet. A self prepared validated questionnaire was the tool. A health education pamphlet in Malayalam was prepared and used to patient prior surgery.

After surgery on the day of transfer out from the I.C.U collected data from the patient regarding postoperative experiences with the use of questionnaire.

3.12 Plan of analysis

A plan for data analysis was developed by the investigator after the pilot study. The obtained data would be analyzed by descriptive and inferential statistics and percentages would be used for describing the sample. Bar diagram would be utilized to represent the distribution of total scores. Master sheet was prepared with the score obtained from the postoperative outcome parameters of transsphenoidal hypophysectomy patients

3.13 Summary

This chapter describes the research approach used for the study, research design of the study, setting of the study, sample and sampling techniques, development and description of tool, pilot study, data collection procedure and plan of analysis.

**ANALYSIS
AND
INTERPRETATION OF DATA**

CHAPTER IV

ANALYSIS AND INTERPRETATION

Analysis is a process of organizing and synthesizing data so as to answer research questions and test hypotheses (Polit & Beck 2006). This chapter analyses and interprets the data obtained from the 12 patients those who got preoperative teaching on postoperative experience of transsphenoidal surgery and control group of 20 patients who had undergone transsphenoidal surgery, who were selected retrospectively.

Purpose of the study was to find out the effectiveness of preoperative teaching on postoperative outcome of patients undergoing transsphenoidal hypophysectomy and to find out the relationship between postoperative outcome and selected variables.

Analyses of data are divided in 3 sections

4.1 Distribution of sample according to sample characteristics

4.2 Data on regarding co-morbidities of the experimental and control group

Data collected from 32 sample regarding co-morbidities of the patients are shown in Table 4.4. The co-morbidities included Diabetes Mellitus, Hypertension, Dyspnea, and Heart disease.

4.3 Data on postoperative outcome among experimental and control group.

This part of analysis shows the postoperative outcome experiences among experimental and control group. The various parameters included were length of I.C.U stay, use of analgesics, day of propped-up position, visual changes, day of nasal pack removal, minor problems and major complications. The comparison of experimental and control group in these parameters are given in Table 4.5 to 4.12 and Figure: 4.4 to 4.11

4.1 Description on sample characteristics

Total number of 32 samples that who had undergone transsphenoidal surgery were consecutively selected. The demographic data included were age, sex and income of the patient.

Table: 4.1 :- Comparison of experimental and control group according to age.

Group	Mean	S.D	P
Experimental	41.5	12.24	0.87
Control	40.7	13.78	

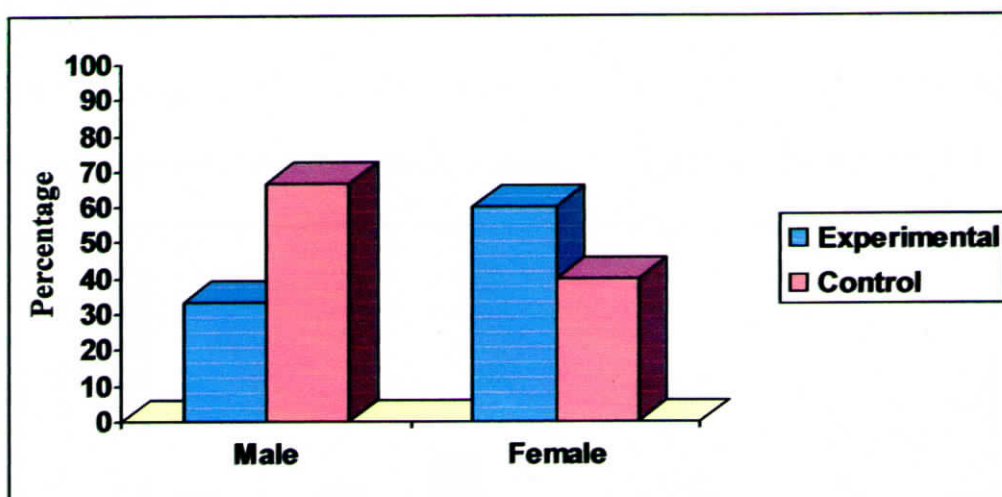
The data given in Table 4.1 show the age of the experimental group ranged from 20 to 58 with a mean of 41.5, median 42.5, mode 20 and control group ranged from 20 to 70 with a mean of 40.7, median 35.5, and mode 29. The data given in Table 4.1 show that the experimental and control group were comparable with regard to age ($P = 0.87$).

Table 4.2

Comparison of experimental and control group according to sex

Sex	Experimental Group		Control Group	
	Frequency	Percentage	Frequency	Percentage
Male	4	33.3	12	60
Female	8	66.7	8	40

The data given in Table 4.2 show the percentage of males (60%) was higher in control group than in experimental group and the percentage of females (66.7 %) was higher in experimental group than control group. The same data are shown in Figure 4.1 as Bar Diagram.

