EMPOWERING PREOPERATIVE PATIENTS: ENHANCING UNDERSTANDING AND PREVENTION OF POST-OPERATIVE COMPLICATIONS THROUGH STRUCTURED EDUCATION AT TAGORE HOSPITAL, JAIPUR

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ABSTRACT

In the realm of surgical care, the prevention of post-operative complications remains a critical concern, prompting the necessity for patient education. This study delves into the assessment of a structured teaching program's effectiveness in augmenting the knowledge of preoperative patients regarding the prevention of post-operative complications. Method: In this investigation, 60 preoperative patients undergoing diverse surgical procedures were enrolled in a pre-experimental design study. A structured teaching program was implemented and evaluated using questionnaires designed to measure pre- and post-test knowledge levels. Results: The study findings revealed a significant improvement in knowledge levels following the structured teaching program. Pre-test assessments displayed predominant inadequacies in understanding, with 76.7% scoring below 50%. In contrast, post-test outcomes demonstrated substantial enhancements, with 70% achieving knowledge scores exceeding 75%, signifying an adequate understanding of post-operative complications. Notably, aspects such as the meanings, signs, management, and prevention of complications exhibited substantial knowledge enhancement, with mean knowledge scores increasing from 38.7% to 78.9% post-intervention. Conclusion: This study showcases the effectiveness of the structured teaching program in significantly augmenting the understanding of post-operative complications among preoperative patients. The intervention notably led to a remarkable increase in knowledge levels, particularly in areas directly associated with the prevention of complications. The identification of correlations between gender and sources of information with initial knowledge emphasizes the significance of tailored educational strategies for diverse patient demographics.

KEYWORDS: Surgery, Post-operative Complications, Patient Education, Structured Teaching Program, Preoperative Patients, Knowledge Enhancement.

INTRODUCTION

In contemporary healthcare, the prevention of post-operative complications is a critical aspect of patient care. Post-operative complications pose a significant burden, impacting patient recovery, hospital resources, and healthcare costs.[1] Studies indicate that these complications affect a substantial proportion of surgical patients, with prevalence rates varying depending on the type of surgery, patient health status, and post-operative care.[2] Research findings from various medical institutions worldwide suggest that post-operative complications affect approximately 32% of patients undergoing surgical procedures.[3] These complications encompass a wide spectrum, ranging from minor issues like wound infections to more severe complications such as deep vein thrombosis, pulmonary embolism, and post-operative pneumonia.[4]

Studies reveal that such complications contribute to longer hospitalizations, with some estimates suggesting a 30% increase in the length of hospital stay among patients experiencing post-operative issues.[5] The financial ramifications are noteworthy as well. Healthcare costs associated with managing post-operative complications add a substantial economic burden. Recognizing the potential adverse effects of post-operative complications, healthcare providers have increasingly focused on preventative strategies.[6] Patient education has emerged as a critical approach to mitigate these complications. Adequate understanding and

awareness of potential risks empower patients to play an active role in their recovery process.[7] In the context of Tagore Hospital & Research Institute in Jaipur, it is crucial to understand the local prevalence and impact of post-operative complications. As a part of a broader trend, it is assumed that a considerable number of patients undergoing various surgical procedures at this institution may encounter post-operative issues, potentially affecting their recovery trajectory and healthcare resources.

In response to this prevailing challenge, the current study is designed to assess the impact of a structured teaching program on preoperative patients' knowledge about preventing post-operative complications at Tagore Hospital. The research aims to evaluate the effectiveness of this educational intervention in improving patients' understanding and preparedness to address potential post-operative challenges, considering the specific context and needs of the patient population within the institute. By providing local insights into the prevalence and potential impact of post-operative complications, this study seeks to address a critical gap in understanding the local scenario and determine the effectiveness of targeted patient education in mitigating such risks. Ultimately, this research aims to contribute significantly to the enhancement of patient outcomes and healthcare

efficiency at Tagore Hospital & Research Institute in Jaipur.

