DISSERTATION ON

A STUDY TO ASSESS THE EFFECTIVENESS OF BUBBLE GUM CHEWING IN EARLY RETURN OF BOWEL MOVEMENTS AMONG PATIENTS UNDERWENT SPECIFIC ABDOMINAL SURGERIES AT RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL, CHENNAI.

M. Sc (NURSING) DEGREE EXAMINATION
BRANCH –I MEDICAL SURGICAL NURSING

COLLEGE OF NURSING
MADRAS MEDICAL COLLEGE, CHENNAI – 03.

A dissertation submitted to

THE TAMILNADU DR.M.G.R. MEDICAL UNIVERSITY,
CHENNAI – 32.

In partial fulfillment of requirements for the degree of

MASTER OF SCIENCE IN NURSING

APRIL 2016

CERTIFICATE

This is to certify that this dissertation titled "**a study to assess the effectiveness of bubble gum chewing in early return of bowel movements among patients underwent specific abdominal surgeries at Rajiv Gandhi Government General Hospital, Chennai -03**". is a bonafide work done by **Ms.keziaevangelin. D,II year M.Sc Nursing student**, College of Nursing, Madras Medical College, Chennai. submitted to the **Tamil Nadu DR.M.G.R. Medical University, Chennai** in partial fulfillment of the requirements for the award of degree of **Master of Science in Nursing, Branch I Medical Surgical Nursing,** under our guidance and supervision during the academic period from 2014 – 2016.

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DISSERTATION ON

A study to assess the effectiveness of bubble gum chewing in early return of bowel movements among patients underwent specific abdominal surgeries, at Rajiv Gandhi Government General Hospital, Chennai.

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In partial fulfilment of the requirement for the degree of

MASTER OF SCIENCE IN NURSING

APRIL 2016

ACKNOWLEDGEMENT

" It is glory of God to conceal things, but the glory of king is to search thing out".

Proverb25:2

God delight in concealing things scientist delight in discovering things for bestowing his blessings upon me leading and guiding me throughout this period of Research.

Nothing concrete can be achieved without an optimal inspiration during the course of work. There are several hands and hearts behind this work, I would like to express my gratitude. Great and mighty is our Lord our God, to whom all thanks and praise for all wisdom, knowledge, guidance and strength throughout this work.

I wish to express my sincere thanks to **Dr. R.Vimala MD**, Dean, Madras Medical College, Chennai for providing necessary facilities and extending support to conduct this study.

I express my heartfelt thanks to **Dr.V.Kumari M.Sc (N)., Ph.D.,** Principal, College of Nursing, Madras Medical College, Chennai. The success of my work is created to her excellent guidance, support, constant encouragement and valuable suggestions helped in the fruitful outcome of this study.

My immense pleasure to express my sincere gratitude to **Mrs.Elizabeth kalavathy, M.Sc(N),** Reader, College of Nursing, Madras Medical College, Chennai , for her guidance in pursuing the study.

I express my heartfelt thanks to my esteemed teacher **DR. R. Lakshmi M.Sc (N).,Ph.D., ADME.,** for her continuous encouragement and constant support during her presence in our college.

I extend my earnest gratitude to my esteemed teacher **Mrs.A.Thahira Begum, M.Sc(N), MPhil,MBA.** Reader, and Head of the Department, College of Nursing, Madras Medical College, Chennai for her timely assistance and guidance in pursuing the study.

I would also like to thank **Mrs.Dominic Arockia Mary MSc.,(N),** Lecturer, **Mrs.K.Shanthi devi M.Sc.,(N)** Lecturer, and **Mrs.K.Saroja M.Sc.,(N),** Lecturer, college of Nursing, Madras Medical College, Chennai, for their valuable support and assistance during this study.

Its my great pleasure and privilege to express my deep sense of gratitude to all the faculty members of College of Nursing, Madras Medical College, Chennai for the support and assistance given by them in all possible manners to complete this study.

I render my deep sense of gratitude to **Dr.D.Kannan,MS.,MCh.,FRCS** Director, Institute of Surgical Gastroenterology, and **Dr.P. Raghumani M.S Director,** Institute of General Surgery for helping me in constructing the tools for the study and completing my study in a successful manner.

I am extremely thankful to **Mrs.S.Valarmathi M.SC.,M.Phil,** Research Officer(statistics) Department of Epidemiology, Tamil Nadu Dr. M.G.R Medical University, Guindy, Chennai. For suggestion and guidance on statistical analysis.

It is my immense pleasure and privilege to express my gratitude to **Dr.V.Tamilarasi, M.Sc (N), Ph.D.,** Head of the Department – Medical Surgical Nursing. Madha college of Nursing, kundrathur for validating this tool.

I extend my thanks to **Mr.Ravi, B.A,B.L.I.Sc.,** Librarian, College of Nursing, Madras Medical College, Chennai for his co-operation and assistance which built the sound knowledge for this study.

I extend my thanks to my father **Mr.D.David Ravi Chandra Dass**, he is the man behind my Success and to my mother **Mrs.K. Rose Mary** she is the great motivator.

I would like to thank my brother **Mr.D.Earnest,** also I thank my grandparents **Mrs.Mary** and **Mr.D.Devadoss** for their moral support. I am very much thankful to **Mr. Benjamin. K** who stood by my side and supported. Last but not the least I thank all my friends and my well wishers who supported me ***Ms. Karthiga*** and ***Mrs***. ***Aishwarya*****.**

I thank **Mr. Syed Hussain, B.Sc(Com),** and **Mr.Ramesh B.A.,** for their help in DTP printing, binding and completing the dissertation successfully.

ABSTRACT

TITLE: A study to assess the effectiveness of bubble gum chewing in early return of bowel movements among patients underwent specific abdominal surgeries, at Rajiv Gandhi Government General Hospital, Chennai.

Post operative nursing is the important and challenging branch of clinical nursing. Especially caring of patients underwent major abdominal surgeries is critical for post operative nurses. This role allows nurses to contribute quality improvement in health care around the clock.

Need for the study : Delayed return of bowel movements is a transient impairment of bowel motility that occurs in approximately 90% of patients who undergo major abdominal surgery. Clinically, bowel discomfort is characterized by pain, abdominal distension, nausea, vomiting, stomach cramps, accumulation of gas or fluids in the bowel, absence of bowel sounds, flatus and bowel movements. Interestingly, the use of chewing bubble gum has emerged as a new, novel and simple strategy for preventing bowel discomfort.

Objectives

1) To assess the demographic variables among patients underwent specific abdominal surgeries.
2) To assess the effectiveness of bubble gum chewing in early return of bowel movements among experimental group.
3) To compare the return of bowel movements between the experimental group and control group.
4) To determine the association between the return of bowel movements with selected demographic variables.

Methodology

Research approach – Quantitative approach

Research design –Experimental study design

Study population – Patients underwent specific abdominal surgeries

Sample size – 60 samples (30: experimental and 30: control group)

Sampling technique – Purposive sampling technique

Tool – Demographic profile and Observational checklist

Data collection procedure – Patients who met inclusion criteria were selected as samples, following informed consent the patients were categorized into experimental and control group. Bubble gum chewing was initiated on the 1st post operative day, patients chewed three times a day (7am,12n,6pm) for half an hour for 3 days. The investigator maintained the observational checklist that records the following data of bowel sounds, flatus, appetite and complications. Assessment was done until the return of bowel movements. The investigator followed all ethical principles for collecting the data.

Data analysis : were analyzed using descriptive statistics such as mean and standard deviation and inferential statistics such as chi- square test and t- test.

Study findings : After bubble gum chewing the early return of bowel movements in experimental group, patients had 2.83 mean score where as control group had 2.03 mean score, so the difference is 0.80. The difference between experiment and control group was statistically significant.

Discussion : experimental group who chewed bubble gum thrice a day for three days showed significant results when compared to the control group who were on routine care and hence the hypothesis is proved.

Conclusion : Chewing bubble gum after specific abdominal surgery is a effective method to reduce the bowel discomforts. It is simple, effective and less expensive physiologic measure for promoting bowel function. After a large scale study the results can be implemented.

Key words – bowel motility, bubble gum, distension, flatus, effectiveness.

CHAPTER-I

INTRODUCTION

"I am only one, but still I am one. I cannot do everything, but still I can do something, and because I cannot do everything I will not refuse to do something that I can do"

- Helen keller.

Nurses are important to the health care system. Nurses today have many additional roles, especially nurses play the key role in meeting the needs of patients like patient safety, medication safety, communication and serving as part of the health care team. This role allows nurses to contribute quality improvement in health care around the clock. Post operative nursing is the important and challenging branch of clinical nursing. Especially caring of patients underwent major abdominal surgeries is critical for post operative nurses.

Delayed return of bowel movements is a transient impairment of bowel motility that occurs in approximately 90% of patients who undergo major abdominal surgery. This spontaneously resolves within 2-3 days. Normal resumption of bowel activity after abdominal surgery follows a predictable pattern the small bowel typically regains function within hours; the stomach regains activity in 1-2 days; and the colon regains activity in 3-5 days. The longest duration of ileus is noted to occur after colonic surgery.

Bowel motility is suppressed postoperatively owing to sympathetic hyperactivity and increased concentrations of circulating catecholamines. Pacemaker dysfunction owing to bowel manipulation is another postulated mechanism of postoperative return of bowel movements. In addition, electrolyte abnormalities, peritoneal and or retroperitoneal irritation, and narcotic analgesia

effects may contribute to bowel movements. The focus of more recent studies has been on neural and humoral factors. Surgeries also inhibit the pro-motility hormones like gastrin, neurotensin, and pancreatic polypeptide which also contribute to temporary impairment in bowel movement.

Clinically, pain, abdominal distension, nausea, vomiting, stomach cramps, accumulation of gas or fluids in the bowel, lack of bowel sounds, and a lack of flatus and bowel movements are certain symptoms. Other potentially adverse effects include increased postoperative pain; delay in resuming oral intake; poor wound healing; delay in postoperative mobilization; increased risk of pulmonary complications, including pneumonia, pulmonary embolism, and atelectasis; increased risk of deconditioning; prolonged hospitalization; decreased patient satisfaction; and increased health care costs.

The different treatment modalities have been devised since the late 1800s till date, to reduce the duration of bowel movements after specific abdominal surgeries and no specific interventions have been discovered that prevent and successfully resolve bowel movements. The exact mechanism is not known and they are multiple factors appear to affect the delay in return of gastrointestinal activity and therefore a multimodal approach is required to decrease the incidence of return of bowel movements.

Current treatment for return of bowel movements is primarily supportive and includes decompression of the gastrointestinal tract and resting the bowel through use of nasogastric tubes, nil by mouth, Intravenous fluids, analgesics, early ambulation with simple exercises and frequent position changing. Early enteral feeding of patients after surgery has proved to be effective, but not all patients tolerate early feeding, and it was reported that up to 20% of patients after major abdominal and pelvic surgery do not tolerate early feeding.

Interestingly, the use of chewing gum has emerged as a further new, novel and simple strategy for early return of bowel movements. There is evidence that chewing bubble gum has been in existence since the time of the ancient Greeks, who chewed on a substance made from the resin of the mastric tree.

Native Americans were also known to have chewed on a resin derived from the spruce tree. Before World War II chewing gum was made from a latex sap derived from the sapodilla tree, called chicle, and after World War II, artificial chewing gums were manufactured to replace chicle. 'Modern' chewing gums are essentially synthetic rubbers, that when chewed release their contained flavourings.

Bubble Gum chewing is a form of sham feeding in which, a food substance is chewed, but does not enter the stomach; it is thought that sham feeding accelerates bowel function. It achieves this by a combination of mechanisms, including increasing the vagal cholinergic stimulation of the gut, which in turn leads to the release of gastrointestinal hormones such as gastrin, neurotensin and pancreatic polypeptide. The studies to date have reported no adverse effects after the use of chewing bubble gum to stimulate sham feeding in patients after surgery.

Chewing bubble gum is inexpensive, safer and its beneficiary effects motivated the investigator to study the effectiveness of bubble chewing gum in early return of bowel movements after specific abdominal surgeries.

1.1 Need for the study

With increasing pressure on limited health care resources and continually needing to improve the quality of patients perioperative experience, simple interventions with maximal benefit were encouraged. Delayed return of bowel movements remains a stubborn, painful, and costly postoperative patient care

problem (LeBlanc-Louvry et al. 2002; Livingston & Passaro, 1990; Luckey et al. 2003; Schuster & Montie, 2002) and more studies are needed to examine and test safe, cost-effective interventions for its prevention and treatment. In that chewing bubble gum is a simple and a non expensive intervention that limits the discomfort of bowel movements and reduce the length of postoperative stay.

Return of bowel movements is regarded as an inevitable response to the trauma of abdominal surgery and is a major contributing factor to postoperative pain and discomfort associated with abdominal distension, nausea, vomiting, and cramping pain. In the United States, the problem has been estimated to account for up to $1 billion in health care expenditure. In a study by Schuster et al, based on an estimate of $0.04 per stick of chewing bubble gum, an outlay of $47 531 per year in bubble gum would save $118 828 000 .

Healthy bowel function is a result of the combination of many factors, including the enteric and central nervous systems, hormonal influences, neurotransmitters, and local factors including inflammatory pathways. Additional problems in the postoperative patient include the need for analgesia for post operative pain.

Return of bowel movements is a major health problem because it places postoperative abdominal surgery patients at increased risk for development of circulatory and pulmonary complications associated with reduced physical activity due to pain and other immobilizing symptoms. Previous research provides overwhelming evidence that this extends the affected patient's post-surgical recovery period for several days (Prasad & Matthews, 1999), significantly delaying the healing process. Therefore, no matter whether return of bowel movements is considered normal or abnormal, it has significant economical impacts.

Table- 1: Major Abdominal Surgeries at Rajiv Gandhi Government General Hospital, Chennai.

YEAR	GENERAL SURGERY	SURGICAL GASTROENTEROLOGY
2010	1490	410
2011	1363	402
2012	1280	422
2013	1140	480
2014	1022	428

Source: Medical Records Department, Rajiv Gandhi Government General Hospital, Chennai.

As cited from the above table, 90% of these patients had kept in nil per oral with NG tube . patients had extreme discomfort because of abdominal distension, pain, nausea, vomiting and increased thirst.

The investigator had observed the patients discomforts and sufferings, during her postings in the post operative ward and performed all the routine interventions like maintaining nil per oral, naso gastric tube decompression and early ambulation.

Although the patients symptoms are not alleviated. The strong support from the supporting literatures, made the investigator to examine the effectiveness of simple and inexpensive bubble gum chewing to promote patients comfort and early return of bowel movements.

1.2 Statement of the problem

"A study to assess the effectiveness of bubble gum chewing in early return of bowel movements among patients underwent specific abdominal surgeries, at Rajiv Gandhi Government General Hospital , Chennai."

1.3 Objectives

- To assess the demographic variables among patients underwent specific abdominal surgeries.
- To assess the effectiveness of bubble gum chewing in early return of bowel movements among experimental groups.
- To compare the return of bowel movements between the experimental group and control group.
- To determine the association between the return of bowel movements with selected demographic variables.

1.4 Operational definitions

- ***Assess* -** It refers to the process of the critical analysis, evaluation and judgment of the status or quality or a particular condition or situation.
- ***Effectiveness* –** It refers to the goodness of bubble gum chewing in early return of bowel movements.
- ***Bubble gum* –** It refers to sugarless gum preparation that is made of chicle for chewing.
- ***Bowel movements* –** It refers to an act of defecation.
- ***Specific abdominal surgeries* -** Refers to an incision into abdominal cavity and opening the peritoneum. The surgeries included in the study were, gastrectomy, colectomy, whipple's procedure and frey's procedure.

1.5 Assumption

The study assumes that :

Chewing bubble gum helps in early return of bowel movements among patients underwent specific abdominal surgeries.

1.6 Hypothesis

H1 - There will be significant difference between bubble gum chewing and early return of bowel movements among patients underwent specific abdominal surgeries.

H2 - There will be significant association between the selected demographic variables and early return of bowel movements among patients underwent specific abdominal surgeries.

1.7 Delimitations

- ✓ Study sample was 60.
- ✓ Study conducted only in surgical post operative wards at Rajiv Gandhi Government General Hospital, Chennai.
- ✓ The study period was one month only.

CHAPTER – II

REVIEW OF LITERATURE

2.1 literature review related to the study

The task of reviewing literature involves the identification, selection, critical analysis and written description of existing information on the topic of interest. In this chapter, an attempt has been made to bring out the available literature, which helps in projecting the widened perspectives of the study.

This chapter consists of three sections

Section : A – literatures related to delayed bowel movements.

Section : B – literatures related to major abdominal surgeries.

Section : C – literatures related to the effectiveness of bubble gum.

Section : A – literatures related to delayed bowel movements

Mirza K. Baig et al (2004) conducted a retrospective and prospective studies postoperatively at Chicago USA, some patients experience inhibition of coordinated bowel activity, which causes accumulation of gas, resulting in nausea, vomiting, abdominal distension and pain. The pathophysiological causes are multifactorial. The results showed as decreased use of nonsteroidal drugs and placing a thoracic epidural with local anaesthesia when possible and naso gastric decompression and electrolyte imbalances are also considered effective methods of to improve the bowel function postoperatively.

Jason Hannah et al (2003) conducted a systematic review on post operative ileus, it refers to the obstipation and intolerance of oral intake due to non mechanical factors that disrupts the normal motor activity of the gastro intestinal tract. Post operatively it is due to the gut dysmotility. In randomized

trails of patients undergone major abdominal surgeries, time of recovery of the GI tract is assessed as time of solid food, either the time of flatus or bowel movement is considered. The results showed majority of 60% had delayed bowel movements.

Abdullah Demir (2001) conducted a prospective study involved 103 patients who had undergone major abdominal surgeries. The aim of the study is examine the extended post operative ileus and its risk factors. The study results showed unnecessary use of analgesics for pain tolerance , prolonged naso gastric decompression have direct negative effects on gastrointestinal motility. Considering that an exact treatment has not been established and in light risk factors mentioned above. The prevention of post operative ileus is the most effective way of coping with intestinal dysmotility.

Section : B – literatures related to major abdominal surgeries

EW Steyerberg et al (2008) conducted a meta analysis on prevention of postoperative peritoneal adhesions significant health problem after major abdominal surgeries, at Los Angeles. Based on the experts opinion intra operative prevention principles were meticulous hemostasis, avoiding excessive tissue dissection and ischemia. The results showed the use of bio absorbable mechanical barriers in the appropriate cases reduce the incidence of severity of peritoneal adhesions.

Frank Jansen et al (2004) conducted a study on complications of open verses laparoscopic surgeries at 74 hospitals in Netherlands, teaching vs non teaching hospitals, number of procedures performed. However the open technique were 579 and the laparoscopic surgeries were 854, the results showed the complication rate of 0.28% in the open technique and 0.31 in the laparoscopic procedures. When it is performed on the selected patients the incidence of complications is reduced is reduced in both open and laparoscopic techniques.