**Figure: 4.1**

Comparison of experimental and control group according to sex

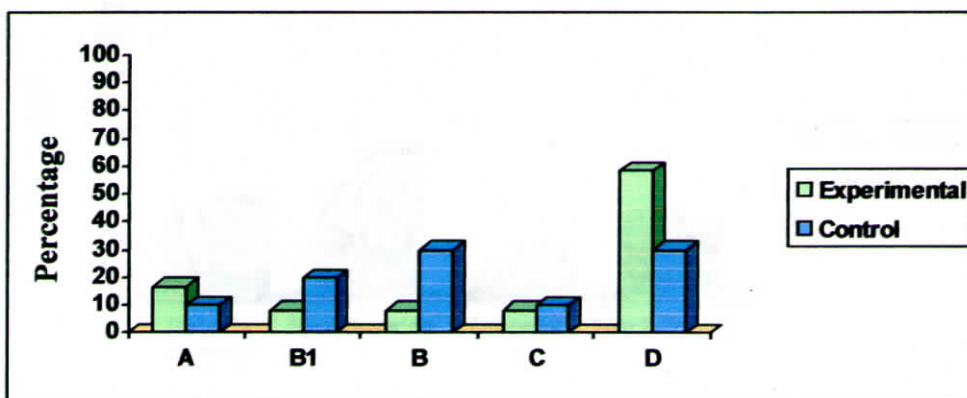
Table: 4.3

Comparison of experimental and control group according to income.

According to patient's monthly income they were coming under five economic categories: A,B1,B,C,D. (A category up to Rs. 400/month, B1 category up to Rs. 700/month, B category up to Rs. 1300/month, C category Rs. 1300 to 2000/month and D category above Rs. 2000/month).

Economic category	Experimental Group		Control Group	
	Frequency	Percentage	Frequency	Percentage
A	2	16.7	2	10
B1	1	8.3	4	20
B	1	8.3	6	30
C	1	8.3	2	10
D	7	58.3	6	30

The majority of patients were 'D' category in the experimental group(58.3%) than control group(30%). The same data are shown in Figure: 4.2 as Bar diagram.

**Figure: 4.2**

Comparison of sample according to the income of the patient

4.2 Data regarding co-morbidities of the experimental and control group

Table: 4.4

Comparison of experimental and control group based on the co-morbidities

Co-morbidities	Experimental Group		Control Group	
	Frequency	Percentage	Frequency	Percentage
Diabetis Mellitus	3	25	6	30
Hypertension	4	33.3	9	45
Dyspnea	1	8.3	3	15
Heart disease	3	25	4	20

The most common problem reported by the patient was Hypertension both in the experimental (33.3%) and control group (45%). The same data are shown in Figure: 4.3 as Bar diagram.

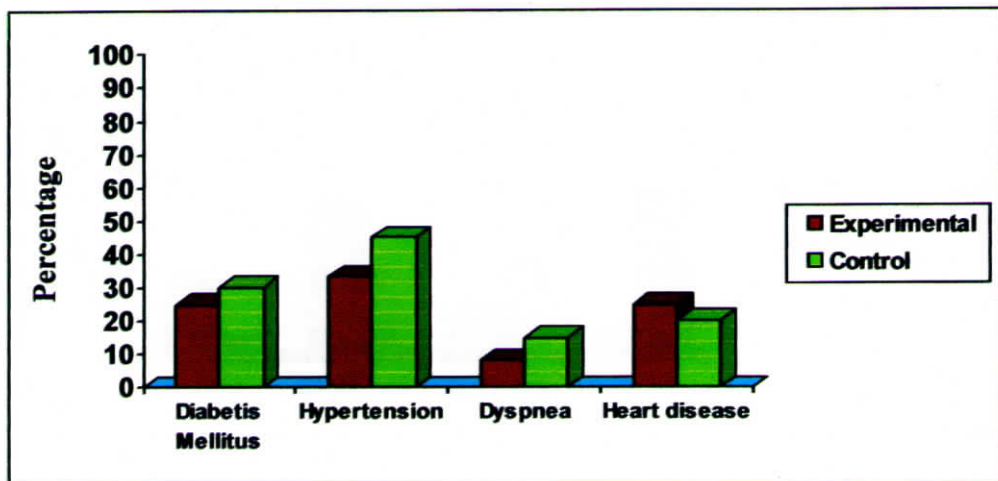


Figure: 4.3

Comparison of experimental and control group based on the co-morbidities

4.3 Data on postoperative outcome among experimental and control group.

Table: 4.5

Comparison of experimental and control group according to length of I.C.U stay.

Length of I.C.U stay	Experimental Group		Control Group	
	Frequency	Percentage	Frequency	Percentage
≤ 24hr	3	25	1	5
25-48 hrs	6	50	2	10
49-72 hrs	2	16.7	6	30
> 72 hrs	1	8.3	11	55

Among experimental group only 8.3 percent of patients stayed in the I.C.U more than 72 hrs, were as in the control group this was 55 percent. Length of ICU stay was higher in control group than experimental group. The same data are shown in Figure: 4.4 as Bar diagram.

