

A STUDY TO ASSESS THE EFFECTIVENESS OF SELF-INSTRUCTIONAL MODULE ON KNOWLEDGE REGARDING PREVENTION OF SELECTED POST-OPERATIVE COMPLICATIONS AMONG PATIENTS UNDERGOING ABDOMINAL SURGERY IN SELECTED HOSPITALS OF NALBARI, ASSAM

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Abstract: Introduction: Post-operative complications remain a significant concern following abdominal surgeries, often causing prolonged hospital stays, increased healthcare costs, and reduced patient outcomes. Patient education is vital in preventing such complications. Self-instructional modules offer a structured, cost-effective method to enhance knowledge and promote self-care during recovery.

Objectives: To assess the effectiveness of self-instructional module on knowledge regarding prevention of selected post-operative complications among patients undergoing abdominal surgery.

Method: Pre experimental research design (one-group pretest post -test research design) was adopted for this study. 60 abdominal surgery patients were selected by purposive sampling technique. The study was conducted in 2 hospitals of Nalbari i.e. Nalbari Medical College and Hospital and Sushrusa Hospital. Tools for data collection were demographic proforma, clinical proforma and self-administered structured knowledge questionnaire regarding prevention of selected post operative complications. Knowledge was assessed with the help of self-administered structured knowledge questionnaires on the preoperative day before intervention followed by providing self-instructional module. On 5th day post-test was conducted by using the same tool.

Result: Findings of the study revealed that during pre-test 35(58.3%) of participants had inadequate knowledge, 25 (41.7%) of participants had moderate knowledge while none of them had adequate knowledge before intervention whereas in post-test majority 48(80%) had adequate knowledge and minority 12(20%) had moderate knowledge regarding prevention of selected post operative complications. Post-test mean knowledge score is 15.43 ± 2.76 which was higher than the pre- test mean knowledge score that was 6.95 ± 2.78 with the mean difference of 8.48. The effectiveness was tested using Paired t test with obtained p-value (0.001) is less than 0.05 (at t value of 23.92).

Conclusion: Findings revealed that the self-instructional module was effective in improving knowledge regarding the prevention of selected post-operative complications among patients undergoing abdominal surgery.

Keywords: Assess, Effectiveness, Self-Instructional module, Knowledge, post- operative complications, abdominal surgery.

INTRODUCTION

Surgery is both art and science of using instruments and procedures to treat illnesses, wounds, and abnormalities. Patients, the surgeon, the anesthesia care provider (ACP), the nurse, and other members of the healthcare team as needed interact in a multidisciplinary manner during the surgical procedure.¹ The post-operative period begins as soon as the patient leaves the operating room and continues until their last follow-up visit with the surgeon.²

A postoperative complication is defined as any deviation from the typical postoperative course, as per the Clavien-Dindo classification. This classification encompasses a spectrum of severity, from non-life-threatening complications that do not result in enduring disability to fatal cases.³

Abdominal surgery encompasses a wide range of surgical procedures that entail the opening of the abdomen (laparotomy).⁴ Through incisions, a mass or masses in the center of your body are removed during abdominal surgery. Treatment of abdominal aortic aneurysms, appendectomy, and gallbladder surgery are common types of abdominal surgery. Open surgery may still be required in certain situations, even if minimally invasive surgery has grown in popularity.⁵ Abdominal surgery is a specialized medical

procedure performed to treat various conditions affecting the organs within the abdominal cavity. It is vital in promoting patients' health and enhancing their quality of life, particularly in managing digestive disorders or removing cancerous growths.⁶

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Common abdominal surgeries include appendectomy, cholecystectomy, hernia repair, bowel resection, and procedures like gastrostomy and liver or pancreatic surgeries. Pancreatic operations may involve procedures such as the Whipple surgery, typically done for pancreatic cancer or chronic pancreatitis. Transplantation of abdominal organs like the liver, kidneys, pancreas, or small intestine is also performed to replace severely damaged or non-functioning organs. Colorectal surgeries address diseases of the colon, rectum, and anus, including haemorrhoid removal, rectal disorder treatment, and partial or total colectomy.⁷