M.A. Carbajo et al (2000) conducted a randomized trial over a 3- year period to two homogenous groups to be operated on for major ventral hernias with mesh at Campo Hospital Spain. Half of them were operated upon laparoscopically and rest with open surgery. Early and longer-term complications were analyzed, as were operative time and postoperative hospital stays. The results of the study were the group operated with laparoscopically presented with lower rate of post operative complications when compared to the conventional group.

Section : C – literatures related to effectiveness of bubble gum in return bowel movements

Ngowe MN et al (2010) conducted a prospective randomized trial to study the effectiveness of chewing bubble gum on reduction of post operative ileus after open appendectomy in a University teaching Hospital and 46 patients were divided into chewing gum group (23 patients) and control group (23 patients) and the chew group patients chewed sugarless gum for 30 minutes thrice daily until resumption of intestinal tract transit and timing of first flatus, first bowel movements, hospital duration and complications are noted in both groups. The result shows that first passage of flatus, bowel movements, hospital stay in the control and experimental group : 3.0 days vs 2.2 days; 3.3 days vs 2.3 days; 6,7 days vs 4.9 days respectively.

Hocevar et al (2010) performed a Meta- analysis to determine the effectiveness of chewing bubble gum in shortening the duration of postoperative ileus in patients undergoing Abdominal surgeries and creation of a stoma and they systematically reviewed the electronic database CINAHL and MEDLINE from January 1996 to November 2009, using the terms ileus and chewing gum, and evaluated the following outcome measures are (1) time of passage of stools (2) time of passage of flatus (3) length of hospital stay. Three meta- analysis and

4 studies met inclusion criteria and results of the meta – analyses support the use of chewing gum for treatment of postoperative ileus.

Shang H (2010) conducted a prospective, randomized, controlled trial to study the effectiveness of gum chewing on post operative ileus after caesarean section at, Shanghai, China. 388 patients were randomly assigned to a gum-chewing group (193 patients) or a control group (195 patients) patients in the gum-chewing group chewed gum three times for a half an hour per day from the first hour of immediate post operative period and until the first defecation or discharge. Groups were comparable in age, weight, height, weeks of gestation, duration of surgery, and type of anesthesia. The results shows that bowel sounds, first passage of flatus in the control and experimental group: 23.3 hours vs 18.2 hours; 39.9 hours vs 34.4 hours respectively.

Shhnam Askarpour et al (2010) conducted a clinical trial to compare the effects of the early feeding, chewing gums, naso-gastric decompression, NPO and laxative on post operative ileus and 96 patients open cholecystectomy in Imam Khomeini Hospital from July 2006 to February 2007 were included in the study, after surgery, patients were randomly divided into 4 groups (laxatives, NPO, early feeding, and chewing gums) bowel sounds were checked and the results shows the significant difference between laxative group and gum group. The average times of hospital stay were shortest for the feeding and gum group.

Fitzgerald JE and Ahmed I (2009) performed a systematic review and meta-analysis of chewing gum therapy in the reduction of post operative paralytic ileus followinh gastrointestinal surgery was undertaken using MEDLINE, Embase, Cochrane Controlled Trials Register, and reference lists. Seven studies with 272 patients were included. The results shows time to first flatus has reduced to 17% and time to first bowel motion has reduced to 22% and length of stay shows 12% reduction.

Johnson MD and Walsh RM (2009) conducted a literature review to search for current therapies to shorten post operative ileus. They systematically reviewed the electronic database, PUBMED, MEDLINE fro Dec 2004 to Aug 2008 and they suggested that to shorten the duration of postoperative ileus, we may need to establish standard plans of care that favour earlier feeding, use of naso-gastric tubes only on a selective basis, and prokinetic drugs as needed and gum-chewing immediately after surgery is a cheap and harmless strategy for reducing postoperative ileus.

Yeh YC et al (2009) conducted a Meta-analysis to summerise the evidence on pharmacological options in preventing post operative ileus. The data sources were the Cochrane Database of reviews and OVID database and food and drug administration (FDA) web site were searched (1950 – April 2009) using the term postoperative ileus. Three meta-analysis, 2 on gum-chewing and 1 on alvimopan, and 18 clinical trials data were synthesized and suggested only gum chewing and alvimopan were effective in preventing post operative ileus.

Abd-El-Maebound KH et al (2009) conducted a randomized controlled trail to evaluate the efficacy and safety of postoperative gum chewing on the recovery of bowel motility after caesarean section under GA randomized into two groups, group A (93 women) who received one stick of sugarless gum for 15 minutes evry 2 hours after surgery and group B (107 women) had traditional management at Ain Shams University, Egypt. The results shows that the mean postoperative time interval to first hearing of normal intestinal sounds (10.9 vs 15.6 hours) passage of flatus (17.9 vs 24.4 hours) defecation (21.1 vs 30 hours) and discharge from the hospital (40.8 vs 50.5 hours) were significantly shorter in group A.

Nobel EJ et al (2009) conducted a systematic review and meta-analysis to determine the use of gum chewing for reduction of post operative ileus. They

identify all randomized controlled trials comparing gum chewing with standard care after elective intestinal surgery and searched electronic database and reference lists. The main outcomes of hospital stay and clinical complication rates. They identified nine eligible trials that had enrolled a total of 437 patients. Pooled estimates showed a reduction in time to flatus by 14 h, time to bowel movement by 23h, and a reduction in length of hospital stay by 1.1 days and concluded that chewing sugarless gum is associated with improved outcomes.

Cavusoglu YH (2009) conducted a prospective randomized controlled trial to study the effectiveness of gum chewing on post operative ileus after intestinal resection in children in Turkey. From June 2006 and March 2008 the patients randomized to one of two groups. Group one consisted of patients receiving standardized postoperative care plus gum chewing three times per day, for an hour, each day n=15 group two consist of patients receiving only standardized postoperative care control group n=15. The results shows that the time to first flatus was 35.73 h in the gum-chewing group and 42.00 h in the control group. The time to first bowel movements was 56.27 h in the gum-chewing group and 63.00 in the control group. The length of hospital stay was 5.80 days for the gum- chewing group and 6.67 days for the control group.

Crainic c et al (2009) conducted prospective, randomized control trail to compare the methods to facilitate postoperative bowel function at a community- based teaching hospital. 34 patients undergoing elective open sigmoid resection for recurrent diverticulitis or cancer were randomized to a gum – chewing group (n=17). In the gum- chewing group, patients chewed sugarless gum 3 times daily for 1 hour each time until discharge. Primary endpoints were first feelings of hunger, time to first flatus, time to first bowel movement, length of hospital stay and complications, he results shows that the first passage of flatus (postoperative hour 65.4 vs 80.2, first feelings of hunger

were felt on postoperative hour 63.5 vs 72.8 hr, first bowel movement and total length of hospital stay (4.3 vs 6.8 days) in th control and experimental group.

Hoon Choi (2009) conducted a prospective randomized comparative study to determine the effectiveness of chewing gum on bowel motility in patients. After open or robotic radical cystectomy for bladder cancer. From July 2007 to September 2009, they randomized open radical cystectomy (ORC) 17 Patients into the Group AI and 17 patients in Group II. The median time to flatus and to bowel movements were significantly reduced in chewing gum group compared with the control patients: 57.1 vs 69.5 hours 76.7 vs 93.3 hours. No adverse effects were observed with chewing gum and they concluded that chewing gum had stimulatory effects on bowel motility after cystectomy and urinary diversion.

Sanjay purkayastha (2008) conducted a meta-analysis of randomized studies evaluating chewing gum to enhance postoperative recovery following colectomy and to compare outcomes following abdominal surgery with or without the use of chewing gum in the early postoperative period. The data sources were MEDLINE , Embase, Ovid, and Cochrane databases. Study selection was randomized controlled trials reporting 1 or more outcomes related to functional postoperative recovery. Five trials (158 patients) satisfied the inclusion criteria. Time (in days) for the patients to pass flatus and the time until the first bowel movements were significantly reduced in the chewing gum group compared with controls. Postoperative length of stay was also reduced in the chewing gum group by longer than 1 day.

De castro SM et al (2008) performed a systematic review and meta-analysis of randomized controlled trials comparing the efficacy of gum chewing after colorectal surgery to a standard control for the amelioration of postoperative ileus, expressed as time to flatus, time to defecation and overall

hospital stay at University of Amsterdam, Hilversum. Five randomized controlled trials with a total number of 158 patients were found. The time to flatus was significantly shorter. There was a non-significant trends toward a shorter postoperative hospital stay.

Meyer JP Fawcett D (2008) conducted a study at Department of Urology , Churchill Hospital, Headington to prove the use of chewing gum for preventing post operative ileus. From July 2007 to September 2009, they randomized open radical cystectomy (ORC) patients n Group I and Group II and the results shows that the total of 32 ORC that the median time to flatus and to bowel movements were significantly reduced in chewing gum group compared with the control patients: 57.1 vs 69.5 hours 76.7 vs 93.3 hours.

Mikel et al (2008) conducted a systematic review of all relevant trials on chewing gum to reduce postoperative ileus after colorectal resection. All published trials that compared the additional use of gum chewing with standard postoperative management were identified from Ovid, MEDLINE, EMBASE,CINAHL between 1991 to 2007. Five randomized, controlled trials with 158 (94 males) patients with mean age of 61.9 years included. 78 patients received an addition of gum chewing and 80 had standard postoperative care for colorectal resection. With combined standard postoperative care and gum chewing, the patients passed flatus 24.3 percent earlier and had bowel movements 32.7 percent earlier. They were discharged 17.6 percent earlier than those having ordinary postoperative treatment.

Kristensen SD et al (2008) performed a new approach to reduce patient discomfort and durability of POI. One of the latest approach attempting to reduce POI is gum chewing. Four controlled studies have been published on the subject and the result of the two of these studies found a significant decrease in time until first passage of flatus and defecation. The remaining two studies

showed no significant difference, but a slight tendency towards a reduction of POI. So gum chewing to be proved as a effective method to reduce the post operative ileus duration.

Kouba EJ et al (2007) conducted a cohort study to determine gum chewing in the immediate postoperative period facilities a return to bowel function in patients undergoing cystectomy and urinary diversion at Urology Surgery, The University of North California, USA. A total of 102 patients, the first cohort of patients underwent surgery between July 2004 and August 2005 and served as a comparison (control) group in which no gum was dispensed. The second cohort underwent surgery during September 2005 to July 2006. These patients were given chewing gum to begin on postoperative day 1 outcome measures included time to flatus, time to bowel movement, length of hospital stay, and complications and the results shows the time to flatus was shorter in patients who received gum compared with controls(2.4 vs 2.9 days, also time to bowel movements was reduced in patients who received gum (3.2 vs 3.9 days) there was no significant difference in length of hospital stay between gum-chewing patients and controls (4.7 vs 5.1 days).

Stewart D and Waxman K (2007) analysed the methods for the management of post operative ileus at Department of Colorectal Surgery , Washington University, St. Louise, MO, USA postoperative ileus is an abnormal pattern of gastrointestinal motility that is common after both abdominal and non-abdominal surgeries. There are many cause of ileus, including postoperative pain and the use of narcotics for analgesia, electrolyte imbalances, manipulation of bowel during surgery. Despite its prevalence, there is still no reliable treatment to prevent ileus or shorten its course. This article discuss the causes of postoperative ileus and the treatment options currently available. The literature of early feeding, gum chewing, and the use of tube

feedings is reviewed. In addition, new and experimental drugs currently in development are discussed.

Quah HM (2007) Conducted a prospective, randomized trial to determine whether gum chewing in the chewing in the immediate post operative period facilitated recovery from post operative ileus from resection for left sided colorectal cancer. 38 patients who are undergoing open surgery were allocated to standard post operative care or to standard post operative care plus the immediate use of chewing gum and the results shows control patients passed flatus by mean of 2.7 days and feces by 3.9 day for the treatment group, this was 2.4 day and 3. Day respectively. Length of hospital stay was 11.1 days for control group and 9.4 days for the treatment group.

Heather leier (2007) conducted a meta-analysis to discuss the pathophysiology of postoperative ileus (POI) and the addition of gum chewing to a multimodal treatment plan Top of form 2 data sources include the review of current literature of the pathophysiology of POI, multimodal treatment options , and current research on gum chewing its effect on the prevention of POI, and concluded that gum chewing decreases time to flatus and first defecation after surgery. Studies indicate that gum chewing can decrease the length of hospital stay by 1 day. There were no documented adverse effect of gum chewing. The addition of gum chewing to a multimodal treatment programme assist with increasing patient comfort, satisfaction, and decreasing healthcare expenditures.

Laurie Barclay (2006) conducted a prospective randomized trial to study the effectiveness of gum chewing on post operative ileus at a community- based teaching hospital and 34 patients undergoing elective open sigmoid resections for recurrent diverticulitis or cancer were randomized to a gum chewing group (n=17) or a control group (n=17). In the gum-chewing group, patients chewed sugarless gum 3 times daily for 1 hour each time until discharge. Primary

endpoints were first feelings of hunger, time of first flatus, time of first bowel movements, length of hospital stay, and complications. Compared with the control group, the gum-chewing group fared better in terms of first passage of flatus, (postoperative hour 65.4 vs 80.2) first bowel movement (postoperative hour 63.2 vs 89.4) and total length of hospital stay (4.3 vs 6.8 days)

Hirayama I et al (2006) conducted a Meta-analysis to determine the usefulness of gum-chewing for improving the GI motility. 22 patients with colorectal cancer were divided into two groups, gum-chewing and control groups. From after their operation, chewing gum was given to the former group three times a day. The results shows first passage of flatus and stools in the chewing gum group after operation were 35 and 50 hours, respectively sooner, when compare to the controls and they concluded that gum-chewing provides a simple and effective method to improve the post-operative state of patients.

Crystal phend (2005) concluded a prospective, randomized , controlled trial to study the effectiveness of gum chewing on post operative ileus and 88 patients who underwent open or laparoscopic colectomy were randomized to receive either sips of clear liquids or one stick of gum chewing group had significantly earlier return of bowel function, the first defecation in the gum group was at 2.6 days compared to 3.3 days for clear liquids group. Length of hospital stay was significantly improved in the gum chewing laparoscopic surgery group (4.0 days vs 5.3 days) among patients undergoing open colectomy , there was virtually no difference in either time- to hospital discharge, with 5.6 days in the gum group vs 5.3 days in the clear liquid

2.2 CONCEPTUAL FRAMEWORK

The study is based on the concept that bubble gum chewing helps in early return of bowel movements among patients underwent specific abdominal surgeries. The investigator adopted the Wiedenbach's theory of helping art of clinical theory, 1964 for conceptual framework.

Wiedenbach's prescriptive theory directs action toward an explicit goal. It consists of three factors: central purpose, prescription and realities. A nurse develops a prescription based on a central purpose and implements it according to the realities of the situation.

Ernestine Wiedenbach proposed a prescriptive theory for nursing, which is described as conceiving of a desired situation and the ways to attain it.

According to this theory, nursing practice consists of three steps, which include

Step I: Identifying the need for help

Step II: Ministering the needed help

Step III: Validating that the need for help was met

This theory views nursing as an art based on a goal or central purpose. It consists of three factors: central purpose, prescription and realities.

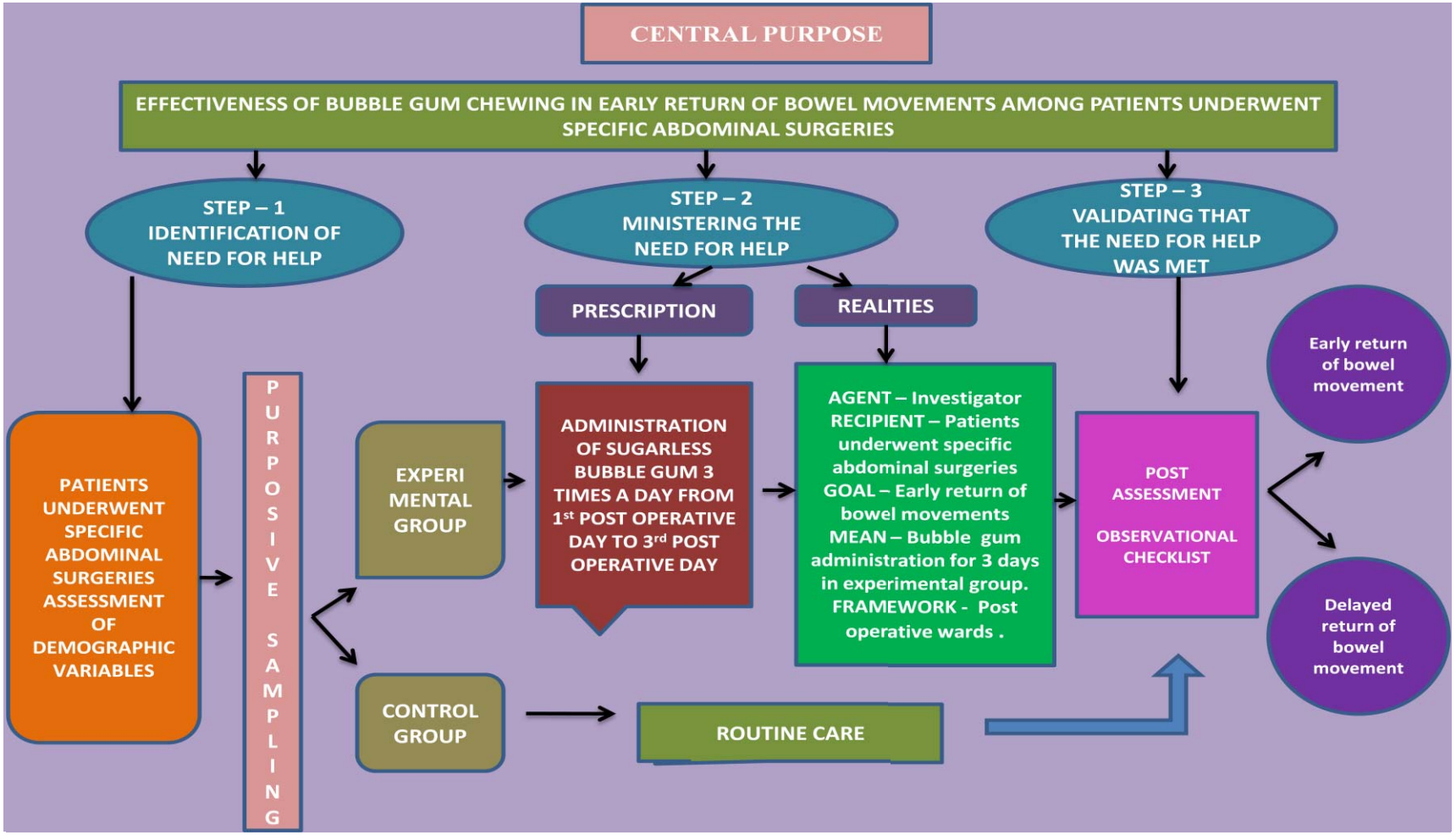
Central purpose refers to what the nurse wants to accomplish. It is the overall goal towards which a nurse strives. In this study the main central purpose is to assess the effectiveness of bubble gum chewing in early return of bowel movements among patients underwent specific abdominal surgeries.

