"A Study to Assess the Effectiveness of Informational Booklet on Robotic Surgery In Terms Of Knowledge And Attitude Among 2nd Year B. Sc. Nursing Students Of Selected B.Sc. Nursing Colleges Of Gandhinagar District, Gujarat State."

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Abstract:
Robotic surgery is the use of robots in performing surgery. The major advantages of robotic surgery are precision and miniaturization. There are some advantages which includes normal manipulation and three-dimensional magnification. The aim of the study was to assess the knowledge regarding Robotic surgery among 2nd year B.Sc. Nursing students of selected B.Sc. nursing colleges before and after administration of informational Booklet. The Pre experimental research approach and one group pre test post test design was used and 60 samples were selected by probability sampling technique. Overall results of the present study proved that mean post-test Knowledge and Attitude score were significantly higher than mean Pre-test Knowledge and Attitude scores. The calculated 't' value was greater than the tabulated 't'. It revealed that an informational booklet was effective in terms of knowledge and Attitude among the samples.
Key words: *Effectiveness, Informational Booklet, Robotic Surgery, 2nd Year B. Sc. Nursing Students*

I. INTRODUCTION

"A robot is not a machine…. it is an information & working system with arms"

Robotic surgery is surgical procedures which using robotic systems. Robotically-assisted surgery was developed to try to overcome the limitations of pre-existing minimally-invasive surgical procedures and to enhance the capabilities of surgeons performing open surgery.

Technological innovation has led to great advances in surgical practice and the increasing usage of robotic surgery that is 1.5 million robotic surgeries have been performed throughout the world over the past decade. In the few years the number of robotic assisted procedures nearly tripled worldwide from 80,000 to over 200,000.

Robotic surgery presents advantages similar to those of minimally invasive surgery. With minimally invasive surgery, the surgeon performs operations using small 'key-hole' incisions, through which cameras and laparoscopic instruments are passed. It has numerous benefits for patients, including less postoperative pain, shorter hospitalization, quicker return to normal function, and improved cosmetic effect. However, laparoscopic surgery can be technically challenging to perform, as a result of the 2-dimensional operative image & instruments that have limited freedom of movement and require awkward & non-intuitive handling. Therefore, uptake of laparoscopic surgery has been slow.

A common myth about robotic surgery is that the surgeon is performing the procedure from a different room. The procedure is programmed. In reality, the surgeon directly controls each movement of the robotic arms and instruments in real time.

OBJECTIVES OF THE STUDY

1.	To assess the knowledge regarding Robotic surgery among 2nd year B.Sc. Nursing students of selected B.Sc. nursing colleges before and after administration of informational Booklet.
2.	To assess the attitude regarding Robotic surgery among 2nd year B.Sc. Nursing students of selected B.Sc. nursing colleges before and after administration of informational Booklet.
3.	To find the association between pre-test knowledge score with selected demographic variables.

II.   METHODOLOGY:

Research approach: Quantitative (Pre – Experimental) Research approach.
Research Design: Pre - experimental Approach (One group pre-test-post-test design).
Research Setting: Selected B. Sc. Nursing Colleges of Gandhinagar District.

Sr. No.	District	Name of colleges
1.	Dahegam	Dr. B R Ambedkar college of Nursing
2.	Kalol	Ananya school of nursing kirc campus
		Sahajanand college of nursing
		Sharda nursing college
		Shree Swaminarayan college of nursing
3.	Mansa	Shantiniketan nursing college
4.	Gandhinagar	Apollo institute of nursing
		Chanchalben Mafatlal patel college of nursing
		Chaudhari institute of nursing

Population: In the present study male and female students of undergraduate course in selected B. Sc. Nursing Colleges of Gandhinagar District, Gujarat state.

Sample and Sample Size: The study includes 60 2nd years B. Sc. Nursing students enrolled in the selected colleges at Gandhinagar District, Gujarat State by multi stage sampling method.

Sample Technique: Samples were taken from each college 15 samples by systematic random sampling in even number.

Sample Criteria:
1.   Talukas and colleges are selected by simple random sampling.
2.   College Students were selected through stratified and simple random sampling method.
3.   College Students who were studying in 2nd year B. Sc. Nursing in selected colleges.
4.   College Students who were available during the study period and taken by systemic random sampling.
5.   College Students who were willing to participate in the research study.

Description of Tool:

Section I: Demographic variables

Section II: Knowledge regarding robotic surgery. Total items were 30. Each items carried one mark. Maximum score of the questionnaire is 30.

Section III: Five points Likert's attitude rating scale which included total items 14. Investigator used five points rating scale in positive items which was scored as – strongly agree (5), agree (4), uncertain (3), disagree (2) and strongly disagree (1). Negative statements scored as strongly agree (1), agree (2), uncertain (3), disagree (4) and strongly disagree (5).