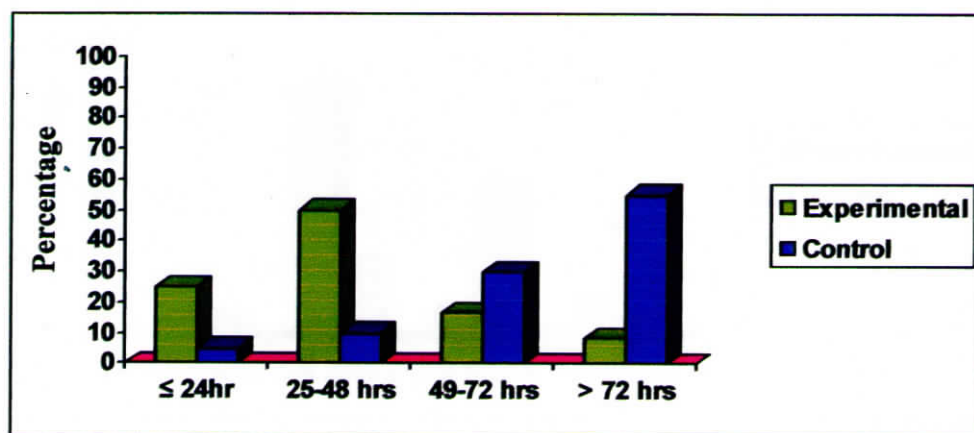


Figure: 4.4

Comparison of experimental and control group according to length of I.C.U stay.

Table: 4.6

Comparison of experimental and control group according to the use of analgesic

Use of analgesic	Experimental Group		Control Group	
	Frequency	Percentage	Frequency	Percentage
2-4 times	2	16.7	1	5
5-6 times	8	67.7	4	20
7-8 times	1	8.3	8	40
> 8 times	1	8.3	7	35

The data given in Table 4.6 show that in experimental group 8.3 percent of patients received analgesic above 8 times but in case of control group this rate was 35 percent. The same data are shown in Figure: 4.5 as Bar diagram

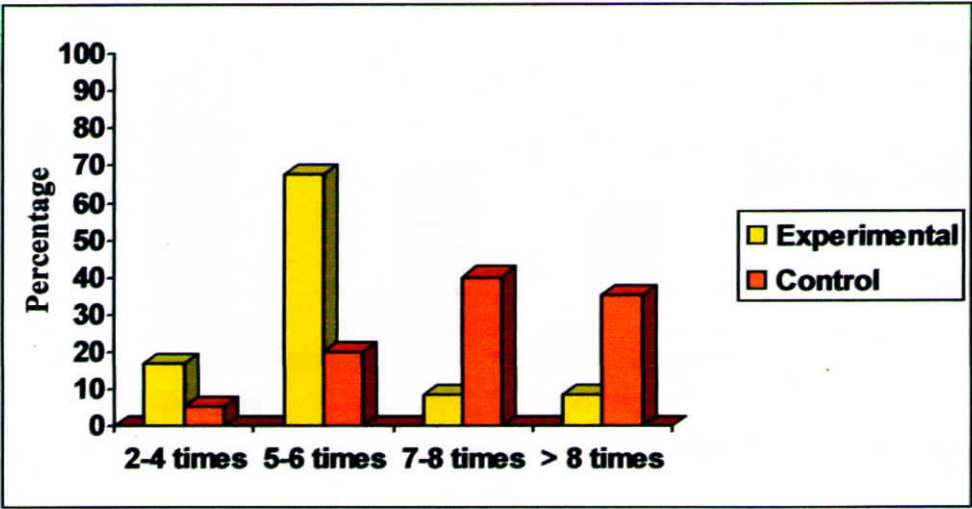


Figure: 4.5

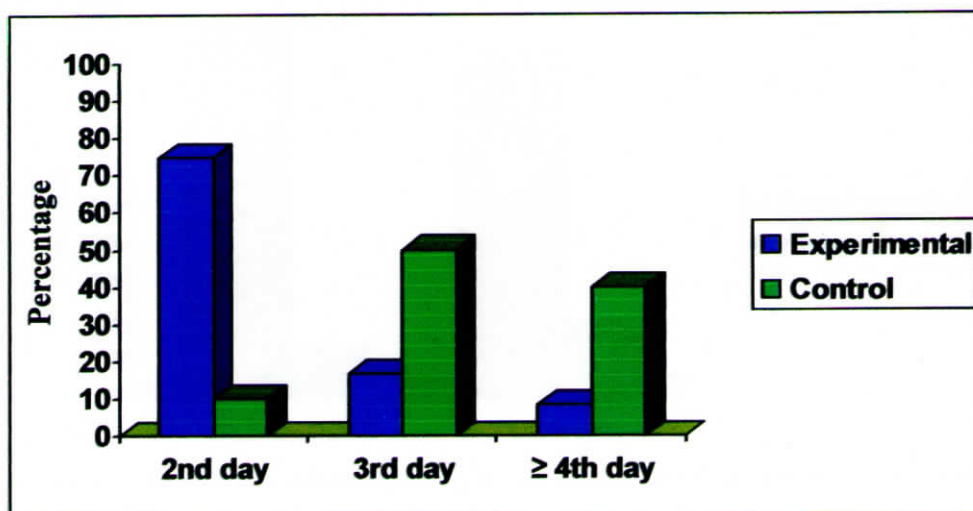
Comparison of experimental and control group according to the use of analgesic

Table: 4.7

Comparison of experimental and control group based on the day of propped-up position

Day of propped-up position	Experimental Group		Control Group	
	Frequency	Percentage	Frequency	Percentage
2 nd day	9	75	2	10
3 rd day	2	16.7	10	50
≥ 4 th day	1	8.3	8	40

The data given in Table 4.7 show that 40 percent of the control group head elevated after 4th postoperative day. In the experimental group about 75 percent of patients head elevated 2nd day after surgery. The same data are shown in Figure: 4.6 as Bar diagram.