METHODOLOGY
Utilizing a pre-experimental one-group pretest-posttest design, this study assessed the efficacy of a structured teaching program aimed at enhancing preoperative patients' knowledge about preventing post-operative complications at Tagore Hospital & Research Institute, Jaipur. Sixty preoperative patients undergoing various surgeries under general anesthesia were selected via a convenient sampling technique based on inclusion criteria. The study employed a two-part questionnaire to collect socio-demographic data and assess knowledge regarding post-operative complications. Expert validation ensured the questionnaires' content validity, while reliability was established through the split-half technique and Pearson's correlation, supported by a pilot study. Following institutional permissions and informed consent, data collection began, involving pre- and post-test knowledge assessments before and after a structured teaching program, respectively. Descriptive and inferential statistics were planned for data analysis, ensuring a comprehensive evaluation of the program's impact on preoperative patients' understanding and prevention of post-operative complications.

RESULT
Table 1: Description of the Socio Demographic Variables N=60.

Characteristics	Category	Respondents	
		Number	Percent
Age group (years)	<45	20	33.3
	46-50	22	36.7
	>50	18	30.0
Gender	Male	26	43.3
	Female	34	56.7
Educational status	Primary	14	23.3
	Secondary	18	30.0
	Higher secondary	28	46.7
Occupational status	Government	8	13.3
	Private	12	20.0
	Business/ self employed	12	20.0
	Agriculture	28	46.7
Marital status	Married	56	93.3
	Widow/ widower	4	6.7
Health disorders	Hypertension	14	23.3
	Diabetes	8	13.3
	No disorder	38	63.4
Source of knowledge	Yes	24	40.0
	No	36	60.0
Previous surgery	Yes	6	10.0
	No	54	90.0
Type of Family	Nuclear	28	46.7
	Joint	20	33.3
	Extended	12	20.0
Religion	Hindu	30	50.0
	Muslim	14	23.3
	Christian	16	26.7

Family income/month	<Rs.10,000	32	53.4
	Rs.10,001-15,000	14	23.3
	>Rs.15,000	14	23.3
Family history of recent surgery	Yes	4	6.7
	No	56	93.3
Surgery undergoing	Herniorrhaphy	8	13.3
	Jejunostomy	6	10.0
	Cholecystectomy	2	3.3
	Hysterectomy	10	16.7
	Splenectomy	2	3.3
	Mastectomy	10	16.7
	Gastrojejunostomy	8	13.3
	Others	14	23.3
Source of information	Radio/television	26	43.3
	Print media	18	30.0
	Family members/Relatives	6	10.0
	Friends/Neighbors	4	6.7
	Health personal	6	10.0

Table 1 presents a comprehensive breakdown of socio-demographic characteristics among the 60 preoperative patients. The distribution includes age groups, with 33.3% under 45 years, 36.7% between 46-50 years, and 30% above 50 years. The gender distribution indicates 43.3% male and 56.7% female participants. Educational status delineates 23.3% with primary education, 30% secondary, and 46.7% higher secondary. Additionally, the table highlights occupational diversity, marital status, health disorders, sources of knowledge, previous surgery history, and various other demographic categories.

Table 2: Percentage distributions based on their pre & post-test knowledge score.

Knowledge level	Category	Classification of respondents			
		Pre-test		Post-test	
		Number	Percents	Number	Percents
Inadequate	<50% score	46	76.7	0	0
Moderate	51-75% score	14	23.3	18	30
Adequate	>75% score	0	0	42	70

Table 2 illustrates the knowledge level classification before and after the structured teaching program. Pre-test scores indicate 76.7% had inadequate knowledge (<50% score), while post-test scores show a significant improvement, with 70% achieving adequate knowledge (>75% score) and 30% demonstrating moderate knowledge (51-75% score).

Table 3: Overall pre-test and post-test mean knowledge on prevention of post-operative complications.

Aspects	Max. score	Respondents knowledge		Paired 't' test
		Mean	SD	
Pre-test	34	13.17	10.2	17.07*
Post-test	34	26.83	7.2	
Enhancement	34	13.67	12.9	

*Significant at 5% level, t (0.05, 29df) = 2.045

Table 3 displays the mean and standard deviation of respondents' knowledge on post-operative complication prevention before and after the structured teaching program. It reflects a substantial increase in knowledge scores from a mean of 13.17 in the pre-test to 26.83 in the post-test, with a statistically significant enhancement (p<0.05) confirmed by the paired 't' test.