In identifying the need for help, the nurse identifies the need for help by selecting the samples based on criteria for sample section. Patients underwent specific abdominal surgeries are assigned to experimental and control group and

effectiveness of bubble gum chewing is assessed. Ministering the needed help refers to the provision of required help for the identified need. It has two components i) Prescription ii) Realities

Prescription refers to the plan of care for a patient. In this study, the investigator provides bubble gum to the experimental group and assess the duration of early return of bowel movements in the experimental and in the control group. Realities refers to the physical, psychological, emotional and spiritual factors that affect the nursing action. The five realties identified by Wiedenbach's theory are agent, recipient, goal, means and frame work. In this study agent is the investigator, recipient is patients underwent specific abdominal surgeries, Goal is early return of bowel movements, Means is chewing bubble gum, Frame work is post operative ward.

In validating that the need for help was met. The nurse validated the ministered help by comparing the duration of return of bowel movements in the experimental and in the control group.



Figure–2.1 : Modified Wiedenbach's Helping Art Of Clinical Nursing theory

CHAPTER-III

RESEARCH METHODOLOGY

This chapter deals with the methodology followed to assess the effectiveness of bubble gum chewing in early return of bowel movements among patients underwent specific abdominal surgeries, at Rajiv Gandhi Government General Hospital, Chennai.

Research methodology includes research design, variables of the study, setting, population,criteria for sample selection, sampling technique, sample size, development and description of the tool, content validity, pilot study, procedure for data collection and plan for data analysis.

3.1 Research approach

An quantitative approach was considered to be the most appropriate to achieve the objectives of the study. It also helps the researcher with the suggestions of possible conclusions to be drawn from the data.

3.2 Data collection period

The study was conducted for the period of one month from 16/7/2015 to 15/8/2015.

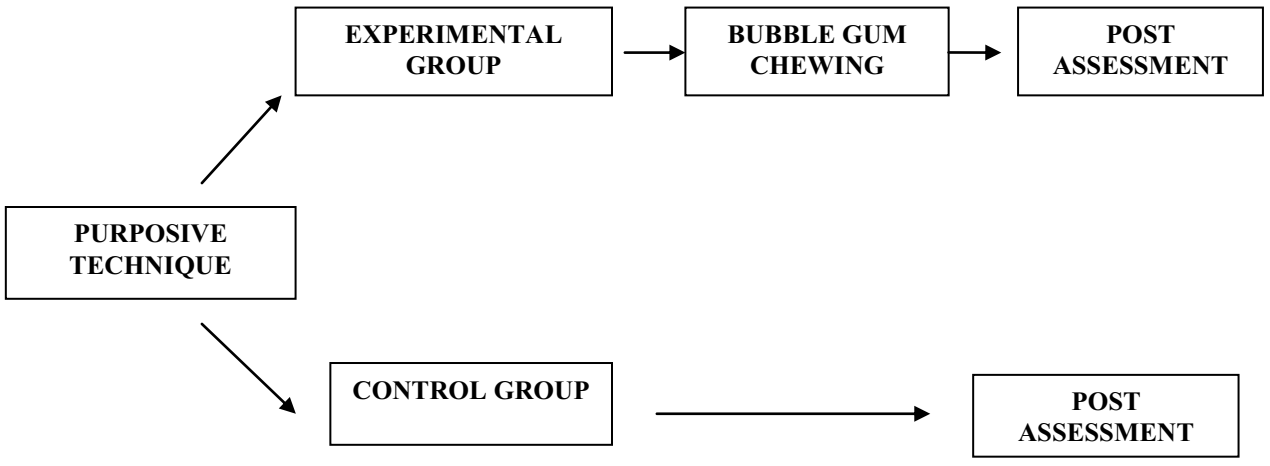
3.3 Study setting

The study was conducted at the surgical post-operative wards of Department of General Surgery and Department of Surgical Gastroenterology at Rajiv Gandhi Government General Hospital, Chennai. In Department of General surgery, approximately two to three major abdominal surgeries were done daily and in the Department of Surgical Gastroenterology four to five major abdominal surgeries done on every Tuesday, Thursday and Saturday at Rajiv Gandhi

Government General Hospital Chennai, there are 3 post operative wards [251(Male post operative ward)- 14 beds, 252(Female Post operative ward- 7 beds, 253(Surgical Gastroenterology male & female post operative ward)- 4 beds] for Department of General surgery and for the Department of Surgical Gastroenterology and 1 Surgical Intensive care unit(SICU) – 15 beds . Apart from that, general post operative beds are there along with pre-operative beds in pre-operative wards. Totally 40 post operative beds are there for patients who underwent major surgeries that includes 25 beds are post operative beds and 15 beds are Surgical intensive care unit (SICU) beds. Patients stay in post operative ward after major abdominal surgeries is approximately 3- 5 days , depending upon their site of surgery, nature of surgery, associated co-morbidities and post operative complications.

3.4 Study design

The research design used in this study is experimental study design – post test only control design.



Experimental group

Patients were selected for experimental group was given Bubble Gum to chew , three times daily in the morning(7am), afternoon(12n) and in the evening

(5pm) along with routine post- operative care that includes keeping the patients in nil per oral, gastric decompression by naso gastric tube , oral hygiene and early mobilization and treatment.

Control group

Control group patients received routine post – operative care and treatment, but not given bubble gum.

3.5 Study population

The population includes the patients underwent specific abdominal surgeries (Colectomy, Gastrectomy,Whipple's procedure and Frey's procedure) and admitted to the Surgical Post operative wards (251,252,253) of Department of General surgery and Department of Surgical Gastroenterology , at Rajiv Gandhi Government General Hospital, Chennai.

3.6 Sample size

The sample size for this study is composed of 60 adult subjects. 30 for each experimental and control groups.

3.7 Sampling criterion

The sample was selected based on the following inclusion and exclusion criteria

3.7.1 Inclusion Criteria

- ✓ Patients underwent elective specific surgeries (colectomy, gastrectomy, whipple's procedure and frey's procedure).
- ✓ Patients who are able to chew bubble gum.
- ✓ Patients who are willing to participate in the study.
- ✓ Patients who are oriented and able to speak and understand Tamil or English.

3.7.2 Exclusion Criteria

- ✓ Patients who are unconscious, disoriented and confused.
- ✓ Patients who are seriously ill on oxygen therapy.
- ✓ Patient underwent emergency abdominal surgeries.
- ✓ Patients < 18 years of age.

3.8 Sampling technique

The sampling technique used for this study is purposive sampling technique. The patients who met the inclusion criteria were selected.

3.9 Research variables

Research variable are the attributes, qualities, properties, characteristics that are observed or the measured in a natural setting without manipulation and establishing cause and effect relationship.

Independent Variable : Chewing Gum
Dependent Variable : Bowel movement

3.10 Development and description of the tool

After an extensive review of literature and discussion with the experts the following tools were prepared to collect data.

3.10.1 Development of tool

The tool was developed after extensive review of literature, internet search and discussion with the experts (Medical, Nursing and Statistician) in order to develop guidelines for timing and duration of the Bubble gum chewing. Demographic data and clinical data was obtained from the patients.

3.10.2 Description of the tool

The tool consisted of two sections.

Section- A

Demographic data

It includes age, sex and personal habits, body mass index, activities of daily living, date of surgery, diagnosis, previous bowel habit, and date of discharge.

Section-B

It consists of observational checklist that includes the signs and symptoms of bowel movements (bowel sounds, passing flatus, appetite) , date of discharge and post operative complications.

Scoring Technique

The observational checklist consists of questions with the score. The scores is categorized as follows.

Interpretation of score

DAYS	SCORES
Within 2 days	3
4 th day	2
5 th day	1
More than 5 days	0

3.10.3 Content validity

The content validity was obtained from Head Of the Department of the Department of Surgical Gastroenterology, Rajiv Gandhi Government General Hospital, Chennai and Medical Surgical Nursing experts from various institutions. Experts were asked to give their opinions and suggestions about content of the tool. These modifications were incorporated in the final preparation of tool.

3.11 Ethical consideration

The study objectives, intervention, tools and data collection procedure were approved by the experts of Institutional ethics committee, Madras Medical College, Chennai and permission for the main study was obtained from the Head Of the Department of General surgery and Surgical Gastroenterology at Rajiv Gandhi Government General Hospital, Chennai. An informed consent was obtained from the each study subject before starting the data collection. Assurance was given to the patients that confidentiality and privacy would be maintained.

3.12 Pilot study

A formal permission was obtained from the Head Of the Department's of General Surgery and Department of Surgical Gastroenterology , Rajiv Gandhi Government General Hospital, Chennai. The pilot study was done for a period of three days with 6 samples using purposive sampling technique. Among 6 samples, three patients were in experimental group and three patients in the control group. Analysis of the findings showed high consistency and feasibility of the study and after which the plan for actual study was planned. Pilot study samples were not included in the main study.

3.13 Reliability

After pilot study reliability of the tool was assessed by using Test Retest method and its correlation coefficient value is 0.80. This correlation coefficient is very high and hence the tool is found to be reliable.

3.14 Data collection procedure

The patients who met the inclusion criteria were selected with the age, sex, bowel habits, body mass index and the type of surgery performed are selected as samples. Following informed consent, the patients were categorized. And

informed that they can withdraw from the study at any time. Bubble Gum chewing has been started on the morning of first postoperative day in the elective surgeries, after 24 hours of surgery. Patients chewed sugarless bubble gum 3 times daily for half an hour in the morning (7-am), afternoon(12n), and evening(5pm) until third post operative day . The investigator maintained the observational checklist that records the following data of first bowel sounds, flatus, bowel movement, and return of appetite and length of the hospital stay and any post operative complications. Following assessment was done. The investigator followed all ethical principles for collecting the data.

Interventional protocol

Protocol	**Experimental group**	**Control group**
Place	Surgical post operative wards	Surgical post operative wards
Recipient	Patients underwent specific abdominal surgeries	Patients underwent specific abdominal surgeries
Dosage	3 sugarless bubble gum per day	Routine post operative care
Frequency	Thrice a day for half an hour	-
Time	7am, 12n, 5pm	-
Duration	3 days	-
Administered by	Investigator	-

3.15 Data entry and analysis

The data were analyzed using descriptive statistics such as mean, standard deviation, frequency, percentage and inferential statistics such as t- test, and chi-square test.

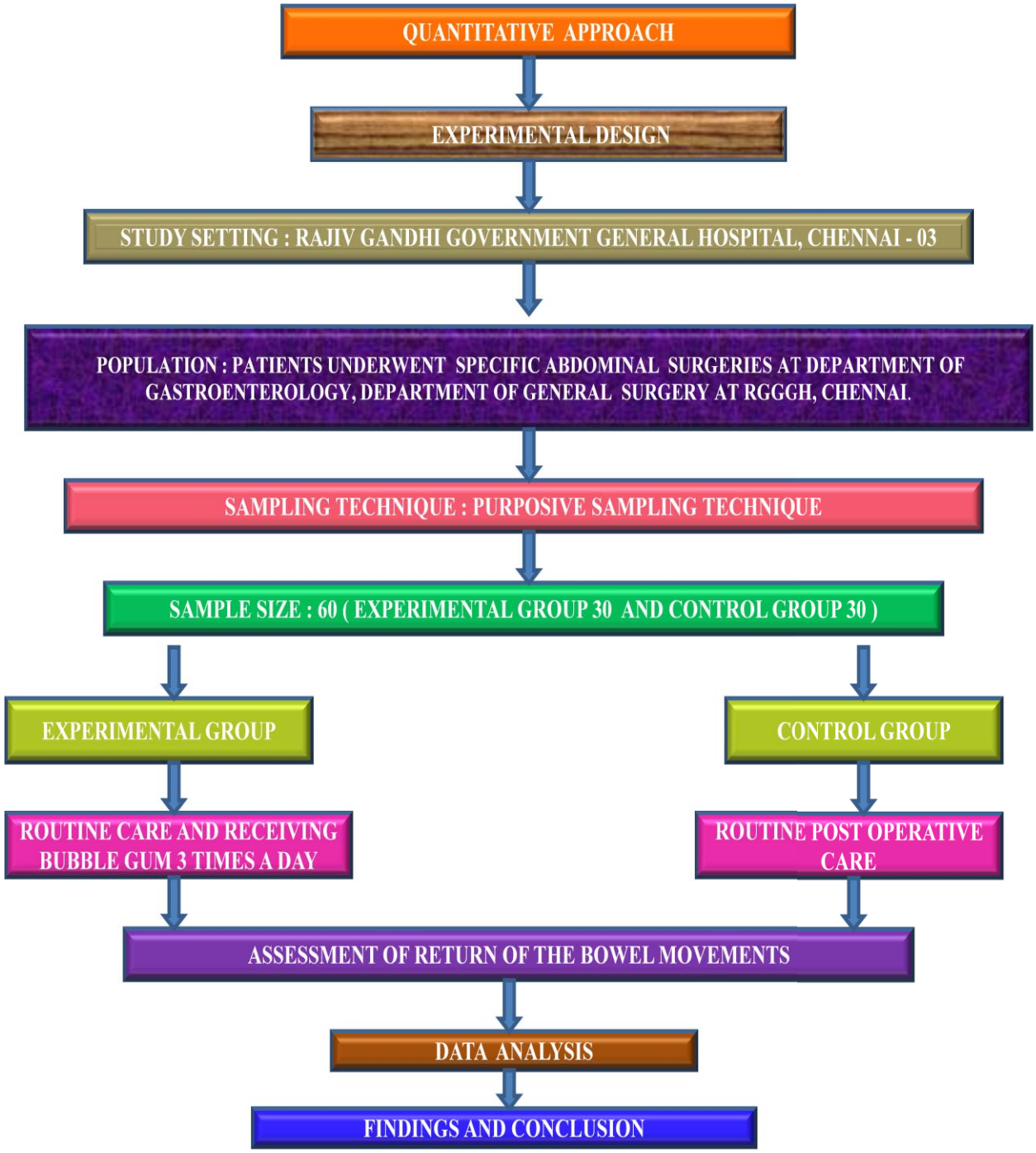


Figure -3.1: Schematic Representation Of Research Methodology.

CHAPTER – IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the analysis and interpretation of data collected from 60 patients who underwent specific abdominal surgeries, to assess the effectiveness of bubble gum chewing on early return of bowel movements, at Rajiv Gandhi Government General Hospital, Chennai.

The data findings based on the descriptive and inferential statistical analysis are tabulated and presented according to the objectives under the following headings.

Organisation of data

Section-A: Distribution of demographic variables of patients underwent specific abdominal surgeries.

Section-B : Effectiveness of bubble gum chewing in early return of bowel movements among experimental groups.

Section-C : Comparison of the return of bowel movements between the experimental group and control group.

Section-D : Association between the return of bowel movements with selected demographic variables in experimental group.

Section-E: Association between the return of bowel movements with selected demographic variables in control group.

Section – A : Distribution of demographic variables

Table 4.1: Demographic profile of patients underwent specific abdominal surgeries.

Demographic variables		Experimental group		Control group		Chi square test
		frequency	In %	frequency	In %	
Age	21 -30 years	6	20.0	6	20.0	$\chi 2=0.14$ p=0.98
	31 -40 years	10	33.3	9	30.0	
	41 -50 years	9	30.0	9	30.0	
	> 50 years	5	16.7	6	20.0	
Gender	Male	20	66.7	18	60.0	$\chi 2=0.28$ p=0.59
	Female	10	33.3	12	40.0	
Personal habits	Smoking	3	10.0	4	13.3	$\chi 2=0.42$ p=0.93
	Alcohol	5	16.7	4	13.3	
	Tobacco / betel chewing	3	10.0	4	13.4	
	None of the above	19	63.3	18	60.0	
Bowel habits	Regular	26	86.7	26	86.7	$\chi 2=0.00$ p=1.00
	Irregular	4	13.3	4	13.3	
Complications	Post operative fever	2	6.7	5	16.7	$\chi 2=5.01$ p=0.08
	Wound infection	0	0.0	3	10.0	
	Nil	28	93.3	22	73.3	
Name of surgery	Colectomy	12	40.0	8	26.7	$\chi 2=2.13$ p=0.54
	Gastrectomy	10	33.4	10	33.3	
	Whipples procedure	4	13.3	8	26.7	
	Freys procedure	4	13.3	4	13.3	
Body Mass Index	Under weight	8	26.7	9	30.0	$\chi 2=0.81$ p=0.66
	Normal	19	63.3	16	53.3	
	Obese	3	10.0	5	16.7	
Activity of living	Independent	21	70.0	15	50.0	$\chi 2=2.61$ p=0.27
	Dependent	6	20.0	11	36.7	
	Border-line	3	10.0	4	13.3	

The above table shows that with regard to **age**, in experimental group the majority 33.3 % were in the age group between 31-40 years and in the control group, majority 30.0% were in the age group between 31-50 years.

With regard to **gender**, in experimental group majority 66.7% were males and in the control group, majority 60.0% were males.

With regard to **personal habits** in experimental group 63.3% and in the control group 60.0% did not have the habits of smoking, alcohol, tobacco / betel chewing.

With regard to **bowel habits** 86.7% in both experimental and control group have regular bowel habits.

With regards to the **complications** the majority 93.3% did not have any complications in the experimental group and 73.3% did not have any complications in the control group.

With regards to the **name of surgery** the majority 40.0% underwent colectomy in the experimental group and 33.3% underwent gastrectomy in control group.

With regards to the **body mass index** 63.3% in the experimental group were normal and 53.3% were normal in the control group.

With regards to the **activity of daily living** 70.0% were independent in the experimental group and 50.0% were independent in the control group.