**Figure: 4.6**

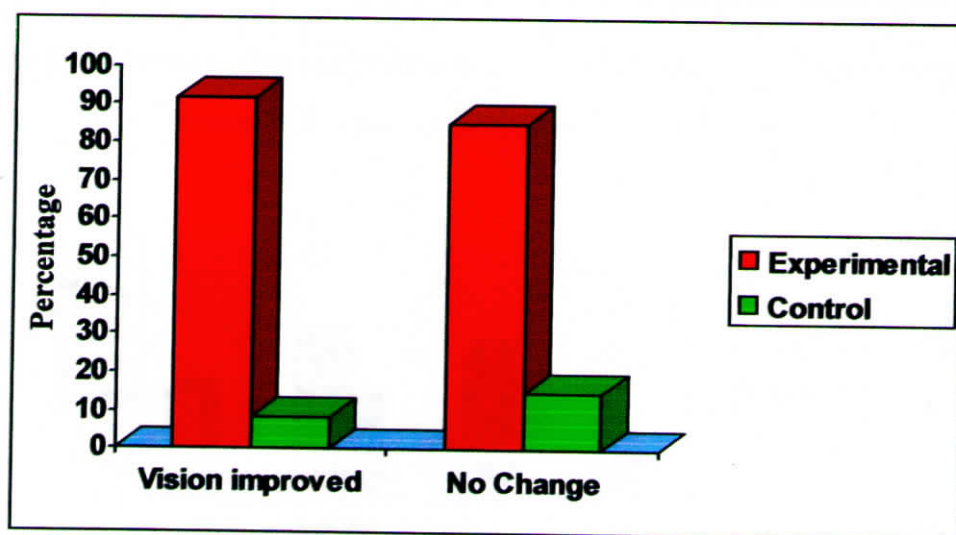
Comparison of experimental and control group based on the day of propped-up position

Table: 4.8

Comparison of experimental and control group according to the visual changes

Visual changes	Experimental Group		Control Group	
	Frequency	Percentage	Frequency	Percentage
Vision improved	11	91.6	17	85
No change	1	8.3	3	15

Comparison of both groups indicates the vision improvement was higher in experimental group (91.6%) than control group (85%). The same data are shown in Figure: 4.7 as Bar diagram.

**Figure: 4.7**

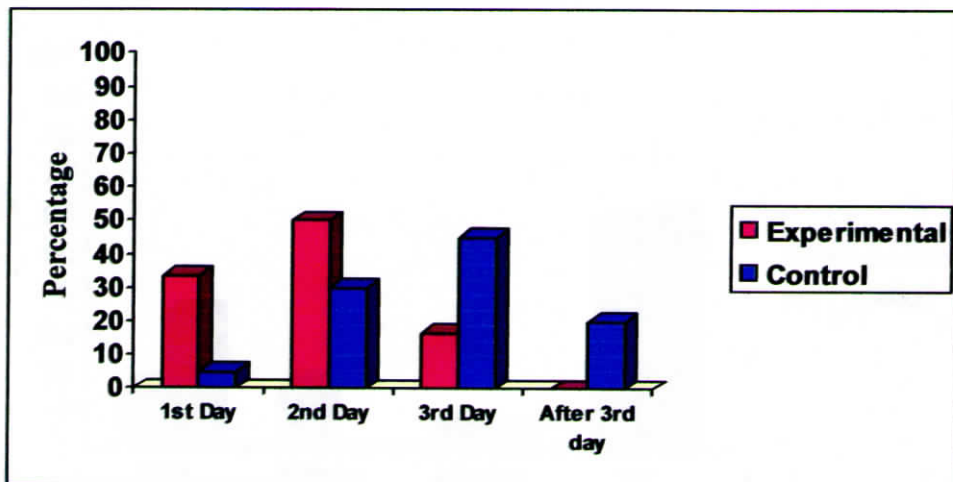
Comparison of experimental and control group according to the visual changes

Table: 4.9

Comparison of experimental and control group based on the day of nasal pack removal

Day of nasal pack removal	Experimental Group		Control Group	
	Frequency	Percentage	Frequency	Percentage
1 st day	4	33.3	1	5
2 nd day	6	50	6	30
3 rd day	2	16.7	9	45
After 3 rd day	0	0	4	20

Among experimental group 50 percent of patients nasal pack removed 2nd postoperative day, but in control group 45 percent of patients nasal pack removed 3rd post operative day. The same data are shown in Figure: 4.8 as Bar diagram.