During the post-operative period, patients may experience a range of complications. These can include urinary issues such as retention or urinary tract infections, and gastrointestinal problems like nausea, vomiting, abdominal bloating, flatulence, delayed stomach emptying, hiccups, or postoperative ileus. Neurological and psychological concerns may arise, including pain, fever, confusion, hypothermia, or postoperative cognitive impairment. Respiratory complications can involve airway blockage, shallow breathing, aspiration, lung collapse (atelectasis), pneumonia, low oxygen levels, pulmonary embolism, or bronchospasm. Additionally, skin and wound-related issues such as infection, hematoma, or wound dehiscence may occur.⁸

The number of surgeries performed worldwide continues to rise each year. However, postoperative complications (POCs) can negatively impact several essential aspects of a patient's health. In abdominal surgeries, approximately 7% to 15% of patients are likely to experience POCs, with an estimated mortality rate ranging from 0.79% to 5.7%. These complications can greatly affect an individual's quality of life and physical functioning. Moreover, POCs place a considerable economic strain on the healthcare system, especially when they result in the need for intensive care, repeat surgeries, or hospital readmissions.⁹

NEED OF THE STUDY.

One of the main causes of sickness and mortality in India is SSIs. In India, the SSI rate varies greatly, ranging from 1.6% to 38% depending on the context. This variation may result from variations in the hospital environment, infection control protocols, clinical practices, and hospital population characteristics.¹⁰

Ashraf N, Zargar OU, Albina A, Ahmed S (2024) carried out a prospective cross-sectional study at SKIMS Hospital to determine incidence and determinants of postoperative pulmonary complications (PPCs) in abdominal surgery patients. A total of 290 patients were selected using systematic random sampling and monitored for seven days post-surgery. The incidence of PPCs was found to be 32%. Key contributing factors included age over 65 years, surgery lasting more than 3 hours, low preoperative oxygen saturation (<94%), low postoperative serum albumin (<3.5 g/dl), and a history of smoking. Both bivariate and multivariate logistic regression analyses confirmed the statistical significance of these associations. The study concluded that the incidence of postoperative pulmonary complications in abdominal surgeries is notably high, and several factors, particularly age, surgery duration, oxygen saturation, and serum albumin levels, are strongly associated with these complications. The study emphasized the need for early identification of high-risk patients to prevent PPCs.¹¹

A study conducted between June 2020 and May 2021 at Jorhat Medical College and Hospital (JMCH) found that 13.3% of 150 patients receiving abdominal operations had SSI. The fatality rate associated with SSIs in surgical abdominal procedures is noteworthy, at 3.60% (9 fatalities). Sepsis, hematoma, seroma, and wound dehiscence are among the additional frequent side effects of abdominal surgery.¹²

It has been shown that improving postoperative outcomes involves educating the patient about their procedure and recuperation.¹³ One of the main causes of postoperative morbidity is infections of the skin and subcutaneous tissues around the surgical site. It is well recognized that surgical site infections (SSI) raise costs, length of stay (LOS), and rehabilitation time. PPCs are linked to higher rates of morbidity, LOS, death, and medical costs. One in five PPC patients are predicted to die within 30 days following major surgery, with a frequency ranging from 2 to 19%.¹⁴ Following elective surgery, one in three patients is expected to experience difficulties, and one in eleven patients is likely to pass away as a result of complications.¹⁵

Post operative complications significantly contribute to morbidity, prolonged recovery and extended hospital stays. Lack of patient's knowledge of preventive procedures exacerbates these issues. A self-instructional module serves as an effective tool to provide structured and self-paced learning. By exploring the effectiveness of self-instructed modules, this study aims to enhance current preventive strategies, improve patient outcomes and more effective healthcare practices.