Table 4: Aspect wise means pre-test and post-test knowledge on prevention of post-operative complications.

No.	Knowledge aspects	Respondent's knowledge (%)						Paired 't' test
		Pre-test		Post test		Enhancement		
		Mean	SD	Mean	SD	Mean	SD	
1	Meaning	43.0	14.9	84.3	11.4	41.3	20.8	10.88*
2	Sign & symptoms	30.4	17.6	68.8	12.6	38.3	20.7	10.13*

3	Management	40.7	23.8	82.7	16.4	42.0	27.5	8.37*
4	Prevention	40.0	10.6	79.7	14.1	39.7	16.6	13.10*
Combined		38.7	10.2	78.9	7.2	40.2	12.9	17.07*

*Significant at %% level,   t (0.05, 29 df) = 2.045

Table 4 outlines the aspect-wise breakdown of respondents' knowledge regarding meanings, signs & symptoms, management, and prevention of post-operative complications. It demonstrates a remarkable increase in knowledge across all aspects, as highlighted by the substantial enhancements in mean scores for each category, supported by statistically significant findings (p<0.05) from the paired 't' test.

Table 5: Association between pre-test knowledge and demographic variables level on prevention of post-operative complications n=60.

Demographic variables	$\chi 2$ value	P value
Age group (years)	0.16 NS	>0.05
Gender	6.98*	<0.05
Educational status	0.14 NS	>0.05
Occupational status	2.38 NS	>0.05
Health disorder	2.86 NS	>0.05
Source of knowledge	3.86*	<0.05
Previous surgery	0.19 NS	>0.05
Type of family	0.65 NS	>0.05
Religion	1.68 NS	>0.05
Family income	0.40 NS	>0.05
Source of information on aspect	4.68 NS	>0.05

*Significant at 5% level

Table 5 investigates the association between pre-test knowledge levels and various demographic variables. It reveals statistically significant associations in gender and source of knowledge categories (p<0.05), signifying a potential impact of these variables on the preoperative patients' initial knowledge level regarding post-operative complication prevention. Other demographic factors show no significant association.

DISCUSSION
The study demonstrated a clear improvement in preoperative patients' knowledge regarding the prevention of post-operative complications following the implementation of the structured teaching program. The significant enhancement in knowledge scores from pre-test to post-test indicates the program's effectiveness in increasing awareness about various aspects of post-operative complications, including their meanings, signs, management, and prevention. This suggests that tailored educational interventions play a pivotal role in equipping patients with essential knowledge, empowering them to actively engage in their post-operative care and potentially reducing the incidence and severity of complications.

The findings indicating a significant association between gender and the source of knowledge with pre-test knowledge levels suggest potential demographic influences on initial understanding. This aligns with study conducted by **Alle et al. (2021)** identify a significant association between gender and knowledge levels, suggesting a consensus on the influence of gender on participants' understanding.[8] The identification of these associations could guide future strategies in designing educational interventions that specifically cater to different demographic needs. Understanding the influence of gender and the preferred sources of knowledge on initial knowledge levels could aid in tailoring educational content to better resonate with patients, thereby potentially improving the effectiveness of such programs.

However, the study is not without limitations. The relatively small sample size and single-center approach might limit the generalizability of the findings. Additionally, while the structured teaching program showed significant improvement in knowledge scores, its long-term retention and practical impact on patient outcomes remain unclear. Another study conducted by **Klaiber et al. (2018)** suggests that a preoperative patient education seminar could be advantageous for both patients and nursing staff, especially for those scheduled for complex abdominal surgery.[9] Further research should aim to explore the sustainability of knowledge gains over time and their direct correlation with post-operative outcomes.

Moving forward, larger-scale, multi-center studies would be valuable in validating and extending these findings. Longitudinal assessments to explore the retention of knowledge over an extended period and its practical implications on patient outcomes could provide deeper insights. Moreover, exploring tailored educational strategies for different demographic groups could enhance the efficacy of educational interventions and

further contribute to improved patient outcomes in post-operative care.

In conclusion, while the structured teaching program showcased considerable promise in enhancing preoperative patients' knowledge about post-operative complications, further research endeavors are necessary to consolidate these findings and develop targeted, effective educational interventions.