**Figure: 4.8**

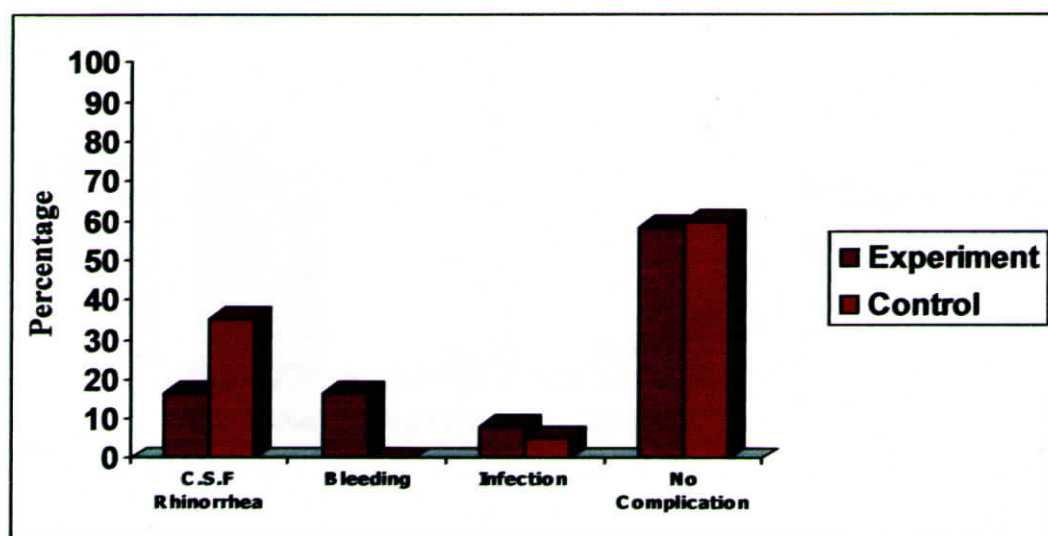
Comparison of experimental and control group based on the day of nasal pack removal

Table: 4.10

Comparison of experimental and control group based on the major complications

Major complications	Experimental Group		Control Group	
	Frequency	Percentage	Frequency	Percentage
C.S.F Rhinorrhea	2	16.8	7	35
Bleeding	2	16.7	0	0
Infection	1	8.3	1	5
No Complication	7	58.3	12	60

Major complication reported in both group was C.S.F rhinorrhea. Thirty five percent of the control group and 16.8 percent of the experimental group developed C.S.F rhinorrhea during their I.C.U stay. The same data are shown in Figure: 4.9 as Bar diagram.

**Figure: 4.9**

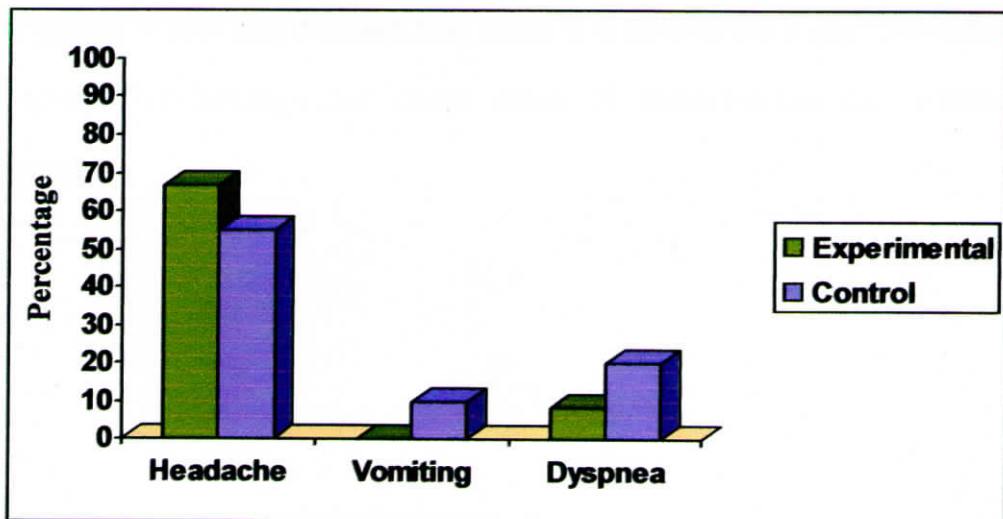
Comparison of experimental and control group based on the major complications

Table: 4.11

Comparison of experimental and control group according to the minor problems

Minor problems	Experimental Group		Control Group	
	Frequency	Percentage	Frequency	Percentage
Headache	8	66.7	11	55
Vomiting	0	0	2	10
Dyspnea	1	8.3	4	20

The data given in Table 4.11 represent the minor problem complained by the patient after surgery. The most common problem complained by patient was headache both in the experimental (66.7%) and control group (55%). The same data are shown in Figure: 4.10 as Bar diagram.

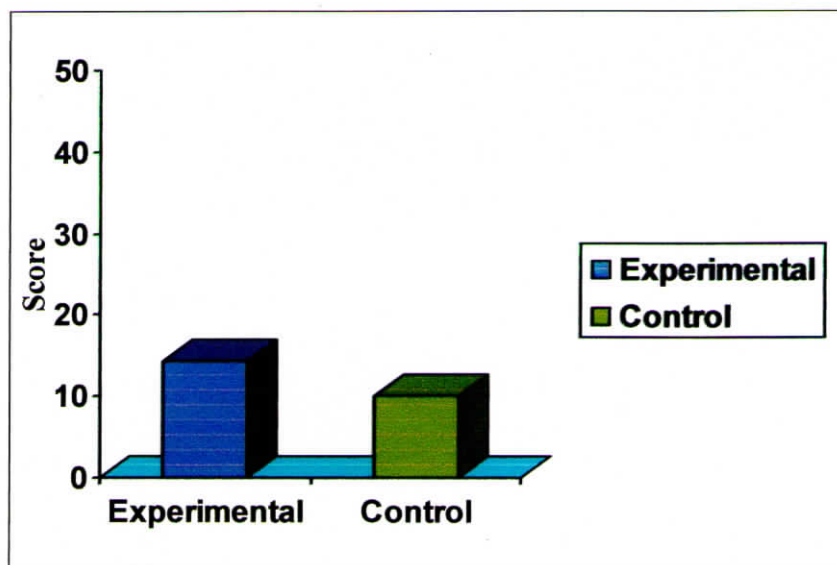
**Figure: 4.10**

Comparison of experimental and control group according to the minor problems

Table: 4.12

Groups	Mean out come score	Standard deviation	P value
Experimental	14.25	4.07	.006
Control	10	3.83	