OBJECTIVES

GENERAL OBJECTIVE

- To assess the effectiveness of self-instructional module on knowledge regarding prevention of selected post-operative complications among patients undergoing abdominal surgery.

SPECIFIC OBJECTIVES

1. To assess the pre-test knowledge regarding prevention of selected post-operative complications among patients undergoing abdominal surgery.
2. To evaluate the effectiveness of self-instructional module on knowledge regarding prevention of selected post-operative complications among patients undergoing abdominal surgery.
3. To find out association between pre-test knowledge score regarding prevention of selected post-operative complications and selected demographic variables.
4. To find out association between pre-test knowledge score regarding prevention of selected post-operative complications and selected clinical variables.

HYPOTHESES

- H₁: There is a significant difference between mean pre-test and post-test knowledge score regarding prevention of selected post-operative complications among patients undergoing abdominal surgery.
- H₂: There is a significant association between mean pre-test knowledge score regarding prevention of selected post-operative complications and selected demographic variables.
- H₃: There is a significant association between mean pre-test knowledge score regarding prevention of selected post-operative complications and selected clinical variables.

RESEARCH METHODOLOGY

The present study was conducted to assess the effectiveness of self-instructional module on knowledge regarding prevention of selected post operative complications among patients undergoing abdominal surgery in selected hospitals of Nalbari, Assam

Research approach: Quantitative research approach

Research design: Pre experimental (one group pre-test post-test research design)

Population: Patients undergoing abdominal surgery.

Target population: Patients aged 20 to 70 years undergoing elective abdominal surgery under general anaesthesia

Accessible population: Elective abdominal surgery patients at Nalbari medical college and hospital and Sushrusa hospital who meet the set criteria and available during data collection.

Sample: 60 Abdominal surgery patients in Nalbari Medical College and Hospital and Sushrusa Hospital, Nalbari.

Sampling technique: Non-probability (purposive sampling technique).

Tools for data collection: Section-A: Demographic Variables. Section B: Clinical Variables. Section C: Self-administered structured knowledge questionnaire

Theoretical framework- The conceptual framework choosen for the study is based on General System Theory.

Descriptive Statistics- Frequency, percentage, mean and standard deviation were used

Inferential statistics: Chi-square and paired t-test were used.

Result

SPSS 20 and a Microsoft Office Excel worksheet were used to assemble and analyze the data.

Table 1. Frequency and percentage distribution of pre-test and post-test level of knowledge regarding prevention of selected post-operative complications among patients undergoing abdominal surgery

Level of knowledge	Pre-Test		Post-Test	
	f	%	f	%
Inadequate	35	58.3	0	0
Moderate	25	41.7	12	20
Adequate	0	0	48	80

Table 1. depicts that during pre-test majority 35(58.3%) of abdominal surgery patient had inadequate knowledge and only 25(41.7%) had moderate knowledge where as in post-test maximum 48(80%) of abdominal surgery patient had adequate knowledge and 12(20%) had moderate knowledge regarding prevention of selected post operative complications among patients undergoing abdominal surgery.