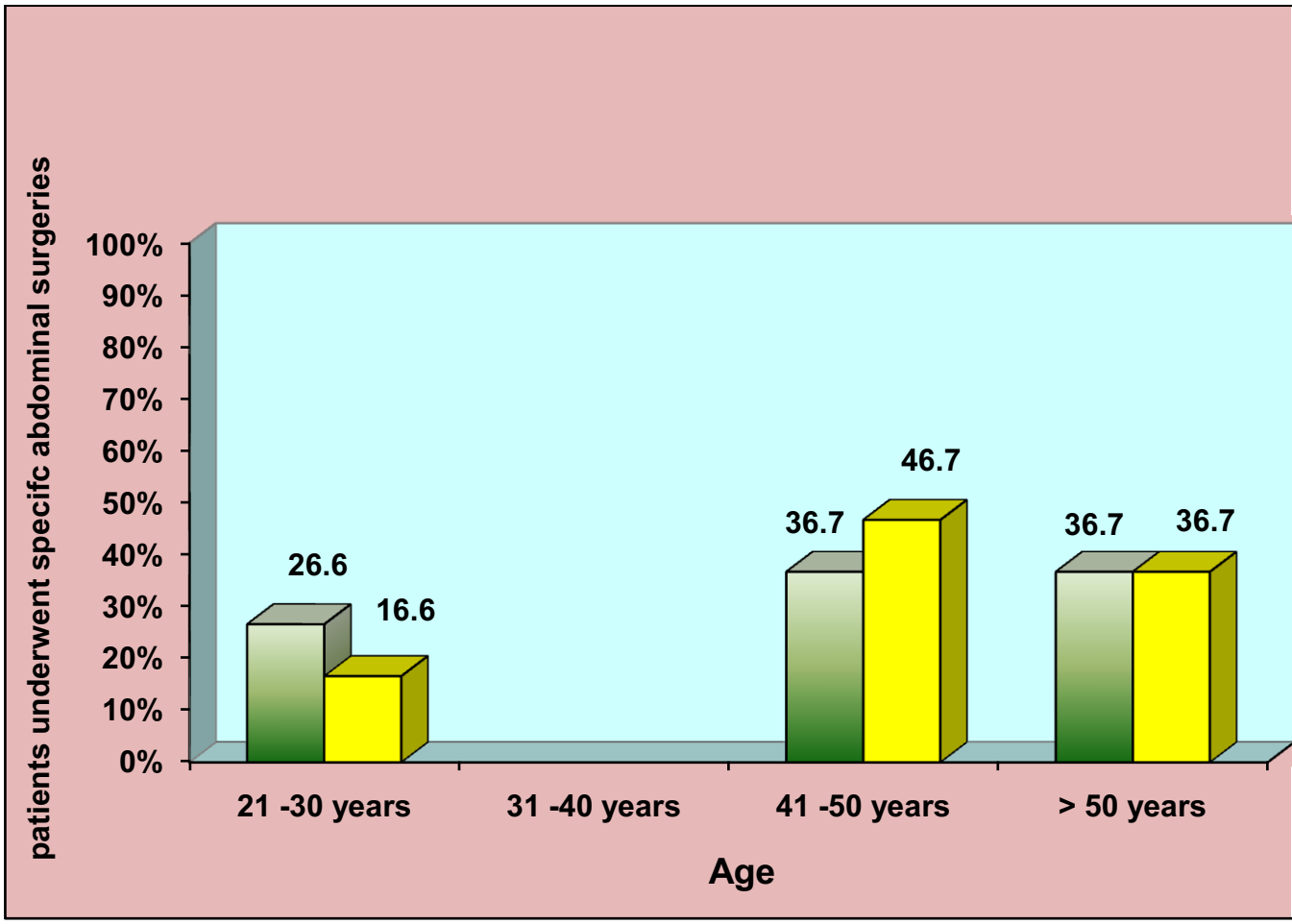


Figure – 4.1 : Age wise distribution of patients underwent specific abdominal surgeries.

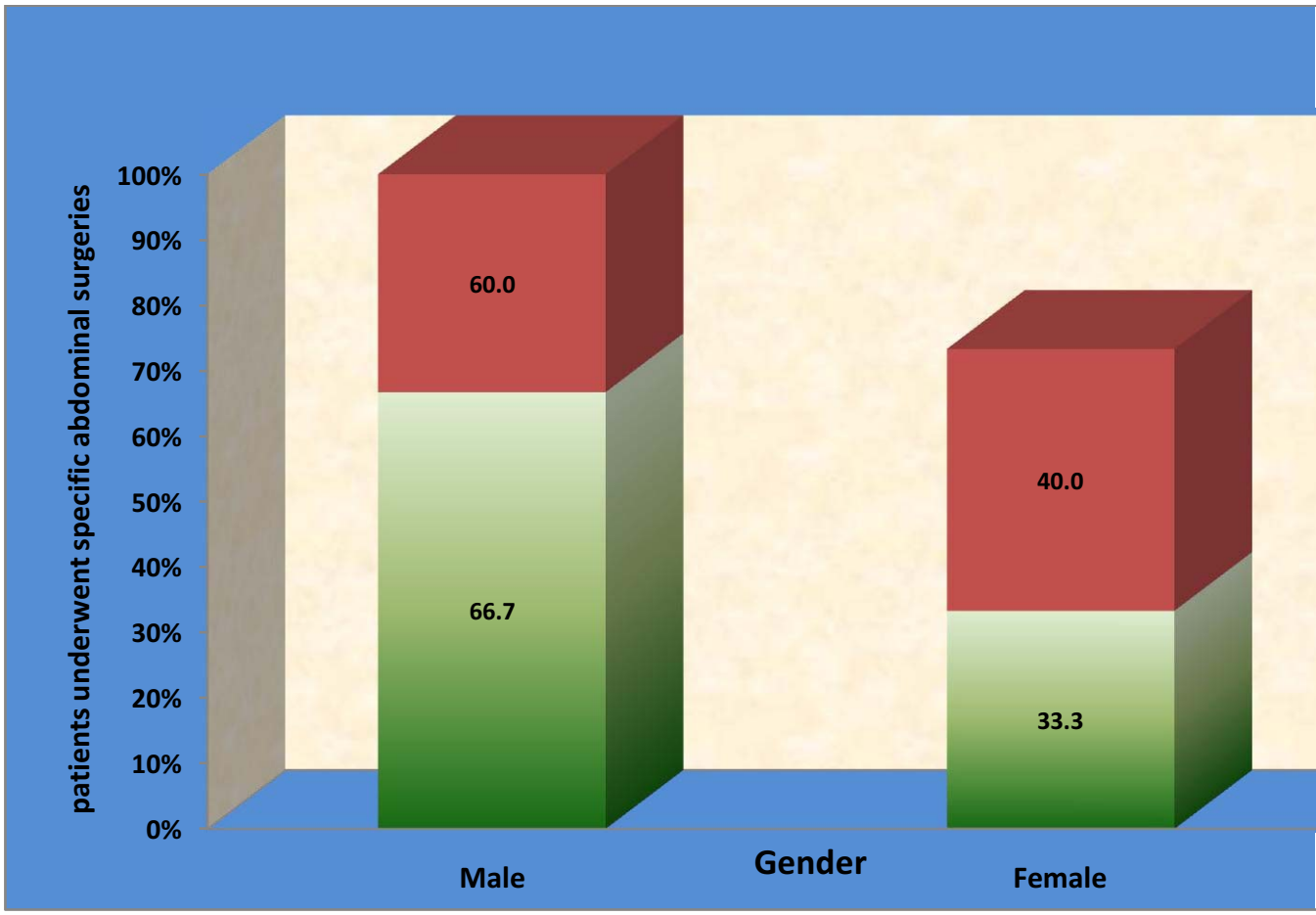


Figure – 4.2: Gender wise distribution of patients underwent specific abdominal surgeries.

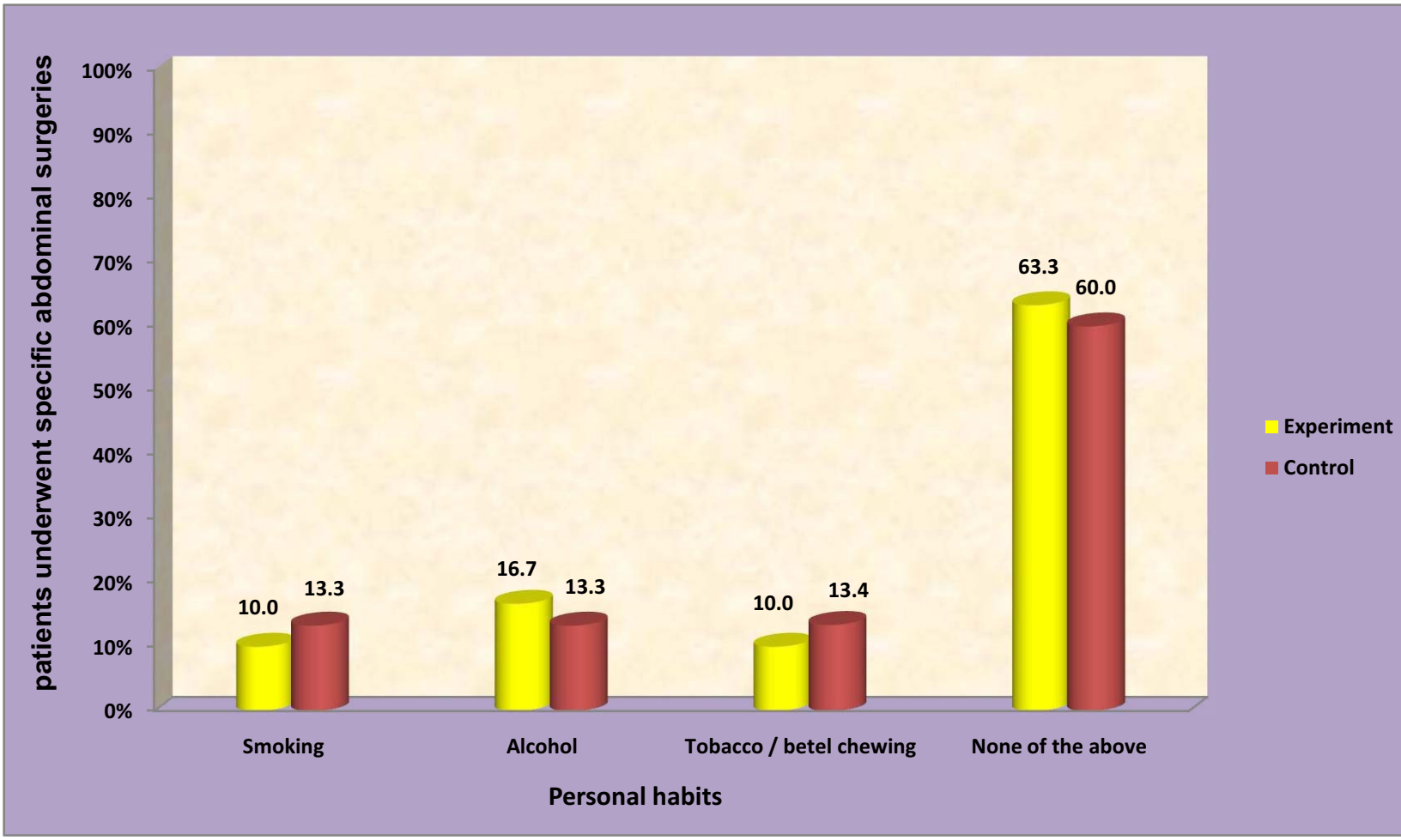


Figure – 4.3 : Personal habits wise distribution of patients underwent specific abdominal surgeries

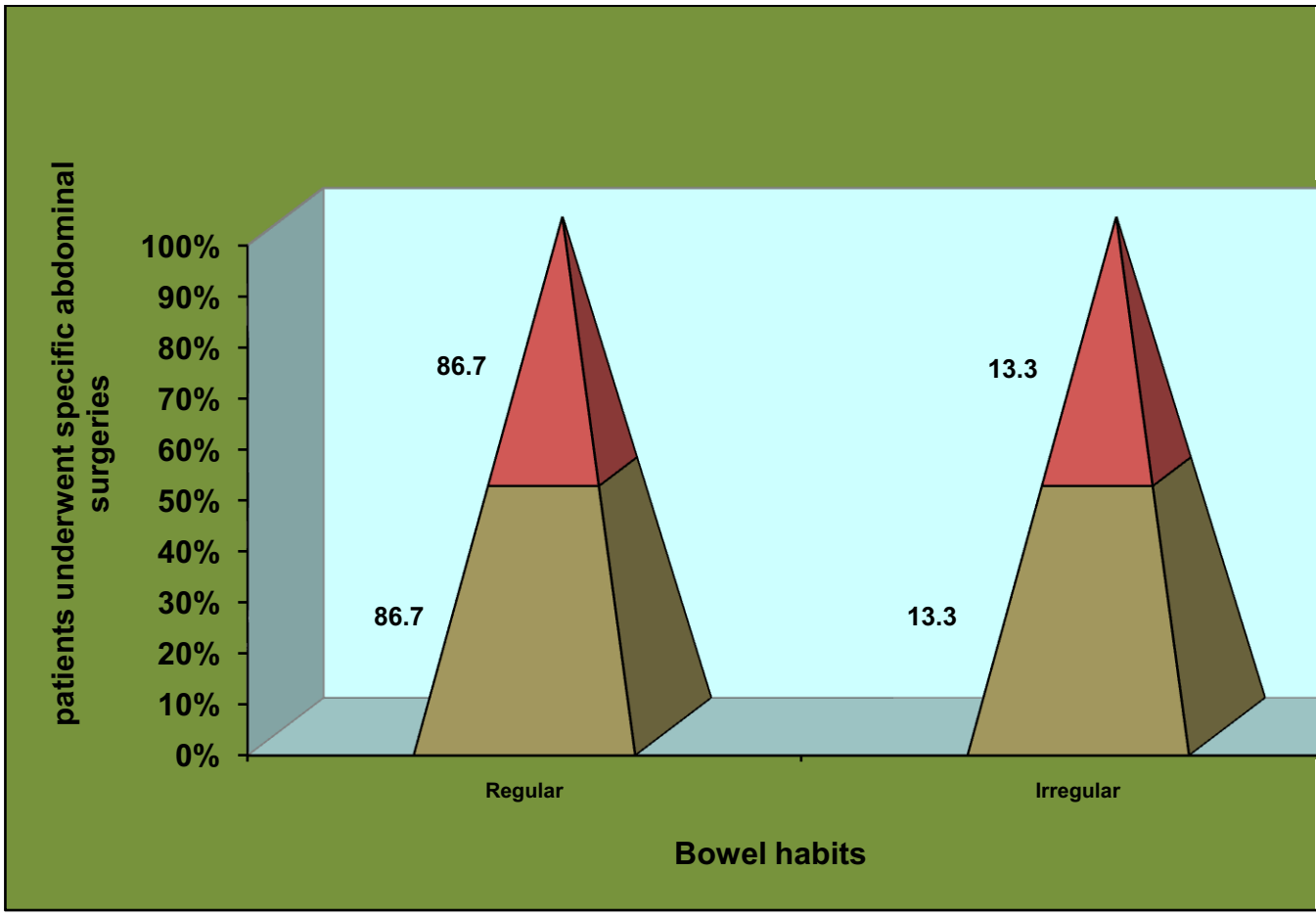


Figure – 4.4 : Bowel habits wise distribution of patients underwent specific abdominal surgeries.

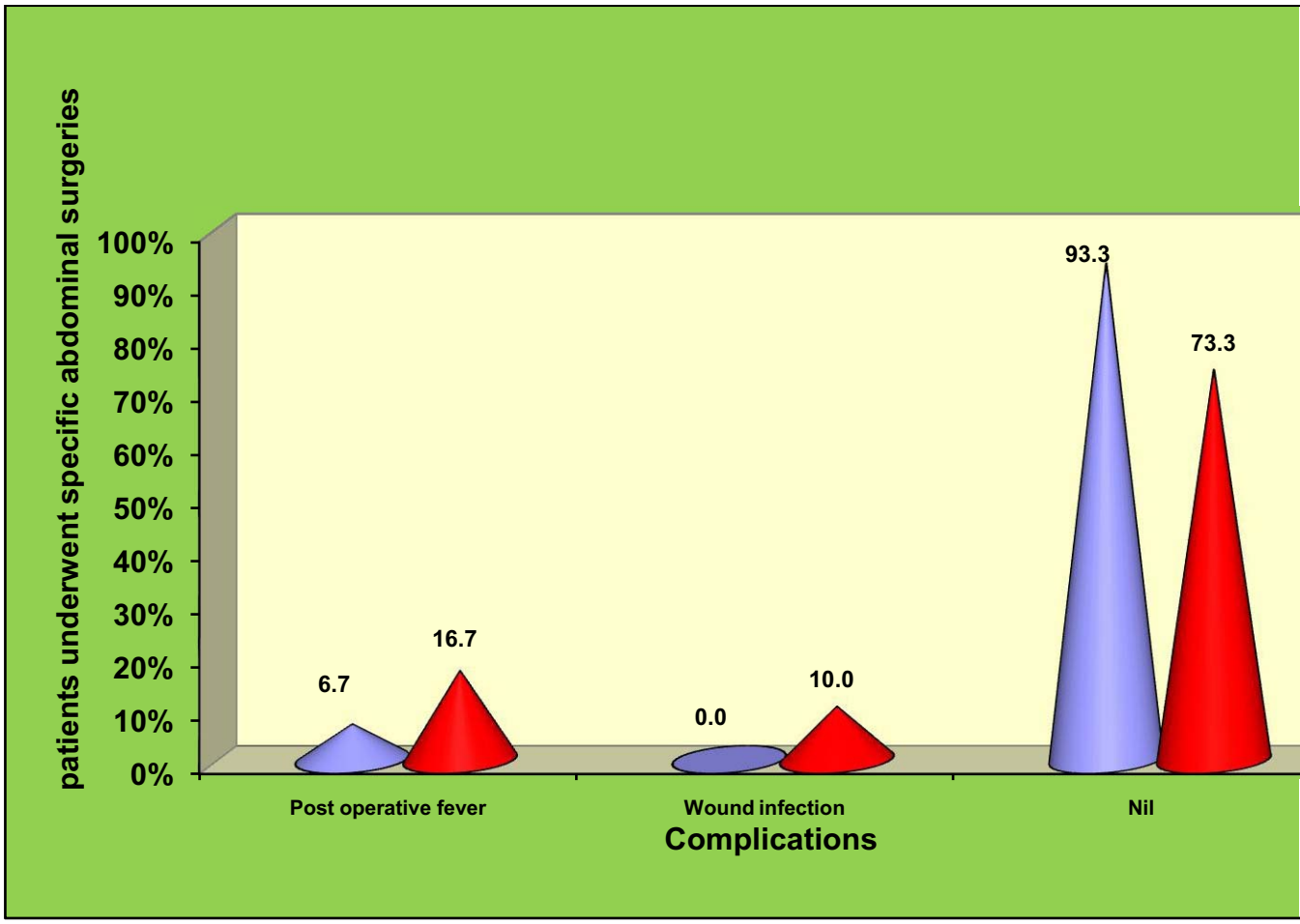


Figure – 4.5:Complications wise distribution of patients underwent specific abdominal surgeries.