The data given in Table 4.12 show that postoperative out come score of experimental group ranged from 7 to 20 with a mean of 14.25 ± 4.07 and that of control group ranged from 5 to 16 with a mean of 10 ± 3.83 . The same data are shown in Figure: 4.11 as Bar diagram.

**Figure: 4.11**

Comparison of experimental and control group based on the postoperative outcome

Comparison of mean outcome score and standard deviation obtained from experimental and control group based on the postoperative outcome.

The outcome parameters were given scores: length of I.C.U stay (1 - 4), number of use of analgesic (1 - 4), day of propped-up position (1 - 4), visual changes (1 - 4), day of nasal pack removal (1 - 4), minor problems were given a score of '-1' each. Most of the patients had one or two minor problems and major complications were given score of '-3' each. The total score ranged from five to twenty. The score of minor problem and major complications if any were subtracted from this total score. Higher score indicate better outcome.

An unpaired 't' test was showed that there is a statistically significant difference in the mean postoperative out come score of experimental and control group ($P = .006$).

4.4 Summary

This chapter deals with analysis and interpretation of data collected from 32 patients. Descriptive statistics was used for the analysis. Bar diagram and pie diagrams were used to describe the postoperative out come score of the sample.

SUMMARY, CONCLUSION, DISCUSSION AND RECOMMENDATIONS

Chapter V

SUMMARY, CONCLUSIONS, DISCUSSION, AND RECOMMENDATIONS

This chapter gives a brief account of the present study including conclusions drawn from the findings and possible application of the result.

5.1 Summary

This study was undertaken to assess the effectiveness of preoperative teaching on postoperative outcome of patients undergoing transsphenoidal surgery at SCTIMST, Trivandrum.

5.2 The Main objectives of the study were

- (1) To find out the effectiveness of preoperative teaching on postoperative outcome of patients undergoing transsphenoidal hypophysectomy.
- (2) To find out relationship between postoperative outcome and selected variables.

Need of the study was that after transsphenoidal surgery patients were unable to co-operate with the fact of having nasal packing, supine position and lumbar drain. It is assumed that preoperative teaching regarding postoperative experiences about transsphenoidal surgery would be helpful to improve the patient's outcome.

Review of literature related to preoperative teaching, risk factors of complications, and outcome analysis of transsphenoidal surgery was very helpful to develop the tool and get an idea about how to approach the study.

Experimental approach was selected for fulfilling the objectives of the study. Due to lack of time and cases, the control group was selected retrospectively for comparison.

This study was conducted at Neuro Surgical I.C.U and Neuro Surgical ward of SCTIMST, Trivandrum. Consecutive sampling technique was used to obtain sample. Total number of sample was 32, 12 experimental and 20-control group. The control group was selected retrospectively during June- July 2007.

The data obtained were analyzed by using descriptive and inferential statistics. Bar diagrams are utilized to represent the percentage of postoperative outcome in the following content areas, length of I.C.U stay, use of analgesic, propped-up position, and visual changes, nasal pack removal, major complications and minor problems

5.3 The major findings of the study

- (1) The postoperative outcome was significantly higher in experimental group than control group.
- (2) Those who got preoperative teaching regarding postoperative experiences had a better outcome after transsphenoidal surgery.

Postoperative outcome parameters among experimental and control group presented following findings.

- Length of I.C.U stay was higher in control group than experimental group

- Use of analgesic was more in control group than experimental group
- In experimental group most of the patients headend elevated 2nd postoperative day but in control group majority of patients headend elevated after 4th postoperative day.
- In case of nasal pack removal experimental group have better outcome than control group
- The most common problem complained by patient was headache both in the experimental and control group.
- The major complication reported in both group was C.S.F rhinorrhea.
- Comparison of both group indicates the vision improvement was higher in experimental group than control group

5.4 Limitation

- (a) Sample size was selected from only one institution
- (b) The patients who knows Malayalam
- (c) Duration is three months

5.5 Conclusion

Conclusion obtained from the study is Addressing information provision on postoperative experience preoperatively appears to produce an improvement in postoperative out come of the patient.

The statistical difference was not tested due to small sample size.

5.6 Discussion

Preoperative teaching regarding postoperative experience is very helpful to improve the patient satisfaction many authors have conducted different studies in this area (Lithner, Meeker, Wilson, Jolley, Adamede). This study is mainly focused on the effectiveness of preoperative teaching on postoperative outcome of patients undergoing transsphenoidal hypophysectomy.