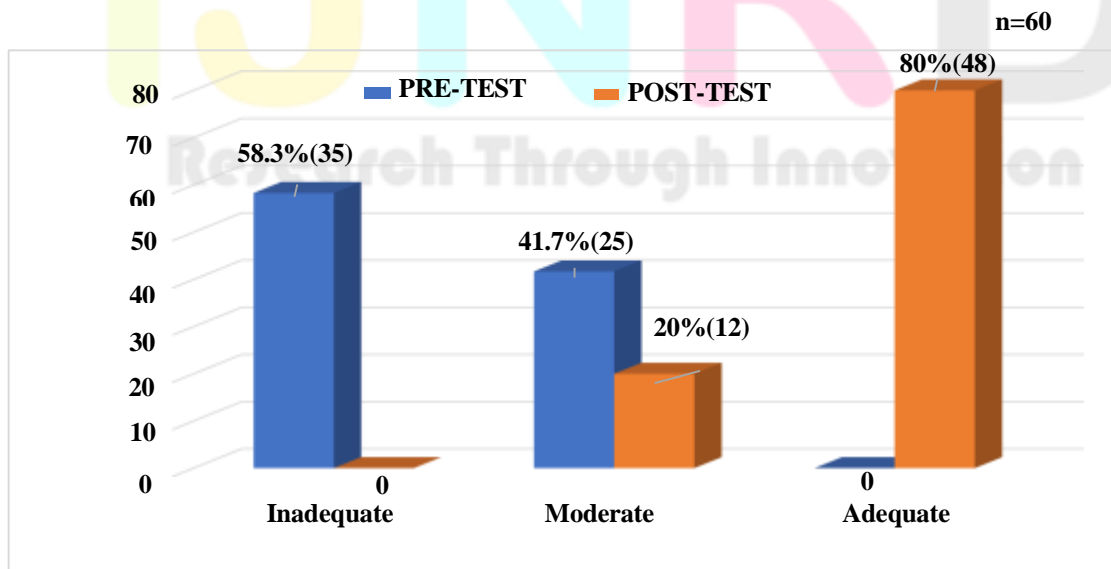


Fig 1: Percentage distribution of Pre-test and post-test level of knowledge regarding prevention of selected post-operative complications among patients undergoing abdominal surgery

Table 2: Descriptive statistics showing minimum and maximum score range, Mean, Median, Mode and Standard Deviation (SD) of pre- test and post-test level of knowledge regarding prevention of selected post operative complications.

n =60

Characteristics	Minimum	Maximum	Range	Mean	Median	Mode	Standard deviation
Pre-test	3	13	10	6.95	6	6	2.78
Post-test	8	20	12	15.43	16	15	2.76

Table 2 demonstrates that mean post-test score (15.43) was higher than the mean pre- test score (6.95). Similarly, the median post-test knowledge score (16) was higher than the median pre-test knowledge score (6). Although the standard deviation of the post-test scores (2.76) was marginally lower than that of the pre-test scores (2.78). So, the overall findings clearly indicate an improvement in knowledge levels following the intervention.

Table 3: Effectiveness of self-instructional module on knowledge regarding prevention of selected post-operative complications among patients undergoing abdominal surgery.

n=60

Comparison of level of knowledge	Mean	SD	Mean Difference	t test value	df	p value
Pre-test	6.95	2.78	8.48	23.92	59	0.001*
Post-test	15.43	2.76				

*p<0.05 level of significance

Table 3 depicts the effectiveness self-instructional module on knowledge regarding prevention of selected post-operative complications among patients undergoing abdominal surgery which was tested by using paired t test.

The results revealed that mean post-test knowledge score 15.43 (2.76) higher than mean pre-test knowledge score 6.95 (2.78) with mean difference of 8.48 and obtained (t value=23.92, df=59, p=0.001) was found statistically significant at p<0.05 level.

These findings indicate that self-instructional module was effective in improving the knowledge regarding prevention of selected post-operative complications among patients undergoing abdominal surgery. Therefore, the research hypothesis (H₁) was accepted.