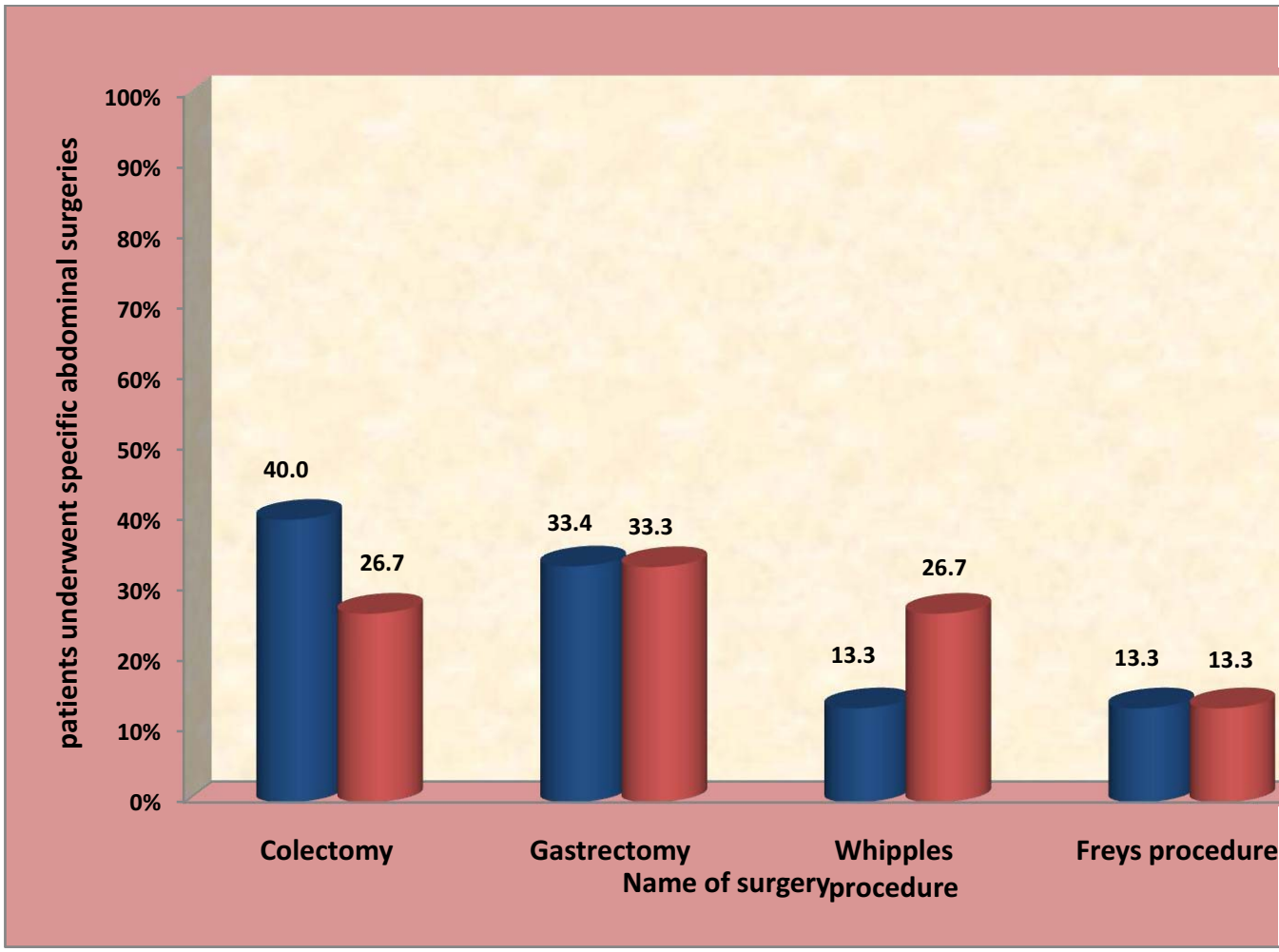


Figure – 4.6 : Surgery wise distribution of patients underwent specific abdominal surgeries.

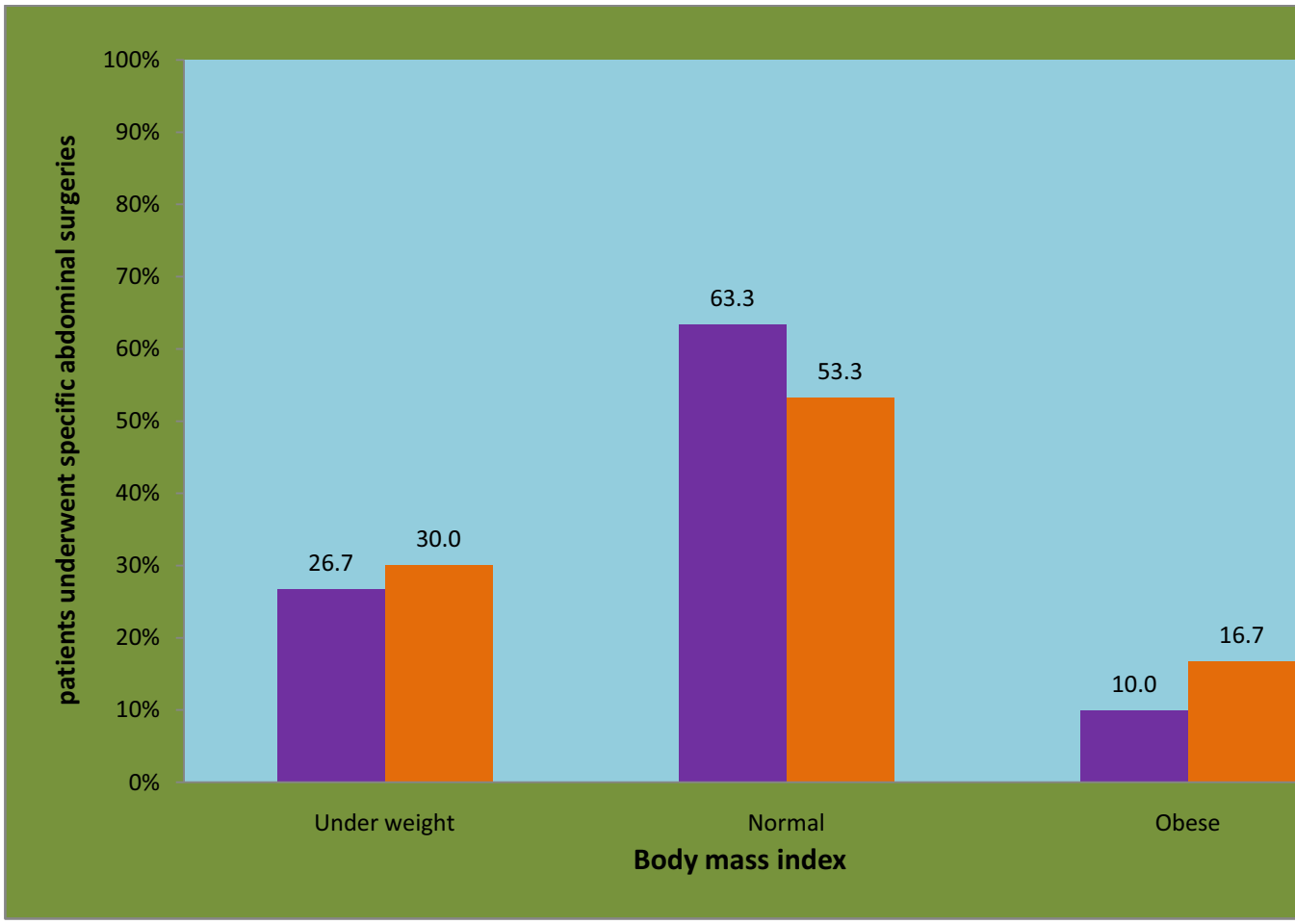


Figure – 4.7: Body mass index wise distribution of patients underwent specific abdominal surgeries.

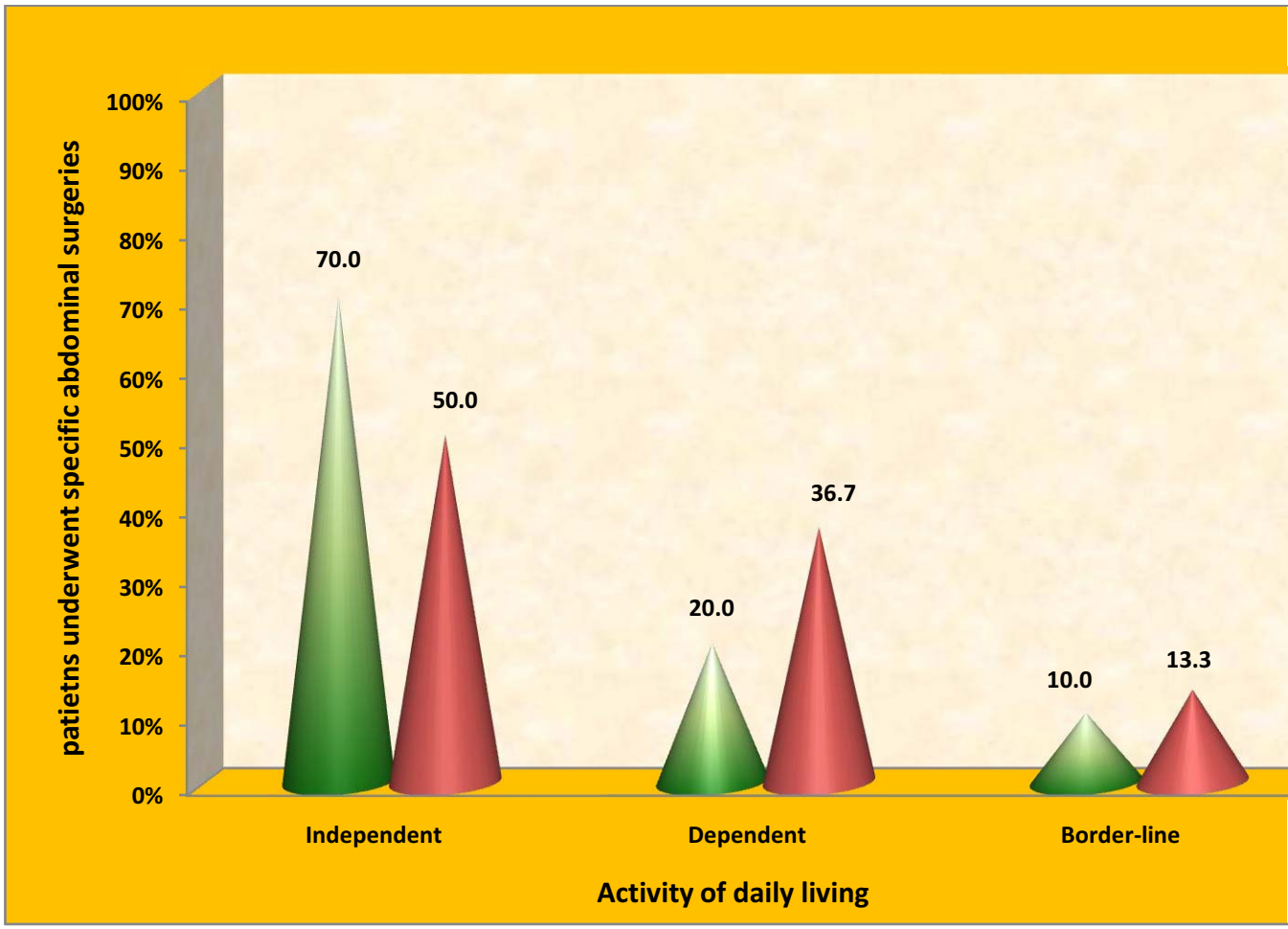


Figure – 4.8 : Activity of Daily Living wise distribution of patients underwent specific abdominal surgeries.

Section-B : **Effectiveness of bubble gum chewing in early return of bowel movements among experimental groups.**

Table 4.2: Effectiveness of bubble gum chewing

Groups	Maximum score	Mean score	Mean Difference in score with 95% Confidence interval	Percentage of mean difference score with 95% Confidence interval
Experiment	**3**	**2.83**	**0.80(0.48-1.12)**	**26.7%(16.0%-37.3%)**
Control	**3**	**2.03**		

*significant ** high significant *** very high significant

This table shows the effectiveness of bubble gum chewing in early return of bowel movements among patients after specific abdominal surgeries at Rajiv Gandhi Government General Hospital, Chennai. Experimental group patients had 26.7% more mean score than the control group. This 26.7% difference shows the effectiveness of bubble gum chewing.

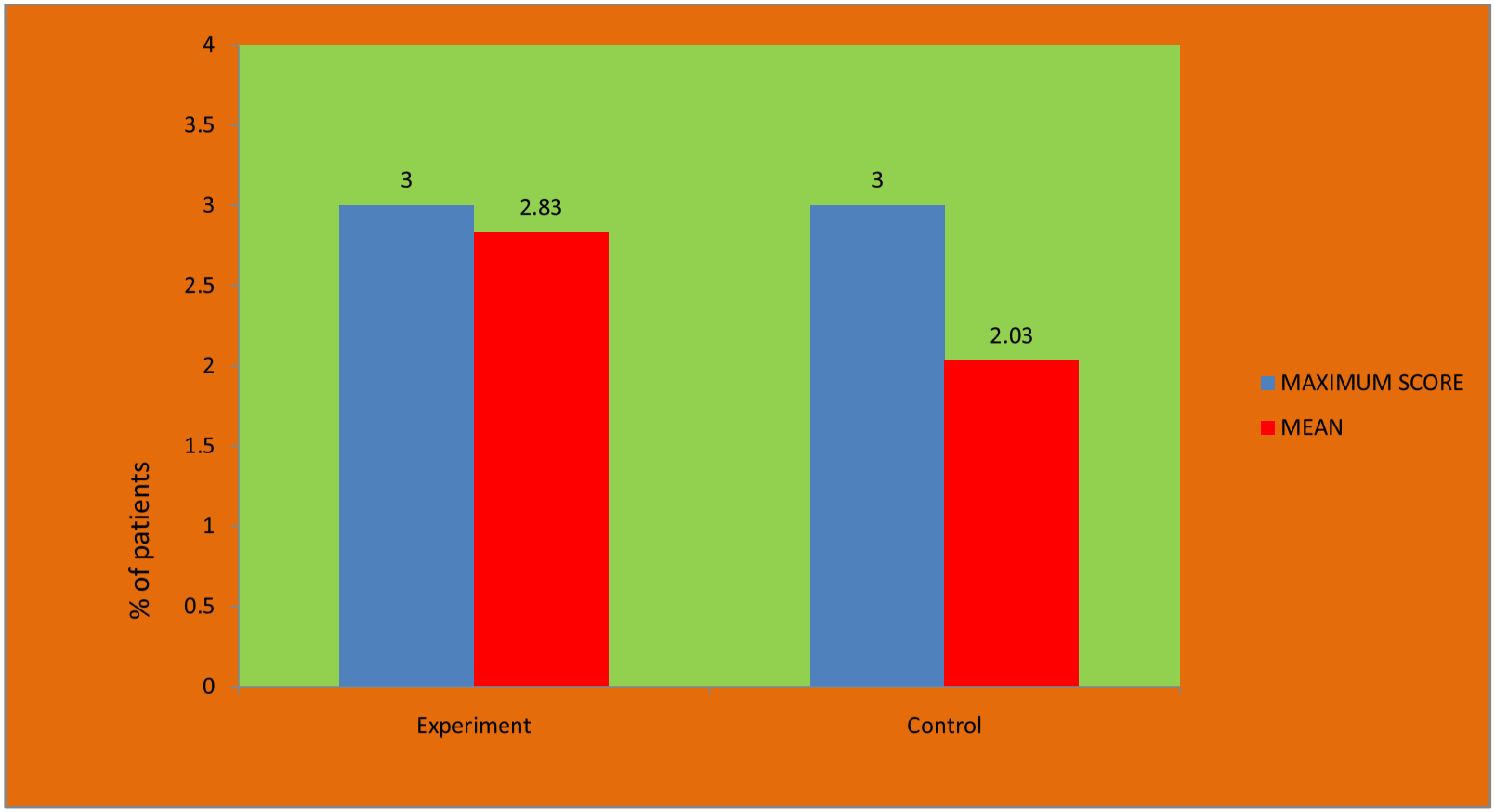


Figure – 4.9 : Effectiveness of bubble gum chewing in earlyreturn of bowel movements.

Section-C : **Comparison of the return of bowel movements between the experimental group and control group.**

Table 4.3: comparison of experiment and control groups.

Days	Groups				Chi square test
	Experiment		Control		
	n	In %	n	In %	
Within 2 days	23	76.7	7	23.3	**$\chi 2=18.07$**
4th day	7	23.3	19	63.3	
5th day	0	0.0	2	6.7	**p=0.001*** **
> 5 days	0	0.0	2	6.7	
Total	**30**	**100.0**	**30**	**100.0**	

*significant **high significant***very high significant.

Among experimental group, 76.7% of them had return of bowel movements within 2 days , 23.3% of them had on the 4th day, after bubble gum chewing, whereas in control group with routine treatment, 23.3% of them had return of bowel movements within 2 days, 63.3 of them had on the 4th day, 6.7% of them had on the 5th day and 6.7% of them had more than 5days, Statistically there was a very high significant difference p=0.001*** between the experimental and control groups. It was calculated using chi-square test (x^2 =18.07).