There are many complications may occur after transsphenoidal surgery. After transsphenoidal surgery many patients were unable to cooperate with the fact of having nasal packing, supine position and lumbar drain so there is more chance to increase the postoperative outcome experience of these patients so preoperative teaching regarding postoperative experience is an important part of patient care, and patient can clarify doubts regarding postoperative experience and can prevent complications. Lithner et al., (2000) found that the patients need for pre and postoperative information in transsphenoidal surgery. The most requested information was related to anxiety creating factors such as pain and postoperative symptoms after Transsphenoidal Surgery and the need to develop and share with the patient both written and verbal information. In this study the investigator used a self prepared pamphlet containing postoperative outcome experiences. The preoperative teaching was effective.

According to Jolley(2000) preoperative information provision on postoperative experience of T.S led to a vast improvement in patient satisfaction, but another study conducted by Meeker (1994) concluded that there was no significant

difference of postoperative complications and patient gratification after participating structured preoperative teaching program.

5.7 Recommendations

The following recommendation made on the basis of the present study.

The investigator done a retrospective and prospective analysis on effect of preoperative teaching on postoperative outcome of patients undergoing transsphenoidal surgery. A similar study can be conducted in other health care institutions. During the time of assessment the investigator understood that most of the patients were unaware about the disease condition and by health education majority of patients were adjusted with their immediate postoperative period. So the health education played an important role.

Health education contain an idea about the need for surgery postoperative experience and outcome. Health professionals were also responsible to give an orientation about ICU and have look at the patients who were undergone the same surgery.

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APPENDIX

Appendix A

സമ്മതപത്രം

എന്റെ (രോഗി) അസുഖവുമായി ബന്ധപ്പെട്ട് ശസ്ത്രക്രിയയ്ക്ക് മുമ്പ് ശസ്ത്രക്രിയാനന്തര വിവരങ്ങൾ പറഞ്ഞ തരുന്നതിനും ശസ്ത്രക്രിയക്ക് ശേഷമുള്ള എന്റെ ആരോഗ്യസ്ഥിതി മനസ്സിലാക്കുന്നതിനും ഞാൻ പൂർണ്ണമായി സഹകരിച്ച് കൊള്ളാമെന്ന് സമ്മതിക്കുന്നു.

തീയതി :

സ്ഥലം :

എന്ന്,
രോഗി

Appendix B

ശസ്ത്രക്രിയയെ കുറിച്ച് നൽകുന്ന വിവരങ്ങൾ
രോഗിക്ക് എത്രമാത്രം പ്രയോജനപ്പെടുന്നു എന്നതിനെക്കുറിച്ചുള്ള പഠനം

രോഗിയെക്കുറിച്ചുള്ള വിവരങ്ങൾ

1. രോഗിയുടെ പേര്

2. രോഗിയുടെ വയസ്സ് ?

3. സെക്സ് ?

4. വിവാഹം കഴിഞ്ഞതാണോ ?

5. താങ്കളുടെ വിദ്യാഭ്യാസം ?

6. താങ്കളുടെ വരുമാന നില താഴെ കൊടുത്തിരിക്കുന്നതിൽ ഏത് വിഭാഗത്തിലാണ് ?

7. താങ്കൾക്ക് ഇതിനുമുമ്പ് ശസ്ത്രക്രിയ ചെയ്തിട്ടുണ്ടോ ?

8. താഴെകൊടുത്തിരിക്കുന്ന ഏതെങ്കിലും അസുഖത്തിന് നിങ്ങൾ മരുന്ന്
കഴിക്കുന്നുണ്ടോ ?

Appendix C

മുക്കിൽ കൂടിയുള്ള ശസ്ത്രക്രിയക്കു തയ്യാറെടുക്കുന്ന രോഗികൾ അറിഞ്ഞിരിക്കേണ്ട കാര്യങ്ങൾ