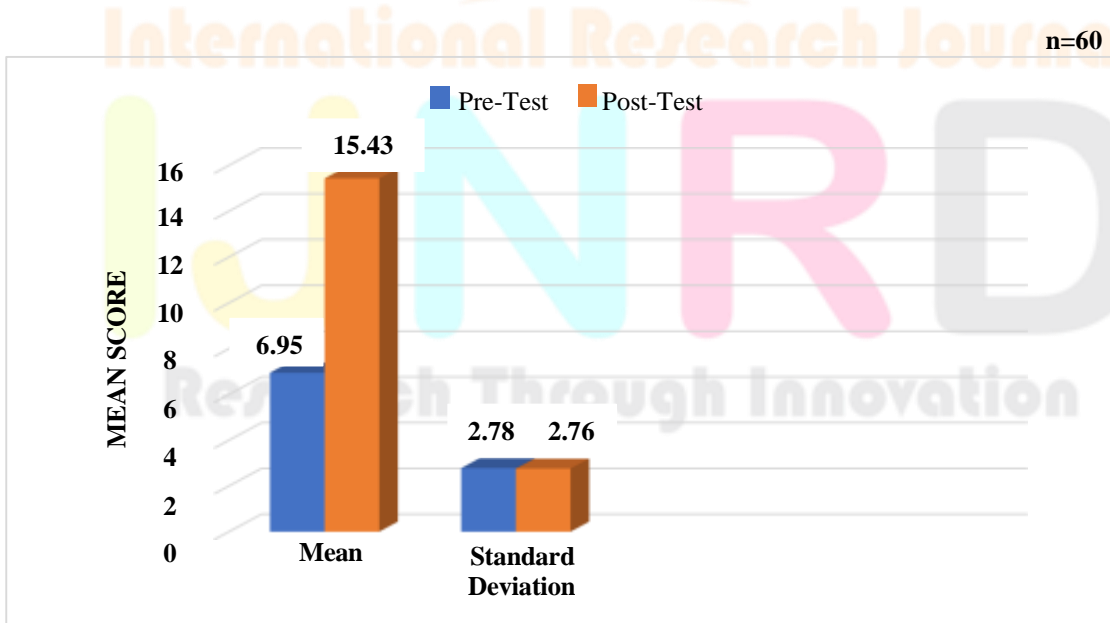


Fig 2: Comparison of pre-test and post-test mean score and SD of level of knowledge regarding prevention of selected post-operative complications among patients undergoing abdominal surgery.

Table 4: Association between pre-test knowledge regarding prevention of selected post-operative complications among patients undergoing abdominal surgery selected demographic variables.

n=60

S. No	Demographic Variables	Pre-test knowledge		χ^2 value	df	p value
		Inadequate	Moderate			
1	Age in years			5.037	4	0.290 ^{NS}
	a. 20-29	6	7			
	b. 30-39	6	5			
	c. 40-49	13	5			
	d. 50-59	5	7			
e. 60-70	5	1				
2	Gender			1.936	1	0.164 ^{NS}
	a. Male	19	18			
	b. Female	16	7			
3	Educational status			1.320	3	0.791 ^{NS}
	a. Primary education	3	1			
	b. Secondary education	19	14			
	c. Higher secondary	12	8			
	d. Graduate and above	1	2			
4	Occupation			5.740	6	0.452 ^{NS}
	a. Unemployed	2	2			
	b. Homemaker	14	5			
	c. Daily wager	7	6			
	d. Self employed	8	9			
	e. Private job	2	2			
	f. Government job	2	0			
g. Retired	0	1				
5	Marital status			3.867	2	0.149 ^{NS}
	a. Married	26	21			
	b. Unmarried	4	4			
	c. Widowed	5	0			
	d. Divorced	--	--			

*p value < 0.05 level of significance

NS-Non Significant

Table 4 depicts the association between pre-test knowledge regarding prevention of selected post-operative complications among patients undergoing abdominal surgery and selected demographic variables which was tested by using chi-square test. The findings indicated that demographic variables such as age, gender, educational status, occupation and marital status did not show any significant association with pre-test knowledge on preventing selected post-operative complications at the $p < 0.05$ level among these patients. The H_2 hypothesis was rejected.

Table 5: Association between pre-test knowledge regarding prevention of selected post-operative complications among patients undergoing abdominal surgery selected clinical variables.