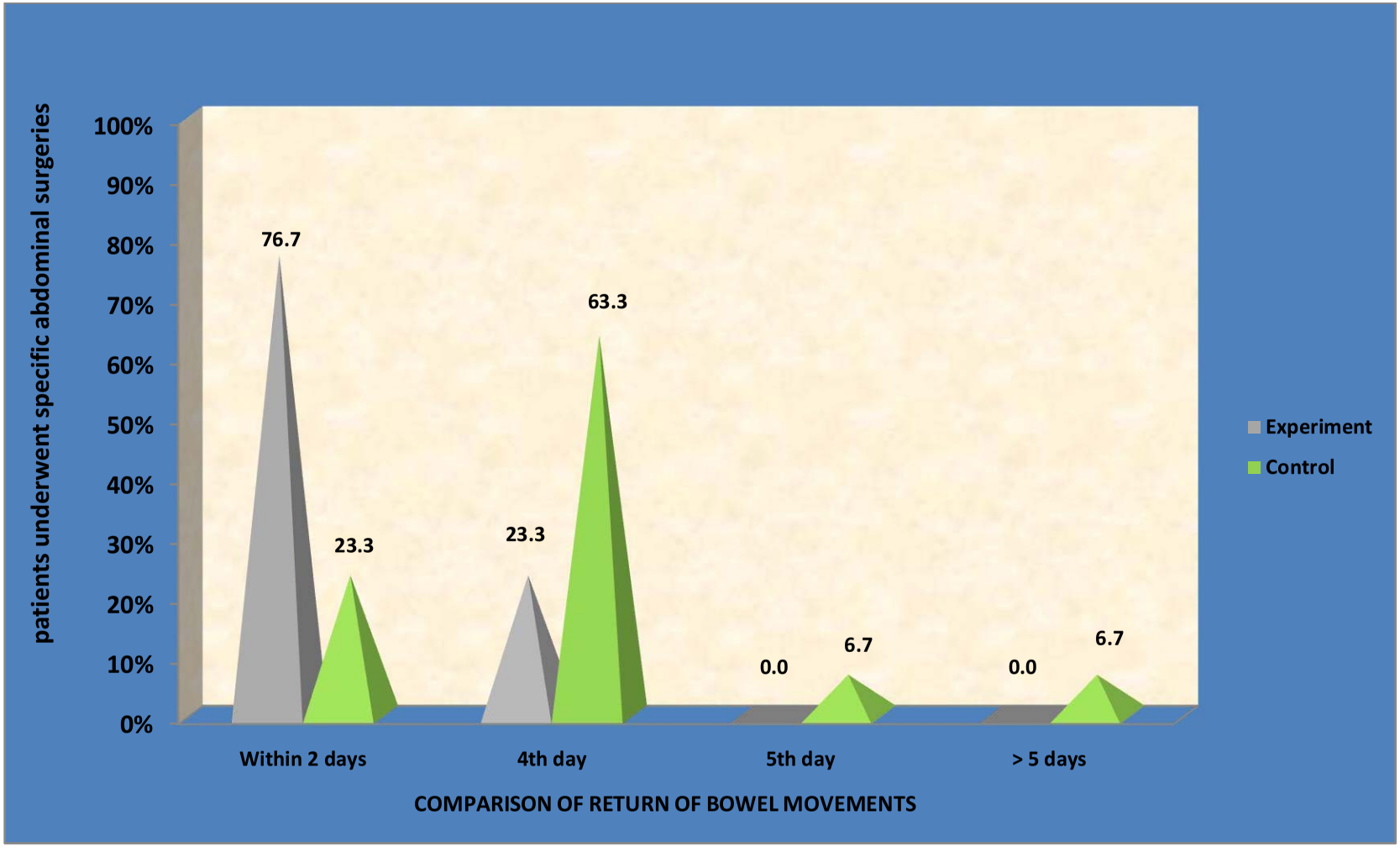


Figure – 4.10 : Comparison of level of return of bowel movements in both experimental and control group

Table 4.4: Comparison of experiment and control group early return of bowel movements score

Groups	No. of patients	Mean score	SD	Mean Difference	Student independent t-test
Experiment	**30**	**2.83**	**0.38**	**0.80**	**t=5.13 p=0.001*** **
Control	**30**	**2.03**	**0.76**		

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

This table compares the return of bowel movements between the control group and experimental group. The mean score of early return of bowel movements among experimental group was 2.83 and control group 2.03. The mean difference was 0.80. It was confirmed by t-test (t=5.13), which was statistically significant (p=0.001)

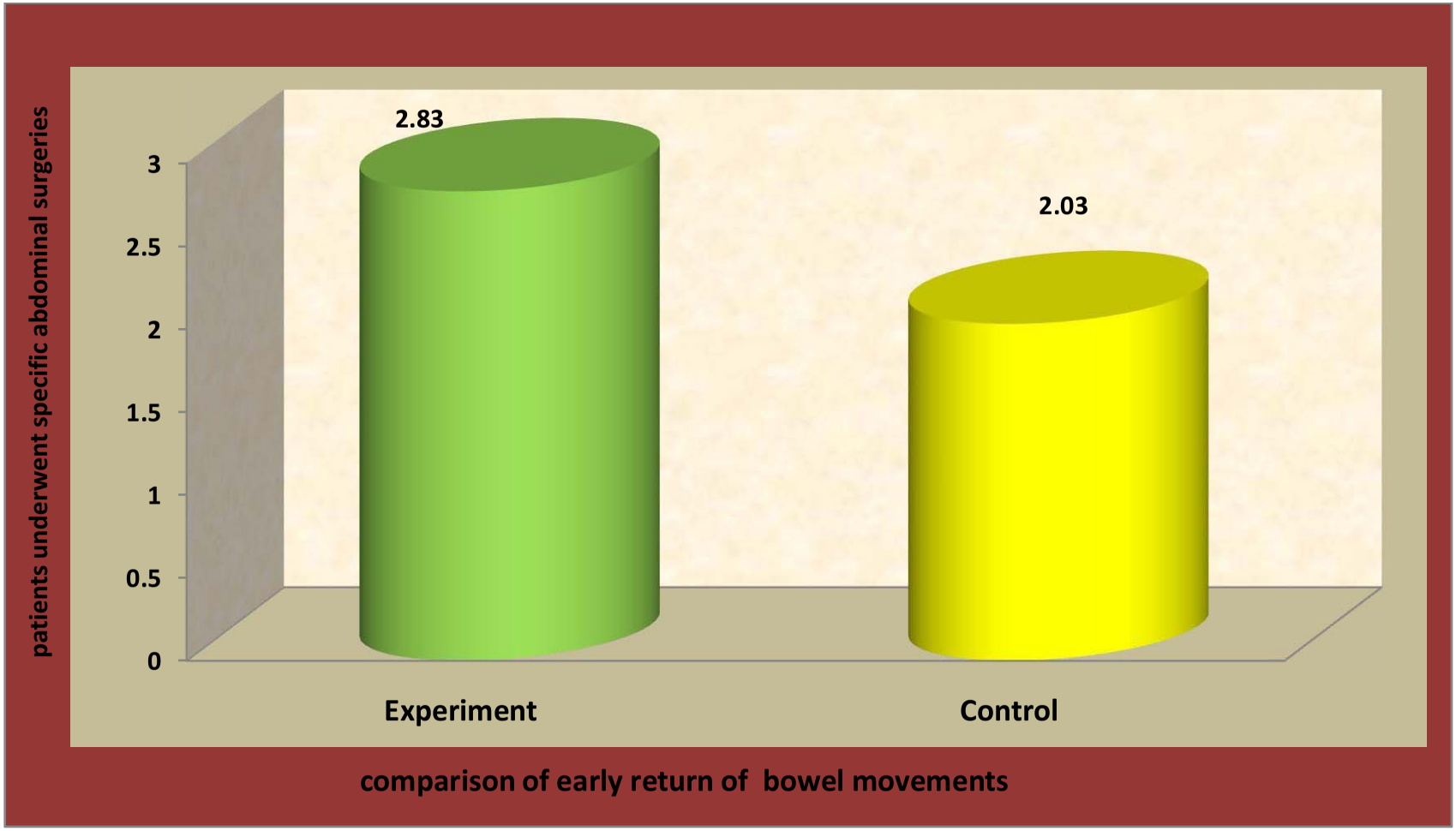


Figure – 4.11 : Comparison of early return of bowel movements in both experimental and control group.

Section-D : Association between the return of bowel movements with selected demographic variables in experimental group.

Table 4.5: *Association between return of bowel movements and patients demographic variables(Experiment)*

Demographic variables		Early return of bowel movements				Total	Chi square test
		Within 3 days		4th day			
		frequency	In %	frequency	In%		
Age	21 -30 years	6	100.0	0	0.0	6	**$\chi2$=8.48 p=0.05* significant**
	31 -40 years	9	90.0	1	10.0	10	
	41 -50 years	8	88.9	1	11.1	9	
	> 50 years	2	40.0	3	60.0	5	
Gender	Male	16	80.0	4	20.0	20	$\chi2$=0.48 p=0.48
	Female	9	90.0	1	10.0	10	
Personal habits	Smoking	2	66.7	1	33.3	3	$\chi2$=1.25 p=0.74
	Alcohol	4	80.0	1	20.0	5	
	Tobacco / betel chewing	3	100.0	0	0.0	3	
	None of the above	16	84.2	3	15.8	19	
Bowel habits	Regular	23	88.5	3	11.5	26	$\chi2$=3.69 p=0.08
	Irregular	2	50.0	2	50.0	4	
Complications	Post operative fever	1	50.0	1	50.0	2	$\chi2$=1.71 p=0.19
	Nil	24	85.7	4	14.3	28	
Name of surgery	Colectomy	11	91.7	1	8.3	12	$\chi2$=4.32 p=0.23
	Gastrectomy	9	90.0	1	10.0	10	
	Whipples procedure	3	75.0	1	25.0	4	
	Freys procedure	2	50.0	2	50.0	4	
Body Mass Index	Under weight	7	87.5	1	12.5	8	**$\chi2$=6.01 p=0.05* significant**
	Normal	17	89.5	2	10.5	19	
	Obese	1	33.3	2	66.7	3	
Activity of living	Independent	19	90.5	2	9.5	21	**$\chi2$=6.17 p=0.05* significant**
	Dependent	5	83.3	1	16.7	6	
	Border-line	1	33.3	2	66.7	3	

*significance **high significance ***highly significance

This table shows the association of mid age patients with normal weight and independent activity of daily living were benefitted more than others.

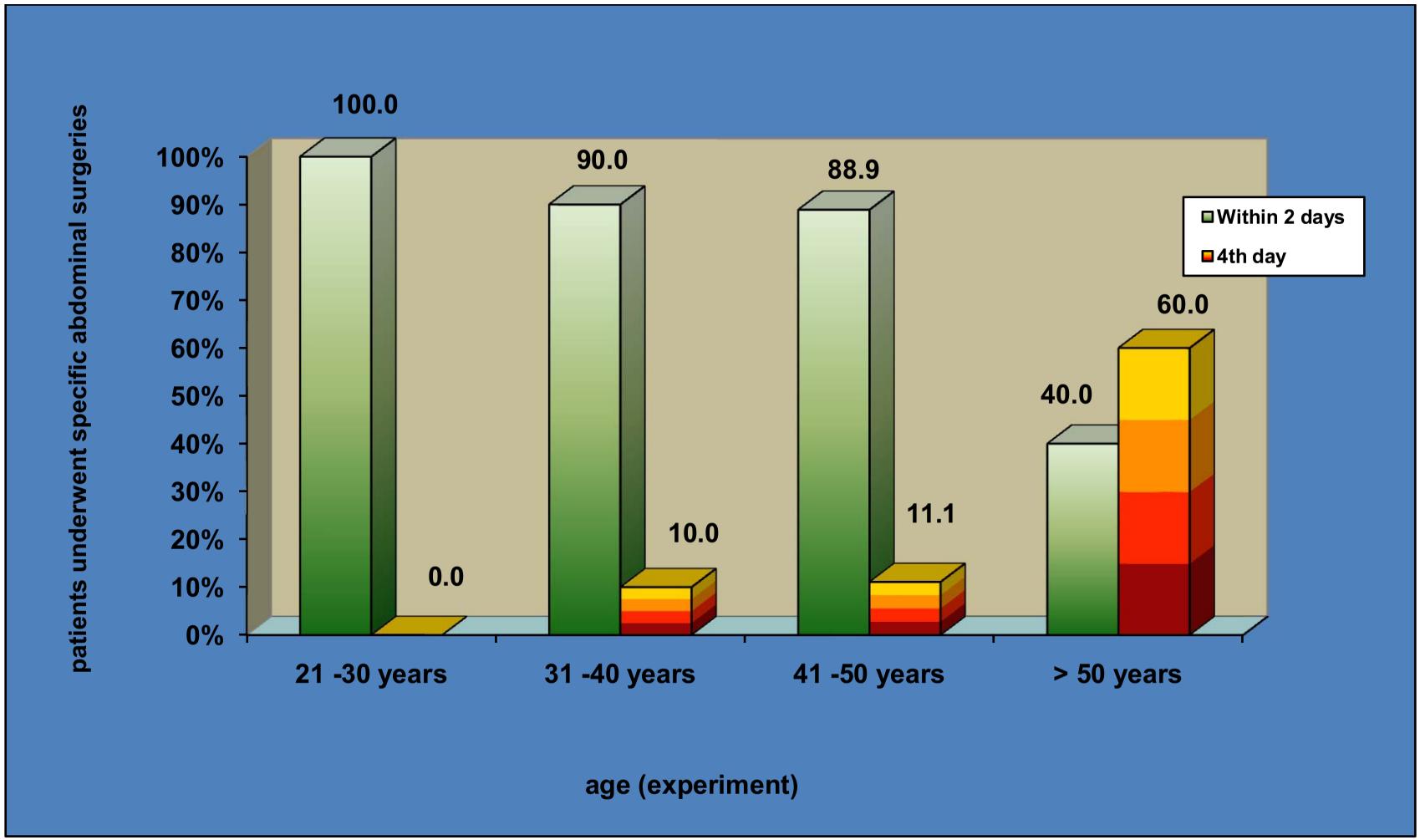


Figure – 4.12 : Association between the level of early return of bowel movements and patients age

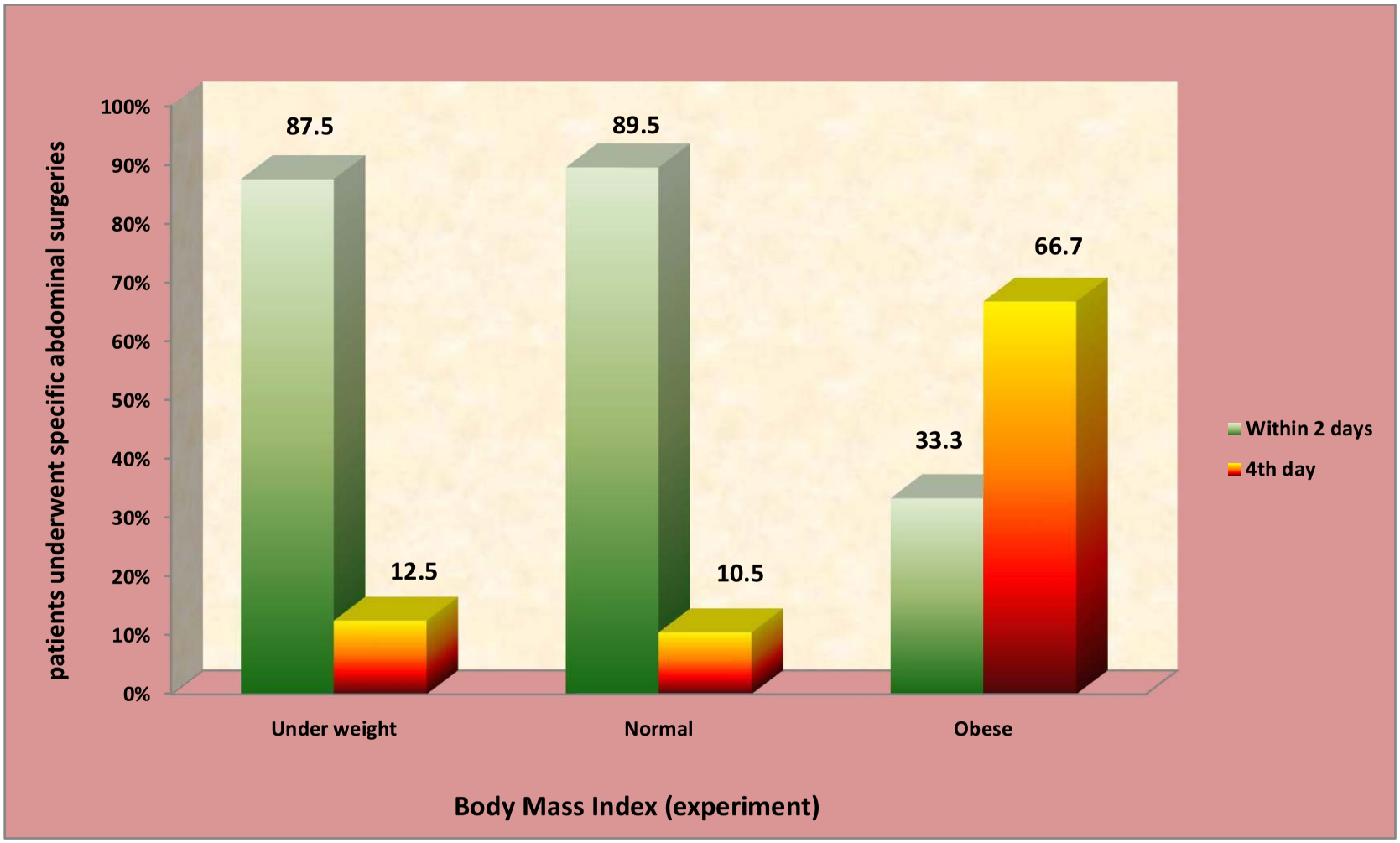


Figure – 4.13 : Association between the level of early return of bowel movement and body mass index

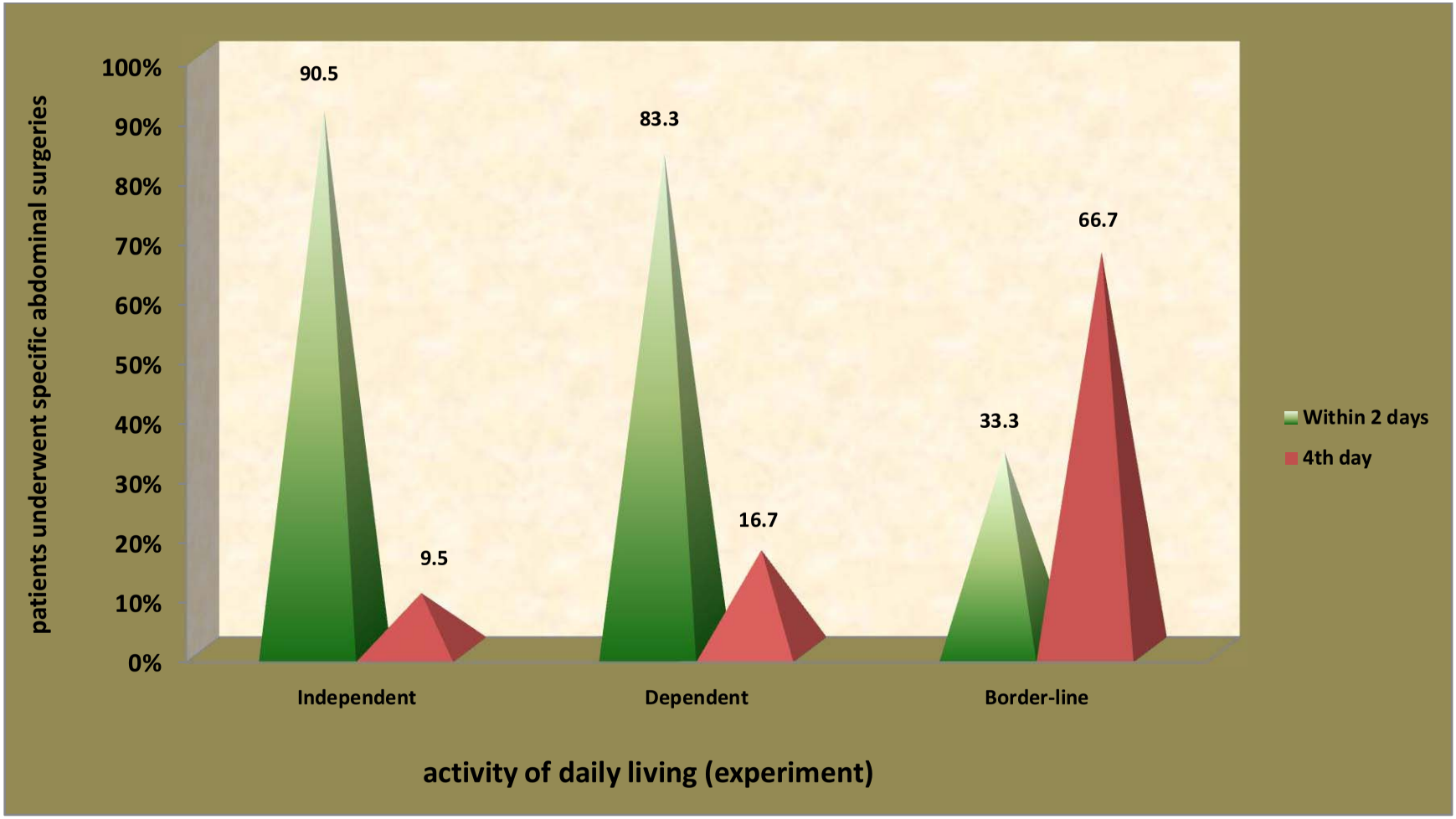


Figure - 4.14: Association between level of early bowel movement and activity of daily living

Section-E: Association between the return of bowel movements with selected demographic variables in control group.