1. രോഗിയുടെ മുക്കിലൂടെ ചെറിയ ഉപകരണങ്ങൾ കടത്തി തലച്ചോറിനുള്ളിലെ മുഴനീക്കം ചെയ്യുകയാണ് ഈ ശസ്ത്രക്രിയയിലൂടെ ചെയ്യുന്നത്.
2. ശസ്ത്രക്രിയക്കു നിർദ്ദേശിച്ചിരിക്കുന്ന ദിവസം രാവിലെ ബിറ്റാഡിൻ ലായനി ഉപയോഗിച്ച് കുളിക്കുക.
3. ശസ്ത്രക്രിയക്കു മുമ്പ് രാത്രിയുള്ള ലഘുഭക്ഷണത്തിന് ശേഷം ഒന്നും കഴിക്കാൻ പാടില്ല.
4. ശസ്ത്രക്രിയക്കു മുമ്പ് മുക്കുലൊഴിക്കാനുള്ള തുള്ളിമരുന്നുകൾ കൃത്യമായി ഒഴിക്കുക. (ശസ്ത്രക്രിയയ്ക്ക് മുമ്പുള്ള രാത്രിയും, ശസ്ത്രക്രിയയ്ക്ക് പോകുന്നതിന് മുമ്പും) കൂടാതെ വായ് കഴുകാനുള്ള ലായനി ഉപയോഗിച്ച് വായ്വൃത്തിയായി കഴുകുക.
5. ശസ്ത്രക്രിയക്കുശേഷം നിങ്ങളെ I.C.U. ൽ ആയിരിക്കും കിടത്തുന്നത്.
6. ശസ്ത്രക്രിയക്കുശേഷം I.C.U. ൽ രോഗിയുടെ ബന്ധുക്കളെ പ്രവേശിക്കാൻ അനുവദിക്കുന്നതല്ല.
7. അണുബാധ നിയന്ത്രിക്കുന്നതിനായി I.C.U. ൽ ജോലി ചെയ്യുന്നവർ മുഖത്ത് മാസ്ക് ഉപയോഗിക്കുന്നതാണ്.
8. ശസ്ത്രക്രിയക്കുശേഷം രോഗിക്കു ഓക്സിജൻ മാസ്ക് വയ്ക്കുന്നതാണ്.
9. ശസ്ത്രക്രിയയ്ക്ക് മയങ്ങുവാനുള്ള മരുന്ന് തരുന്നതിനാൽ ശസ്ത്രക്രിയക്കുശേഷം കുറഞ്ഞത് 12 മണിക്കൂർ സമയമെങ്കിലും ഒന്നും കഴിക്കാൻ പാടുള്ളതല്ല.
10. മുക്കിലൂടെ ഉപകരണങ്ങൾ കടത്തി ശസ്ത്രക്രിയ ചെയ്യുന്നതിനാൽ മുക്കിൽ ഡ്രസ്സിംഗ് വച്ചിരിക്കും തൻമൂലം വായിലൂടെ ശ്വാസം എടുക്കേണ്ടതായി വരും. വേറെ പ്രത്യേകിച്ച് കുഴപ്പങ്ങൾ ഒന്നുമില്ലെങ്കിൽ മുക്കിനുള്ളിലെ ഡ്രസ്സിംഗ് 12 മണിക്കൂറിന് ശേഷം നീക്കം ചെയ്യുന്നതാണ്.
11. ശസ്ത്രക്രിയക്കുശേഷം മുക്കിൽ വിരൽ ഇടാൻ ശ്രമിക്കുകയോ, ശക്തിയായി ചീറ്റുകയോ, തുമ്മുകയോ ചെയ്യരുത്.
12. ശസ്ത്രക്രിയക്കുശേഷം കുറഞ്ഞത് രണ്ട് ദിവസമെങ്കിലും തലയിണ ഉപയോഗിക്കാതെ കട്ടിലിൽ മലർന്ന് കിടക്കണം. തൻമൂലം ഭക്ഷണ പദാർത്ഥങ്ങൾ കിടന്ന് കൊണ്ട് തന്നെ കഴിക്കണം. അത്പോലെ തന്നെ മുത്രം നീക്കം ചെയ്യുന്നതിനായി ട്യൂബ് ഇട്ടിരിക്കും.
13. ശസ്ത്രക്രിയക്കു പോകുന്നതിന് മുമ്പ് ഒന്നിനെക്കുറിച്ചും ആകുലപെടേണ്ടതില്ല. മാനസികമായി തയ്യാറെടുക്കുക അത് നിങ്ങളുടെ ആത്മവിശ്വാസം കൂട്ടും.

Appendix D

ശസ്ത്രക്രിയാനന്തര വിവരങ്ങൾ

1. ശസ്ത്രക്രിയക്കുശേഷം എത്രമണിക്കൂർ ഐ.സി.യു ൽ കിടന്നു ?

4
24 hrs ൽ താഴെ

3
25-48 hrs

2
49-72 hrs

1
above 72 hrs

2. എത്ര തവണ വേദന സംഹാരി ഉപയോഗിക്കേണ്ടി വന്നു ?

4
2-4 തവണ

3
5-6 തവണ

2
7-8 തവണ

1
8 ൽ കൂടുതൽ

3. ശസ്ത്രക്രിയക്കുശേഷം എത്രാമത്തെ ദിവസമാണ് തലയുയർത്തിയത് ?

4
2-ാം ദിവസം

3
3-ാം ദിവസം

2
4-ാം ദിവസം

1
4 ദിവസത്തിനുശേഷം

4. എന്തെല്ലാം ബുദ്ധിമുട്ടുകളാണ് ശസ്ത്രക്രിയക്കുശേഷം ഉണ്ടായത് ?

-1
തലവേദന

-1
ചർദ്ദി

-1
ശ്വാസം മുട്ടൽ

-1
ഉത്കണ്ഠ

5. ശസ്ത്രക്രിയക്കുശേഷം കാഴ്ചയിൽ എന്തെങ്കിലും മാറ്റം സംഭവിച്ചിട്ടുണ്ടോ ?

4
കാഴ്ച കുടി

3
വ്യത്യാസം ഇല്ല

2
കാഴ്ച കുറഞ്ഞു

1
തീരെ കാഴ്ച ഇല്ല

6. ശസ്ത്രക്രിയക്കുശേഷം എത്രാമത്തെ ദിവസമാണ് മൂക്കിലെ ഡ്രസ്സിംഗ് നീക്കം ചെയ്തത്.

4
1-ാം ദിവസം

3
2-ാം ദിവസം

2
3-ാം ദിവസം

1
3 ദിവസത്തിനുശേഷം

7. താഴെകൊടുത്തിരിക്കുന്നതിൽ എന്തെങ്കിലും ബുദ്ധിമുട്ടുകൾ ഉണ്ടായിട്ടുണ്ടോ ?

-3
മൂക്കിൽകുടി വെള്ളം വരിക

-3
അണുബാധ

-3
രക്തസ്രാവം