S. No	Clinical Variables	Pre-test knowledge		χ^2 value	df	p value
		Inadequate	Moderate			
1	Diagnosis			7.091	5	0.213 ^{NS}
	a. Appendicitis	4	7			
	b. Cholecystitis	3	3			
	c. Cholelithiasis	12	2			
	d. Chronic calculous	9	6			

n=60

	cholecystitis					
	e. Right inguinal hernia	5	5			
	f. Left inguinal hernia	2	2			
2	Name of surgery					
	a. Appendectomy	8	3	1.152	2	0.549 ^{NS}
	b. Cholecystectomy	20	15			
	c. Bowel resection	--	--			
	d. Pancreatectomy	--	--			
	e. Hernia repair	7	7			
	f. Colectomy	--	--			
	g. Nephrectomy	--	--			
3	History of previous surgery					
	a. Yes	6	1	2.760	1	0.222 ^{NS}
	b. No	29	24			

***p value < 0.05 level of significance NS-Non Significant**

Table 5 depicts the association between pre-test knowledge regarding the prevention of selected post-operative complications among patients undergoing abdominal surgery and selected clinical variables which was tested by using chi-square test. Result revealed that clinical variables such as diagnosis, name of surgery and history of previous surgery were not found any significant association at $p < 0.05$ level with pre- test knowledge regarding prevention of selected post-operative complications among patients undergoing abdominal surgery. Hence, the research hypothesis (H_3) was rejected.

DISCUSSION

- In the present study, During pre-test majority 35(58.3%) of abdominal surgery patients had inadequate knowledge and only 25(41.7%) had moderate knowledge where as in post-test maximum 48(80%) of abdominal surgery patients had adequate knowledge and 12(20%) had moderate knowledge regarding prevention of selected post operative complications among patients undergoing abdominal surgery. The present study finding supported by the study conducted by Rathore AS, Singh R, Sharma R. (2024) conducted a study on to Assess the Effectiveness of Self Instruction Module on Knowledge regarding Post Operative Management among Relatives of Patient Undergoing Abdominal Surgeries in Selected Hospital at Kota, Rajasthan. The study aimed to assess the effectiveness of a self-instruction module designed to improve the knowledge of relatives regarding post-operative management for patients undergoing abdominal surgeries in a selected hospital in Kota, Rajasthan. During the Pre-Test, 76.67% of participants exhibited a low level of knowledge, while 23.33% showed an average understanding. Not a single participant displayed a good level of knowledge about post-operative management. Whereas in Post-Test after the self-instruction module, Seventy percent of those surveyed demonstrated an average level of knowledge. Meanwhile, 18.33% exhibited a poor level of understanding, and 11.67% attained a good level of knowledge. The self- instruction module was found to be effective in significantly enhancing the knowledge of relatives concerning post-operative management.¹⁶
- In the present study, the result shows the effectiveness of Self-Instructional Module on knowledge regarding prevention of selected post-operative complications among patients undergoing abdominal surgery. The findings indicated that post-test mean knowledge score (15.43 ± 2.76) was higher than pre-test mean knowledge score (6.95 ± 2.78) with mean difference 8.48. The effectiveness was tested using paired t test with obtained ($t = 23.92$) at $df = 59$ was statistically significant at $p < 0.001$ level. Thus, the findings revealed that Self Instructional Module was effective in improving the knowledge regarding prevention of selected post-operative complications among patients undergoing abdominal surgery. Hence the H_1 hypothesis accepted. The present study finding supported by the study conducted by Patidar D, Patidar K, Chaudhary V. (2021) conducted A study to assess the effectiveness of structured teaching programme on knowledge regarding postoperative management among relatives of patients undergoing abdominal surgeries at selected hospitals of Mehsana City. This investigated how effective a structured educational program was in improving the knowledge of family members caring for patients after abdominal surgery. Conducted in selected hospitals in Mehsana city, the research used a pre-experimental one-group pretest-posttest design involving 60 participants chosen through convenience sampling. Before and after providing the educational intervention, the participants were tested using a custom-made knowledge questionnaire. The results showed a clear improvement in knowledge after the program—the average score rose from 9.96 in the pretest to 13.86 in the posttest. Statistical analysis confirmed that this improvement was significant.¹⁷