Table 4.6: Association between return of bowel movements and patients demographic variables (Control)

Demographic variables		scores								Total	Chi square test
		>5days		5th day		4th day		Within 3 days			
		frequency	In %	frequency	In %	Frequency	In %	frequency	In %		
Age	21 -30 years					4	66.7	2	33.3	6	$\chi2$=7.29 p=0.60
	31 -40 years	1	11.1	2	22.2	4	44.4	2	22.2	9	
	41 -50 years	1	11.1			6	66.7	2	22.2	9	
	> 50 years					5	83.3	1	16.7	6	
Gender	Male	2	11.1	2	11.1	11	61.1	3	16.7	18	$\chi2$=3.55 p=0.31
	Female					8	66.7	4	33.3	12	
Personal habits	Smoking			1	25.0	2	50.0	1	25.0	4	$\chi2$=4.23 p=0.89
	Alcohol					3	75.0	1	25.0	4	
	Tobacco / betel chewing					3	75.0	1	25.0	4	
	None of the above	2	11.1	1	5.6	11	61.1	4	22.2	18	
Bowel habits	Regular	2	7.7	2	7.7	16	61.5	6	23.1	26	$\chi2$=0.72 p=0.86
	Irregular					3	75.0	1	25.0	4	
Complications	Post operative fever	2	40.0	1	20.0	2	40.0	0	0.0	5	**$\chi2$=16.42 p=0.01 ** significant**
	Wound infection	0	0.0	1	33.3	2	66.7	0	0.0	3	
	Nil	0	0.0	0	0.0	15	68.2	7	22.7	22	
Name of surgery	Colectomy	1	12.5	1	12.5	3	37.5	3	37.5	8	$\chi2$=7.22 p=0.61
	Gastrectomy			1	10.0	6	60.0	3	30.0	10	
	Whipples procedure	1	12.5			6	75.0	1	12.5	8	
	Freys procedure					4	100.0			4	
Body Mass Index	Under weight	1	11.1			6	66.7	2	22.2	9	$\chi2$=3.80 p=0.70
	Normal	1	6.3	1	6.3	11	68.8	3	18.8	16	
	Obese			1	20.0	2	40.0	2	40.0	5	
Activity of daily living	Independent	0	0.0	0	0.0	8	53.3	7	46.7	15	**$\chi2$=14.17 p=0.05* significant**
	Dependent	1	9.1	1	9.1	9	81.8	0	18.2	11	
	Border-line	1	25.0	1	25.0	2	50.0	0	25.0	4	

*significance **high significance ***highly significance

This table shows the association between the patients with no complication and independent activity of daily living were benefitted more than others.

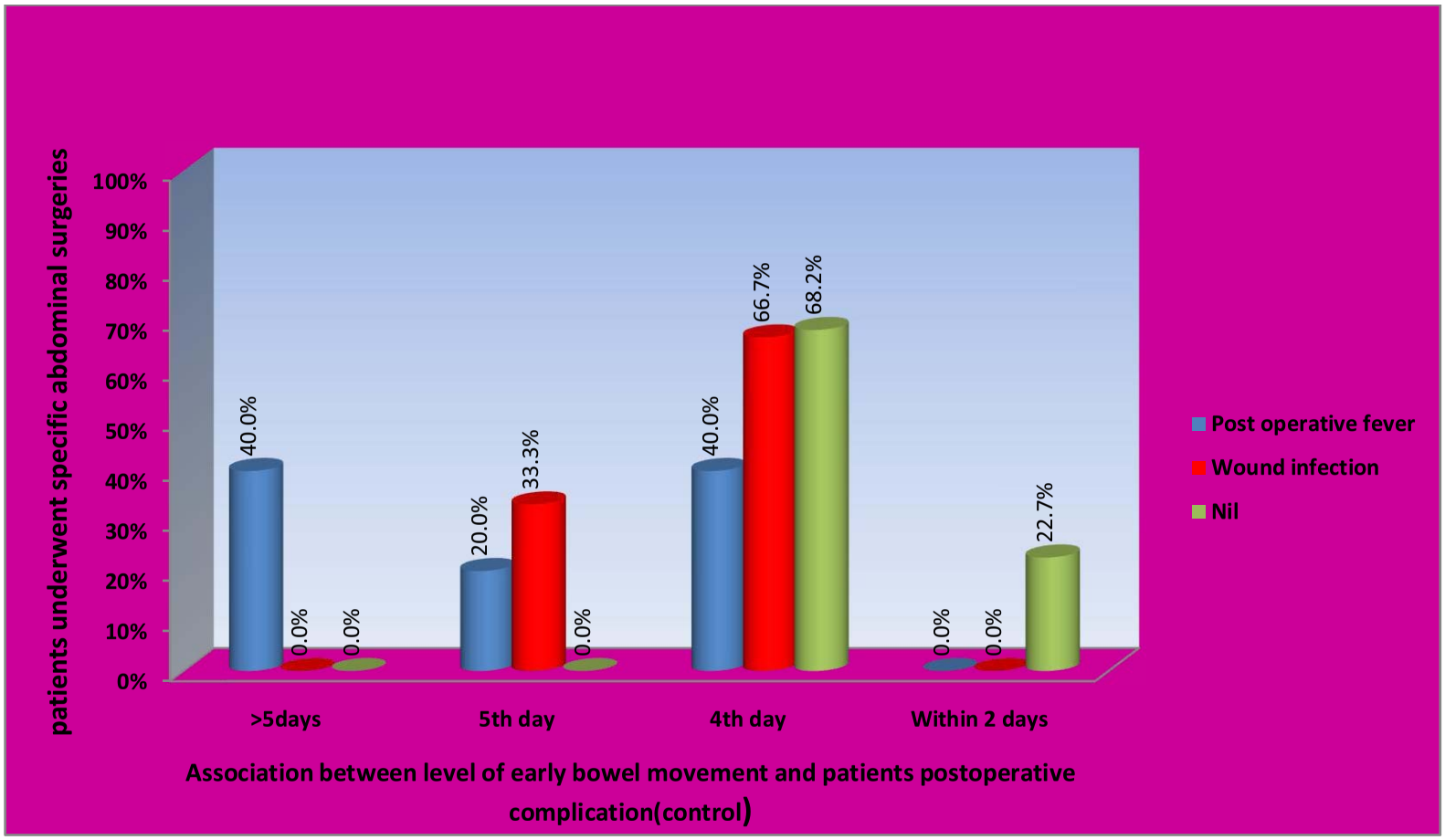


Figure – 4.15 : Association between level of early bowel movement and patients postoperative complications.

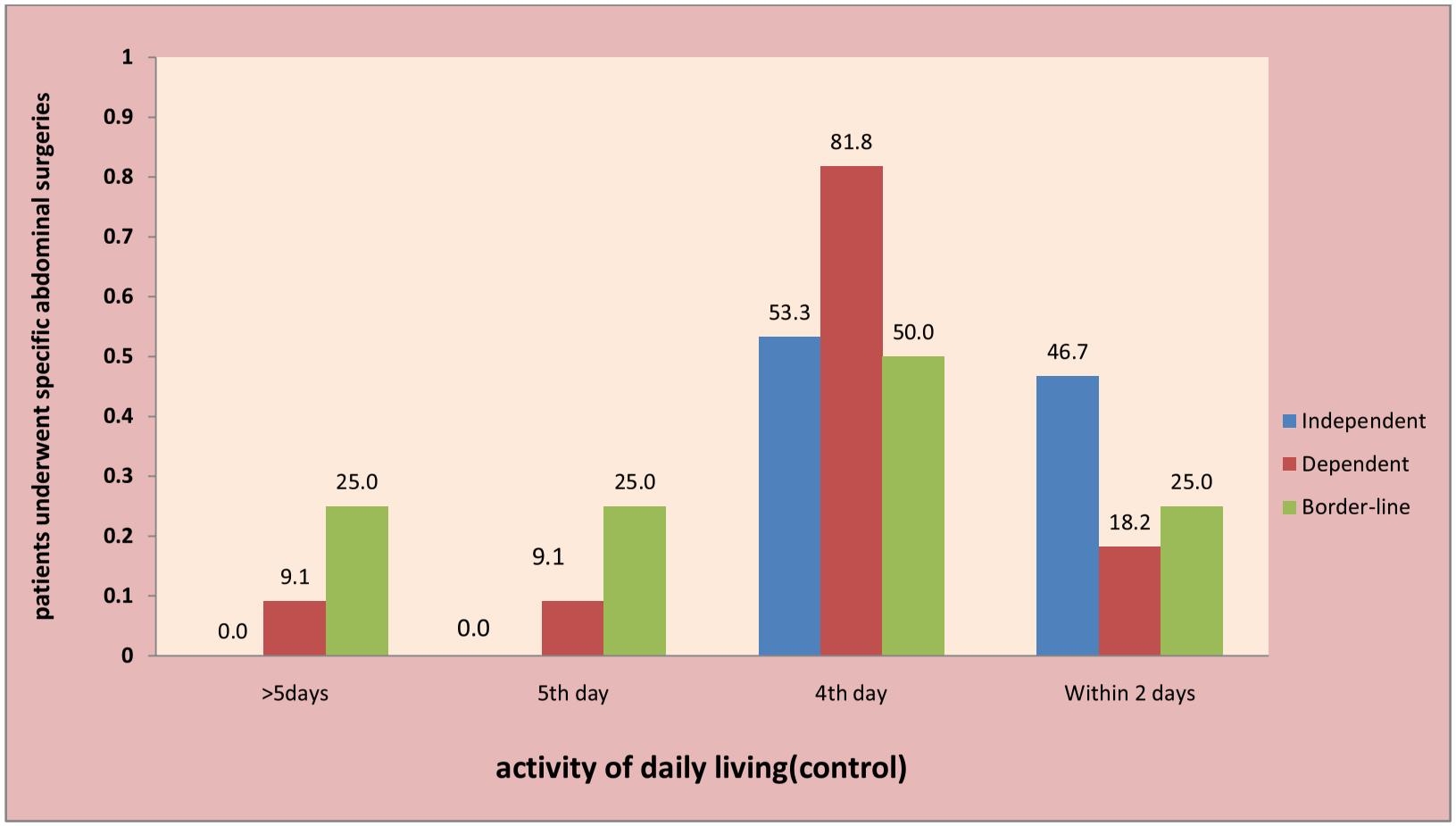


Figure – 4.16: Association between level of early bowel movement and activity of daily living.

CHAPTER – V

SUMMARY OF THE RESULTS

This chapter deals with the summary of the results and the data analysed. The analysed data were compiled in to the following headings.

5.1 Findings of demographic variables

- With regard to age, in experimental group the majority 33.3 % were in the age group between 31-40 years and in the control group, majority 30.0% were in the age group between 31-50 years.
- With regard to gender, in experimental group majority 66.7% were males and in the control group, majority 60.0% were males.
- According to personal habits in experimental group 63.3% and in the control group 60.0% did not have the habits of smoking, alcohol, tobacco / betel chewing.
- According to bowel habits 86.7% in both experimental and control group have regular bowel habits.
- With regards to the complications the majority 93.3% did not have any complications in the experimental group and 73.3% did not have any complications in the control group.
- Accordance to the name of surgery the majority 40.0% underwent colectomy in the experimental group and 33.3% underwent gastrectomy in control group.
- With regards to the body mass index 63.3% in the experimental group were normal and 53.3% were normal in the control group.
- With regards to the activity of daily living 70.0% were independent in the experimental group and 50.0% were independent in the control group.

5.2. Return of bowel movements in experimental and control group

- Return of bowel movements among experimental group were 76.7 % within 2 days and 23.3 % on the 4th day.
- In control group the return of bowel movements were 23.3% within 2 days, 63.3% on the 4th day, and 6.7 % on the 5th day and above.

5.3. Effectiveness of bubble gum chewing in early return of bowel movements among patients underwent specific abdominal surgeries

The mean score of patients in experimental group were 2.83 and the mean score in the control group were 2.03. On comparing the effectiveness of both the experimental and control groups, the experimental group patients were having 26.7% more mean difference in score than the control group.

5.4 Association between the return of bowel movements with selected demographic variables in experimental group

- There was statistically significant association between level of early return of bowel movement and patients age. 100.0% of patients with the age group 0f 21-30 years have been stated that return of bowel movement is early when compared to the age group of above 50 years, stated 40%.
- There was statistically significant association between body mass index and the early return of bowel movements. 89.5% with the normal body mass index had early return of bowel movements when compared with the underweight and obese.
- There was statistically significant association between activities of daily living and the early return of bowel movements. 90.5% were the independent activity had early return of bowel movements when compared with the dependent and border-line.

5.5. Association between the return of bowel movements with selected demographic variables in control group

- There was statistically high significant association between no complications and early return of bowel movements in control group. p=0.01 ** it is highly significant majority of patients had complications on the fourth post operative day, 66.7% had wound infection and 40% had post operative fever, greater the post operative days complications increased.
- There was a statistically significance between the activity of daily living and early return of bowel movements, P=0.05* thus 46.7% of patients were independent, 18.2% were dependent and 25% were in the border-line had early return of bowel movements within 2 days. Patients who were independent had early return of bowel movements when compared with the dependent and border-line patients.

CHAPTER – VI

DISCUSSION

This chapter deals with the discussion of the results of the data analyzed based on the objectives of the study. The purpose of the study is to assess the effectiveness of bubble gum chewing in early return of bowel movements among patients underwent specific abdominal surgeries.

Objective 1: To assess the demographic variables among patients underwent specific abdominal surgeries.

- With regard to **age**, in experimental group the majority 33.3 % were in the age group between 31-40 years and in the control group, majority 30.0% were in the age group between 31-50 years.
- With regard to **gender**, in experimental group majority 66.7% were males and in the control group, majority 60.0% were males.
- According to **personal habits** in experimental group 63.3% and in the control group 60.0% did not have the habits of smoking, alcohol, tobacco / betel chewing.
- According to **bowel habits** 86.7% in both experimental and control group have regular bowel habits.
- With regards to the **complications** the majority 93.3% did not have any complications in the experimental group and 73.3% did not have any complications in the control group.
- Accordance to the **name of surgery** the majority 40.0% underwent colectomy in the experimental group and 33.3% underwent gastrectomy in control group.
- With regards to the **body mass index** 63.3% in the experimental group were normal and 53.3% were normal in the control group.

- With regards to the **activity of daily living** 70.0% were independent in the experimental group and 50.0% were independent in the control group.

Objective-2: To assess the effectiveness of bubble gum chewing in early return of bowel movements among experimental groups.

The effectiveness of bubble gum chewing in early return of bowel movements among patients underwent specific abdominal surgeries. The mean score of patients in experimental group were 2.83 and the mean score in the control group were 2.03. On comparing the effectiveness of both the experimental and control groups, the experimental group patients had 26.7% more mean difference in score than the control group. The difference between the experimental and control group score were analysed using proportion with 95% confidence interval and mean difference with 95% CI. This shows the effectiveness of bubble gum chewing on early return of bowel movements.

The similar findings is noted in the study, **Kouba EJ et al (2007)** conducted a cohort study to determine gum chewing in the immediate postoperative period facilities a return to bowel function in patients undergoing cystectomy and urinary diversion at Urology Surgery, The University of North California, USA. A total of 102 patients, the first cohort of patients underwent surgery between July 2004 and August 2005 and served as a comparison (control) group in which no gum was dispensed. The second cohort underwent surgery during September 2005 to July 2006. These patients were given chewing gum to begin on postoperative day 1 outcome measures included time to flatus, time to bowel movement, length of hospital stay, and complications and the results shows The mean score of patients in experimental group were 2.86 and the mean score in the control group were 2.03. On comparing the effectiveness of both the experimental and control groups, the experimental group patients were having 28.7% more mean difference in score than the control group.

Objective-3: To compare the return of bowel movements between the control group and experimental group.

The duration of return of bowel movements is measured in terms of first feeling of hunger, flatus passed, first bowel sounds and first defecation. Among experiment group, 76.7% of them had return of bowel movements within 2 days, 23.3% of them had on 4^{th} day, after bubble gum chewing, whereas in control group with routine treatment, 23.3% of them had within 2 days, 63.3 of them were having 4^{th} day, 6.7% of them were having on 5^{th} day and 6.7% of had more than 5days. Statistically there was a significant difference. It was confirmed using chi square test ($x^{2} = 18.07$) and p=0.001*** this shows the significant difference between experimental and control groups.

Thus there is a significant difference between bubble gum chewing and early return of bowel movements among patients underwent specific abdominal surgeries. Hence the stated hypothesis H1 was proved.

Objective-4 : To determine the association between the return of bowel movements with selected demographic variables.

Association between the return of bowel movements with selected demographic variables in experimental group.

There was a statistically significant (p=0.05*) association between level of early return of bowel movement and patients age. 100.0% of patients with the age group 0f 21-30 years have been stated that return of bowel movement is early when compared to the age group of above 50 years, stated 40%.

There was a statistically significant (P =0.05*) association between body mass index and the early return of bowel movements. 89.5% with the normal body mass index had early return of bowel movements when compared with the underweight and obese.

There was a statistically significant (P =0.05*) association between activities of daily living and the early return of bowel movements. 90.5% were the independent activity had early return of bowel movements when compared with the dependent and border-line.

Association between the return of bowel movements with selected demographic variables in control group.

- There was a statistically significant association between no complications and early return of bowel movements in control group. (p=0.01 **)it is highly significant majority of patients had complications on the fourth post operative day, 66.7% had wound infection and 40% had post operative fever, greater the post operative days complications increased.
- There was a statistically significance between the activity of daily living and early return of bowel movements, (P=0.05*) thus 46.7% of patients were independent ,18.2% were dependent and 25% were in the border-line had early return of bowel movements within 2 days. Patients who were independent had early return of bowel movements when compared with the dependent and border-line patients.

Thus there is a significant association between the selected demographic variables and bubble gum chewing in early return of bowel movements among patients underwent specific abdominal surgeries. Hence the stated H2 hypothesis was proved.

CHAPTER –VII

CONCLUSION AND RECOMMENDATIONS

The aim of the study was to assess the effectiveness of chewing bubble gum in early return of bowel movements among patients underwent specific abdominal surgeries at Rajiv Gandhi Government General Hospital, Chennai.

The design adopted for the study was experimental in nature and the conceptual frame work was based on Wiedenbach's helping art of clinical nursing theory, the study tool contains the demographic data and observational checklist where it consists of feeling of hunger, flatus passed , bowel sounds and defecation.