- In the present study, the association between pre-test level of knowledge regarding prevention of selected post-operative complications among patients undergoing abdominal surgery with their demographic variables which was tested using chi-square test. The results revealed that variables such as Age, Gender, Educational status, Occupation, Marital status, were found to be statistically non-significant with pre-test level of knowledge regarding prevention of selected post-operative complications among patients undergoing abdominal surgery. Hence H₂ hypothesis was rejected. The findings of the present study are supported by Ahmed B. S. and Yadav C.K. (2025), who conducted a study to assess effectiveness of structured teaching programme on prevention of selected postoperative complications among 300 patients undergoing abdominal surgeries. A pre-experimental design with convenient sampling was used. Results showed a significant improvement in knowledge after the intervention, with the mean score increasing from 16.15 (SD 4.65) in the pretest to 30.7 (SD 5.387) in the posttest (P<0.01). No significant association was found with age, gender, religion, occupation, marital status, type of family, place of domicile, dietary pattern, personal habits, and source of health information. However a significant association was found between pretest knowledge and educational status. The study concluded that the structured teaching programme was effective in enhancing patients' knowledge regarding the prevention of selected post-operative complications.¹⁸
- In the present study, the association between pre-test level of knowledge regarding prevention of selected post-operative complications among patients undergoing abdominal surgery with their clinical variables which was tested using chi-square test. The chi squares value revealed diagnosis, name of surgery, history of previous surgery were found to be statistically non-significant with pre-test level of knowledge regarding prevention of selected post-operative complications among patients undergoing abdominal surgery. H₃ hypothesis rejected. The present study finding supported by the study conducted by Andal M, Chauhan A, Sachan A, Shee B, Neha K, Kushwaha R, et al. (2019) conducted A study to assess the effectiveness of structured teaching programme on knowledge regarding post-operative exercises to prevent post-operative complications among patients undergoing abdominal surgery at Rama Hospital, Mandhana, Kanpur, UP. The aimed to evaluate the impact of a structured teaching program (STP) on patients' knowledge about postoperative exercises designed to prevent complications following abdominal surgery. Utilizing a one-group pretest-posttest design, the researchers selected 30 patients undergoing abdominal surgery at Rama Hospital using purposive sampling. A structured questionnaire was employed to assess the patients' knowledge before and after the STP. The findings revealed a significant improvement in patients' knowledge, with the mean posttest score (18.5) surpassing the mean pretest score (10.6). However, no significant association was found between knowledge scores and demographic variables such as age, gender, education, area of living, associated illnesses, or prior knowledge about postoperative exercises.¹⁹

CONCLUSION

From the finding of the present study, it can be concluded that Self-Instructional Module on prevention of selected post-operative complications was effective in increasing knowledge among abdominal surgery patients. It is important for the health personnel to take initiative in educating abdominal surgery patients regarding prevention of post operative complications to reduce the morbidity and mortality.

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REFERENCES

1. Lewis SL et.al. (2011) "Medical-Surgical Nursing", Vol.1 New Delhi, Elsevier Publication (p) Ltd. p. 328.
2. Hinkle L J. Brunner and Suddarth's: "Textbook of Medical-Surgical Nursing". 13th ed. Vol 1 New Delhi: Wolters Kluwer (India) Pvt Ltd; 2015. P-440
3. Dencker et al. "Postoperative complications: an observational study of trends in the United States from 2012 to 2018". BMC surgery .2021; vol.21, issue 393; p. 1-10. Available from : <https://doi.org/10.1186/s12893-021-01392-z>
4. URL: https://en.m.wikipedia.org/wiki/Abdominal_surgery
5. McMillan A. Abdominal surgery: understanding these important procedures [Internet]. Evansville Surgical Associates; 2022 Apr 5. Available from: <https://www.evansvillesurgical.com/abdominal-surgery-understanding-these-important-procedures/>
6. Team Acko. Abdominal surgery: Meaning, scope, and other details [Internet]. Acko Health Insurance; 2024 May 13. Available from: <https://acko.com/health-insurance/abdominal-surgery/>
7. Team Acko. Abdominal surgery: Meaning, scope, and other details [Internet]. Acko Health Insurance; 2024 May 13. Available from: <https://acko.com/health-insurance/abdominal-surgery/>
8. Lewis SL et.al. (2011) "Medical-Surgical Nursing", Vol.1 New Delhi, Elsevier Publication (p) Ltd. p. 285.
9. Dajenah M, Ahmed F et.al (2022) "Early Postoperative Complications of Gastrointestinal Surgery and Its Associated Factors in Yemeni Patients Treated in a Teaching Hospital: A Retrospective Monocentric Study", /cureus vol 14, Issue5. DOI 10.7759/cureus.25215. (Available from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9213070/>)
10. Mekhla, Borle,Rajib F,(2019) determinants of superficial surgical site infections in abdominal surgeries at a Rural Teaching Hospital in Central India A prospective study: journal of family medicine and primary care ,vol-8 , Issue 7, p. 2258-2263. doi: 10.4103/jfmpc.jfmpc_419_19

11. Ashraf N, Zargar OU, Albina A, Ahmed S. Study of incidence and factors associated with postoperative pulmonary complications in patients undergoing abdominal surgery. *International Journal of Research in Medical Sciences*. 2024 Oct 30;12(11):4129–35.
12. Baro CA, Rongpi R, Barua P et.al (2022) incidence of surgical site infection in abdominal surgery in a tertiary care center in assam, *international journal of advanceresearch*,vol-10,Issue-3,p.835-840. Available from <https://www.journalijar.com/article/40494/incidence-of-surgical-site-infection-in-abdominal-surgery-in-a-tertiary-care-center-in-assam/>
13. Miriana 2022, post operative nursing care plan: the nursing journal. Available from: <https://www.thenursingjournal.com/post/post-op-nursing-care-plans>
14. Thomas M, Joshi R, Bhandare M, Agarwal V. (2020): Complications after Supramajor Gastrointestinal Surgery: Role of Enhanced Recovery after Surgery: *Indian Journal of Critical Care Medicine*, September 2020;24 (Suppl 4): doi:10.5005/jp-journals-10071-23615. Available from: <https://doi.org/10.5005%2Fjp-journals-10071-23615>
15. Agarwal V, Muthuchellappan R et al. postoperative Outcomes Following Elective Surgery in India. *Indian J Crit Care Med*. 2021; Volume 25(Issue 5) (May 2021) P. 528-534doi:10.5005/jp-journals-10071-23807. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8196380/>
16. Rathore AS, Singh R, Sharma R. A Study to Assess the Effectiveness of Self Instruction Module on Knowledge regarding Post Operative Management among Relatives of Patient Undergoing Abdominal Surgeries in Selected Hospital at Kota, Rajasthan. *International Journal of Nursing Education and Research*. 2024 Mar 13;63–6
17. Patidar D, Patidar K, Chaudhary V. A study to assess the effectiveness of structured teaching programme on knowledge regarding postoperative management among relatives of patients undergoing abdominal surgeries at selected hospitals of Mehsana City. *Int J Nurs Educ Res*. 2021;9(2):182–4. doi:10.5958/2454-2660.2021.00044.2
18. Ahmed SB, Yadav KC. Effectiveness of structured teaching programme on prevention of selected postoperative complications among patients undergoing abdominal surgeries. *Universe Int J Interdiscip Res [Internet]*. 2022 Apr;2(11):75–82. Available from: <https://www.researchgate.net/publication/391586951>
19. Andal M, Chauhan A, Sachan A, Shee B, Neha K, Kushwaha R, et al. A study to assess the effectiveness of structured teaching programme on knowledge regarding post-operative exercises to prevent post-operative complications among patients undergoing abdominal surgery at Rama Hospital, Mandhana, Kanpur, UP. *J Nurs Pract Educ*. 2019 Jun;5(2):41–4. Available from: https://www.ramauniversityjournal.com/nursing/pdf_june2019/jnpe050241-4407032019.pdf