The main study was conducted with the sample size of sixty, based on the inclusion criteria in which the subjects were allotted to experimental and control group. The sampling technique used was purposive, the data were collected after getting concern from the subjects, analysis were done using descriptive and inferential statistics. The results obtained were presented using the tables and figures. A formal permission was obtained from the Director of the Institution. The data was collected with the help of observational checklist for a period of four weeks.

Descriptive (percentage distribution) and inferential statistics (chi-square , t-test) were used to analyse the data and for the assessment of hypothesis. The data were interpreted and discussed based on the objectives of the study, hypotheses and relevant studies from literature reviewed.

7.1 Implications of the study

The investigator had drawn the following implications from the studies, which were of vital concern in the field of nursing practice, nursing education, nursing administration and nursing research.

❖ **Nursing practice**

Nurses have a vital role in caring patients underwent specific abdominal surgeries. The use of bubble gum chewing can be followed as an routine post operative care nursing management. It has to establish as a evidence based nursing practice.

❖ **Nursing education**

As nursing educators, we must strengthen the evidence based nursing practices among the undergraduate and postgraduate nursing students. The nursing education curriculum must provide adequate clinical exposure of students in needed clinical areas.

❖ **Nursing administration**

The nursing administrator should take initiative in organizing the continuing Nursing education programmes on newly devised strategies such as chewing bubble gum with the use of technology.

The nursing administrator should supervise the administration of chewing bubble gum for the patients by nurses and also monitor the standards of practice to promote excellence in nursing care.

❖ **Nursing research**

Nursing researcher should encourage clinical nurses to apply the research findings in their daily nursing care activities and can bring out new innovative procedures to reduce the duration of return of bowel movements.

The researcher should motivate the clinical nurse to do further research studies on the different strategies to reduce the duration of return of bowel movement, the researcher should conduct periodic review of research findings and

disseminate the findings through conferences, seminars, and publications in professional seminar and international journals and in the world wide web.

7.2 Limitations

- Some patients are reluctant to bubble gum chewing because of pain during chewing on the first post operative day.
- The investigator was able to collect more number of overseas literatures than Indian literatures.
- Data collection period was four weeks only.

7.3 Recommendations

The study recommends the following for further research

- The study can be replicated with larger samples for better generalization.
- The study can be done for separate surgeries to get more specification.
- The study can be done as a bundle of care for the patients underwent major abdominal surgeries.

Conclusion

The earlier resumption of bowel activity results in early orals, so that the total duration of return of bowel movements was reduced and results in much economic benefit to the patient as the bed charge, food and drug costs for that particular day is cut off. It is also much benefit to the hospital, as the duration of stay in the post operative ward is reduced and the bed can be occupied for the other patients. Therefore nurses working in post operative ward should encourage patients to chew bubble gum after specific abdominal surgery.

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APPENDIX - A

INSTITUTIONAL ETHICS COMMITTEE
MADRAS MEDICAL COLLEGE, CHENNAI-3

EC Reg No.ECR/270/Inst./TN/2013
Telephone No. 044 25305301
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CERTIFICATE OF APPROVAL

To
Ms. KEZIA EVANGELIN.D
M.Sc., (Nursing)
College of Nursing
Madras Medical College,
Chennai – 600 003.

Dear Ms. KEZIA EVANGELIN.D,

The Institutional Ethics Committee has considered your request and approved your study titled **'A STUDY TO ASSESS THE EFFECTIVENESS OF BUBBLE GUM CHEWING IN EARLY RETURN OF BOWEL MOVEMENTS AMONG PATIENTS AFTER SPECIFIC ABDOMINAL SURGERIES AT RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL, CHENNAI. No.30102014.**

The following members of Ethics Committee were present in the meeting held on 21.10.2014 conducted at Madras Medical College, Chennai-3.

1.	Dr.C.Rajendran, M.D.,	: Chairperson
2.	Dr.R.Vimala, M.D., Dean, MMC, Ch-3	: Deputy Chairperson
3.	Prof.B.Kalaiselvi, M.D., Vice-Principal, MMC, Ch-3	: Member Secretary
4.	Prof.R.Nandhini, M.D., Inst.of Pharmacology, MMC	: Member
5.	Prof.K.Ramadevi, Director i/c, Inst.of Biochemistry, MMC	: Member
6.	Prof.Saraswathy, M.D., Director, Pathology, MMC, Ch-3	: Member
7.	Prof.S.G.Sivachidambaram, M.D., Director i/c, Inst.of Internal Medicine, MMC	: Member
8.	Dr.Raghumani, M.S., Professor of Surgery, MMC	: Member
9.	Thiru S.Rameshkumar, Administrative Officer	: Lay Person
10.	Thiru S.Govindasamy, B.A., B.L.,	: Lawyer
11.	Tmt.Arnold Saulina, M.A., MSW.,	: Social Scientist

We approve the proposal to be conducted in its presented form.

The Institutional Ethics Committee expects to be informed about the progress of the study and SAE occurring in the course of the study, any changes in the protocol and patients information/informed consent and asks to be provided a copy of the final report.

Member Secretary, Ethics Committee

APPENDIX - I

CERTIFICATE OF ENGLISH EDITING

TO WHOM SO EVER IT MAY CONCERN

This is to certify that the dissertation titled " A study to assess the effectiveness of bubble gum chewing in early return of bowel movements among patients underwent specific abdominal surgeries at Rajiv Gandhi Government General Hospital, Chennai-03". Done by MS.Keziaevangelin. D, M.Sc (N) II year, student of College of Nursing, Madras Medical College, Chennai-03 is edited for English language appropriateness.

07/02/16

SIGNATURE WITH SEAL

M. CHANDRAN DEVANESAN
P. G. ASST.
Devaiois Hr. Sec. School,
KASAM, KATPADI.

Date :

Place :

APPENDIX - C

CERTIFICATE FOR CONTENT VALIDITY

This is to certify that a tool prepared by **Ms. Keziaevangelin .D** , studying M.Sc.Nursing II year, College of Nursing, Madras Medical College, undertaking a Research study on **" A STUDY TO ASSESS THE EFFECTIVENESS OF BUBBLE GUM CHEWING IN EARLY RETURN OF BOWEL MOVEMENTS AMONG PATIENTS AFTER SPECIFIC ABDOMINAL SURGERIES IN RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL, CHENNAI- 03"** , has been validated by me and is found to be valid upto date and she can proceed with this tool to conduct the main study.

PRINCIPAL
MADHA COLLEGE OF NURSING
MADHA NAGAR, KUNDRATHUR,
CHENNAI - 600 069
PHONE : 24780736

SIGNATURE WITH SEAL

Name : DR. TAMILARASI. B

Designation : PRINCIPAL

Date : 15.07.2015

Place : CHENNAI.

MADHA COLLEGE OF NURSING
15 JUL 2015
CHENNAI - 600 069

From

Keziaevangelin D ,
M.Sc.,(N) II Year,
College Of Nursing,
Madras Medical College,
Chennai-03.

To

The Director,
Institute Of General Surgery,
Rajiv Gandhi Government General Hospital,
Chennai-03.

Through

The proper channel.

Respected Sir /Madam,

Sub: Permission for conducting Research study at Surgical Post Operative wards, Rajiv Gandhi Government General Hospital – requested –regarding

I **Ms. Keziaevangelin.D**, M.Sc (N) II year student, College Of Nursing, Madras Medical College ,Chennai-03 in partial fulfillment of M.Sc ., Nursing course , have a plan to conduct research study on topic mentioned below in Surgical Post Operative wards ,Rajiv Gandhi Government General hospital ,Chennai -600 003.The study period is from 06-07-2015 to 31-08-2015 . I assure that I will not interfere with the routine activity of the department.

The topic is **"A STUDY TO ASSESS THE EFFECTIVENESS OF BUBBLE GUM CHEWING IN EARLY RETURN OF BOWEL MOVEMENTS AMONG PATIENTS AFTER SPECIFIC ABDOMINAL SURGERIES IN RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL,CHENNAI-03".**

Forwarded [illegible] 01/07/15

Kindly consider my request and permit me to conduct the study.

Thanking you

(1) Laparotomy — Electro
(2) Ostomy
(3) ~~Laparoscopy~~

Yours sincerely,

Keziaevangelin . D

Date : 1/07/2015

Place : CHENNAI - 03

To give List on a monthly basis for approval and information to concern unit chief

Dr. P. RAGUMANI, M.S
DIRECTOR
Institute of General Surgery
Madras Medical College,
CHENNAI-600 003

APPENDIX - H

ஆராய்ச்சி தகவல் தாள்

ஆராய்ச்சி தலைப்பு : வயிற்று அறுவை சிகிச்சை மேற்கொண்ட நோயாளிகளுக்கு விரைவில் குடல் அசைவு திரும்ப பபுல்கம் (மெல்லும் கோந்து) உபயோகித்தல் பற்றிய திறனாய்வு

ஆய்வாளர் பெயர் : செல்வி கெசியா இவாஞ்சலின். டே

பங்கேற்பாளர் பெயர் :

தேதி :

வயது :

பாலினம் :

ஆராய்ச்சி சேர்க்கை எண் :

நான் இராஜீவ் காந்தி அரசு பொது மருத்துவ மனையில் அறுவைக்குப் பிற்காலம் பிரிவு மற்றும் ஆண்/பெண் அறுவை சிகிச்சை பிரிவில் உள் நேயாளிகளைக் கொண்டு திறனாய்வு மேற்கொள்கிறேன்.

வுயிற்று அறுவை சிகிச்சையின் மேற்கொண்ட நோயாறிகளுக்கு முதலாம் அறுவைக்குப் பிற்காலம் முதல் மூன்றாம் அறுவைக்குப் பிற்காலம் வரை மெல்லும் கோந்தை 5 முதல் 45 நிமிடம் வரை மெல்ல நாள் ஒன்றுக்கு மூன்று வேலையாக (காலை, மதியம், மாலை) என மூன்று நாட்களுக்கு கொடுக்க போகிறேன்.

இந்த செயல்முறையின் மூலம் நோயாளிகளுக்கு விரைவில் குடல் அசைவு உண்டாகும். இதனை நோயாளிகள் பயன்படுத்திக்கொள்ளலாம்.

நோயாளிகள் தங்கள் சொந்த விருப்பத்தின்பேரில் ஆராய்ச்சியில் இணைக்கப்படுவர். விருப்பமில்லையென்றால் எந்நேரமும் விலகிக் கொள்ளலாம். இதனால் ஆராய்ச்சிக்கு எந்தவித பாதிப்பும் ஏற்படாது.

முடிவுகளை அல்லது கருத்துகளை வெளியிடும்போது வெளியிடும்போது தங்களின் பெயரையோ அல்லது அடையாளங்களையோ வெளியிடமாட்டோம் என்பதை தெரிவித்துக் கொள்கிறோம்.

ஆராய்ச்சியாளர் கையொப்பம்
தேதி:

பங்கேற்பாளர் கையொப்பம்
தேதி:

ஆராய்ச்சி ஒப்புதல் படிவம்

ஆராய்ச்சி தலைப்பு : வயிற்று அறுவை சிகிச்சை மேற்கொண்ட நோயாளிகளுக்கு விரைவில் குடல் அசைவு திரும்ப பபுல்கம் (மெல்லும் கோந்து) உபயோகித்தல் பற்றிய திறனாய்வு

பெயர் :

வயது :

தேதி :

உள் நோயாளி எண் :

பாலினம் :

ஆராய்ச்சி சேர்க்கை எண் :

இந்த ஆராய்ச்சியின் விவரங்களும் அதன் நோக்கங்களும் முழுமையாக எனக்கு தெளிவாக விளக்கப்பட்டது.

எனக்கு விளக்கப்பட்ட விஷயங்களை நான் புரிந்துக் கொண்டு நான் எனது சம்மதத்தை தெரிவிக்கிறேன்.

இந்த ஆராய்ச்சியில் பிறரின் நிர்பந்தனையின்றி சொந்த விருப்பத்தின்பேரில் தான் பங்கு பெறுகின்றேன் மற்றும் நான் இந்த ஆராய்ச்சியிலிருந்து எந்நேரமும் பின்வாங்கலாம் என்பதையும், அதனால் எந்தவித பாதிப்பும் ஏற்படாது என்பதையும் நான் புரிந்துக் கொண்டேன்.

இந்த ஆராய்ச்சியின் தகவல்களை வெளியிட சம்மதிக்கிறேன். அப்படி வெளியிடும்போது என் அடையாளம் வெளிவராது என்பதை அறிவேன்.

நான் என் சுயநினைவுடனும் மற்றும் முழு சுதந்திரத்திடனும் இந்த ஆய்வில் பங்குபெற சம்மதிக்கிறேன்.

நான் இந்த ஆராய்ச்சிக்கு என்னுடைய முழு ஒப்புதலை அளிக்கிறேன்.

எனக்கு இந்த ஒப்புதல் கடிதத்தின் நகல் கொடுக்கப்பட்டது.

ஆராய்ச்சியாளர் கையொப்பம்
தேதி:

பங்கேற்பாளர் கையொப்பம்
தேதி:

INFORMED CONSENT

Title of the study : **"A STUDY TO ASSESS THE EFFECTIVENESS OF BUBBLE GUM CHEWING IN EARLY RETURN OF BOWEL MOVEMENTS AMONG PATIENTS AFTER SPECIFIC ABDOMINAL SURGERIES AT RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL, CHENNAI-3".**

Investigator : Kezia evangelin.D

Name of Participant :

Age/sex :

Date :

Name of the institution: Rajiv Gandhi Government General Hospital, Chennai-3

Documentation of the informed consent: (legal representative can sign if the participant is minor or competent).

- I _____have read/it has been read for me, the information in this form. I was free to ask any questions and they have been answered. I am over 20 yrs of age and exercising my free power of choice, hereby give my consent to be included as a participant in the study.
- I have read and understood this consent form and the information provided to me.
- I have had the consent document explained in detail to me.
- I have been explained about the nature of my study.
- My rights and responsibilities have been explained to me by the investigator.
- I agree to cooperate with the investigators.

- I have not participates in any research study at any time.
- I am aware of the fact that I can opt out of the study at any time without having to give any reason
- I hereby give permission to the investigators to release the information obtained from me as a result of participation in this study to the regulatory authorities, government agencies and Institutional ethics committee.
- I understand that they are publically presented; my identity will be kept confidential.
- I am aware that I have any question during this study; I should contact the concerned investigator.

Signature of Investigator

Date:

Signature of Participants

Date:

APPENDIX - B

CERTIFICATE FOR CONTENT VALIDITY

This is to certify that a tool prepared by **Ms. Keziaevangelin .D** , studying M.Sc.Nursing II year, College of Nursing, Madras Medical College, undertaking a Research study on **" A STUDY TO ASSESS THE EFFECTIVENESS OF BUBBLE GUM CHEWING IN EARLY RETURN OF BOWEL MOVEMENTS AMONG PATIENTS AFTER SPECIFIC ABDOMINAL SURGERIES IN RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL, CHENNAI- 03"** , has been validated by me and is found to be valid upto date and she can proceed with this tool to conduct the main study.

SIGNATURE WITH SEAL

Prof. S.M. CHANDRAMOHAN, M.S.,M.Ch.,F.A.C.S.,
Director & Head
Institute of Surgical Gastroenterology
MMC & RGGGH, Chennai - 600 003.

Name :

Designation :

Date :

Place :

APPENDIX - D

From

Keziaevangelin .D,
M.Sc.,(N) II Year,
College Of Nursing,
Madras Medical College,
Chennai-O3.

To

The Professor and Head Of The Department,
Department Of Surgical Gastroentrology,
Rajiv Gandhi Government General Hospital,
Chennai-03.

Through

The proper channel.

Respected Sir /Madam,

Sub: Permission for conducting Research study in Department Of Surgical Gastroenterology at Rajiv Gandhi Government General Hospital –requested –regarding

I **Ms.Keziaevangelin. D** M.Sc (N) II year student ,College Of Nursing, Madras Medical College, Chennai-03, in partial fulfillment of M.Sc., Nursing course , have a plan to conduct Research study on topic mentioned below in Department Of Surgical Gastroenterology, Rajiv Gandhi Government General Hospital ,Chennai -600 003.The study period is from 06-07-2015 to 31-08-2015 . I assure that I will not interfere with the routine activity of the department.

The topic is **"A STUDY TO ASSESS THE EFFECTIVENESS OF BUBBLE GUM CHEWING IN EARLY RETURN OF BOWEL MOVEMENTS AMONG PATIENTS AFTER SPECIFIC ABDOMINAL SURGERIES IN RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL,CHENNAI-03".**

Kindly consider my request and permit me to conduct the study.

Thanking you

Yours sincerely,

Keziaevangelin .D

Date :9/07/2015

Place : CHENNAI - 03

08/7/2015

Prof. S.M. CHANDRAMOHAN, M.S.,M.Ch.,F.A.C.S.,
Director & Head
Institute of Surgical Gastroenterology
M.M.C & RGGGH, Chennai - 600 003.

APPENDIX – G

PROCEDURE

DEFINITION

A type of chewing gum that is flavored and insoluble made from the chicle for chewing.

HEALTH BENEFITS OF BUBBLE GUM CHEWING

- Chewing gum improves oral health
- Reduces the symptoms of stress
- Improves digestion

PURPOSES

- It is a type of Sham feeding that accelerates bowel function

ARTICLES

- Bubble gum
- Spoon

PROCEDURE

- Explain the procedure to the subjects
- Obtain consent from the subjects
- Make the subjects to be in comfortable semi flower's position
- Three sugarless bubble gums per day is given to the subject from the first post operative day to third post operative day to chew for half an hour in the morning by 7am, 12 noon and 5pm in the evening. Ensured that the subjects spitted the bubble gum after chewing.
- Post assessment is done.

SECTION – F

DEMOGRAPHIC DATA

1) Name of the patient
2) Gender
   (a) Male
   (b) Female
3) Age
   (a) 21 – 30 years
   (b) 31 – 40 years
   (c) 41 – 50 years
   (d) > 51 years
4) History of personal habits
   (a) Smoking
   (b) Alcohol
   (c) Tobacco / betel chewing
   (d) None of the above
5) Bowel habits
   (a) Regular
   (b) Irregular
6) Date of the surgery
7) Body mass index
   a) Under weight
   b) Normal
   c) Obese
8) Name of the surgery
   a) Colectomy
   b) Gastrectomy
   c) Whipples procedure
   d) Freys procedure

OBSERVATIONAL CHECKLIST

SNO	QUESTIONNAIRE	DATE
1.	First bowel sound heard after surgery	
2.	Feeling of hunger for the first time after surgery	
3.	First flatus passed after surgery	
4.	First defecation	

DAYS	SCORES
Within – 2 days	3
4^{th} day	2
5^{th} day	1
More than 5 days	0

5. Post operative complications
   a) Post operative fever
   b) Wound infection
   c) Deep vein thrombosis
   d) nil

6. Activities of daily living
   a) Independent
   b) Dependent
   c) Border-line

7. Date of discharge