III.   RESULTS:

Section – I: Frequency and Percentage of demographic variables

(N = 60)

Sr. No.	Demographic variables	Frequency	Percentage
1.	**Age:**		
	17-19	44	73.33%
	20-22	9	15%
	23 &above	7	11.66%
2.	**Gender:**		
	Male	0	0%
	Female	60	100%
3.	**Heard about Robotic Surgery:**		
	Yes	28	46.66%
	No	32	53.33%
4.	**How much know:**		
	A lot	0	0%
	Very little	31	51.66%
	Almost nothing	29	48.33%
5.	**Sources of information:**		
	Friends	13	21.66%
	Relatives	1	1.66%
	Mass media	46	76.66%
	Parents	0	0%

6.	Seen robot: Yes No	2 58	3.33% 96.66%
7.	Seen surgery: Yes No	7 53	11.66% 88.33%
8.	Ever attended: Yes No	8 52	13.33% 86.66%

The data presented in Table shows that the majority of samples 44 (73.33%) were belong to 17-19 year, 9 (15%) were 20-22 year and 7 (11.66%) were 23 & above year of age group. Out of 60 samples 0 (0%) were male and 60 (100%) were female. Majority of samples 28 (46.66%) were heard about robotic surgery, 32 (53.33%) were not heard about robotic surgery. 0 (0%) were aware a lot, 31 (51.66%) were know about very little and 29 (48.33%) were almost nothing know about robotic surgery. 13 (21.66%) had information from friends, 1 (1.66%) had information from relatives, 46 (76.66%) from mass media and 0 (0%) from parents. 2 (3.33%) were seen surgical robot and 58 (96.66%) were seen surgical robot. 7 (11.66%) were seen and 53 (88.33%) were not seen robotic surgery. 52 (86.66%) never attended any seminar and only 8 (13.33%) attended seminar regarding robotic surgery.

Section II: Analysis and interpretation of area wise knowledge score

(N = 60)

Area of content	Max score	Pre-Test Knowledge score			Post-Test Knowledge score			Gain %	Mean Difference	T value
		Mean score	%	SD	Mean Score	%	SD			
Robotic surgery	10	4.98	49.83 %	2.07	7.5	75 %	1.56	25.17 %	2.52	10.35
Clinical application	2	1.38	69.17%	0.58	1.42	70.83 %	0.69	1.7 %	0.04	0.33
Types of robotic surgery	18	7	70 %	2.31	11.12	61.76 %	2.84	8.24 %	4.12	9.93
	30			4.9			4.9			

Table shows that out of 10, Pre test mean score was 4.98 and Post test mean score was 7.5 for robotic surgery. Out of 2, Pre test mean score was 1.38 and Post test mean score was 1.42 in clinical application. Out of 18, Pre test mean score was 7 and mean post test score was 11.12 in Types of robotic surgery. It was concluded that there was increase in the mean post test knowledge score than mean pre test knowledge score after giving informational booklet on robotic surgery.

Section III: Analysis and Interpretation of pre-test and post-test Knowledge scores

(N=60)

Knowledge test	Mean score	Mean difference	SD	Calculated 't' value	Table 't' value	Df
Pre test	13.37	6.66	3.59	12.26	2.00	59
Post test	20.03		2.62			

*significance at the level of 0.05

Table shows mean Pre-test score was 13.37 and the mean post test score was 20.03 with the mean difference of 6.66. The table also shows that the Standard deviation of Pre-test Knowledge score was 3.59 and Standard deviation of post test knowledge score was 2.62. The calculated't' is 12.26 and the tabulated't' is 2.00 at 0.05 level of significance.

Section IV: Categorization of knowledge before and after administration of informational booklet

(N=60)

Score of knowledge	Pre test		Post test	
	Frequency	Percentage %	Frequency	Percentage %
Poor (<50%)	41	68.33%	3	5%
Average (50%-75%)	19	31.67%	52	86.67%

Good (>75%)	00	00%	5	8.33%
Total	60	100%	60	100%

Table shows that, In Pre test, 41 respondents had poor, 19 had average and 00 had good knowledge. While in posttest 3 had poor, 52 had average and 5 had good knowledge. It shows that after distribution of informational booklet there was significant increase in students in good category and decrease in students in poor category.

ATTITUDE OF SAMPLE
Section V: Analysis and interpretation of pre-test and post-test Attitude scores

(N=60)

Attitude test	Mean score	Mean difference	SD	Calculated 't' value	Table 't' value	Df
Pre test	49.8	6.18	6.87	7.11	2.00	59
Post test	55.98		3.77			

*significance at the level of 0.05

Table shows mean Pre test score was 49.8 and post test score was 55.98. It reveals that mean post-test attitude score was significantly higher than mean Pre-test attitude scores. It revealed that the informational booklet was effective in terms of attitude among the samples.

Categorization of attitude before and after administration of informational booklet

(N=60)

LEVEL OF ATTITUDE	PRE-TEST		POST TEST	
	Frequency	Percentage%	Frequency	Percentage%
Favorable (45 to 80	41	68.33%	60	100%
Unfavorable (<45)	19	31.67%	0	0%
Total	60	100%	60	100%

Table shows that in pre test 68.33 % of respondents had favorable attitude and 31.67 % had unfavorable attitude while during post test 60% of respondents had favorable attitude and 0% respondents had unfavorable attitude.

ANALYSIS AND INTERPRETATION OF DATA RELATED TO ASSOCIATION OF PRE TEST KNOWLEDGE SCORE OF SAMPLES WITH DEMOGRAPHIC VARIABLES.

Table: 4.7 Association of pre test Knowledge scores of Samples with the Demographic Variables

(N=60)

Sr. No.	Demographic variables	Frequency	Higher	Lower	Chi square		DF	Result
					Calculated	Table		
1	**Age** 17-19 20-22 23 & above	44 9 7	15 4 0	29 10 2	1.11	5.99	2	Not significant
2	**Gender** Male Female	0 60	0 19	0 41	0	3.84	1	Not significant
3	**Heard about robotic surgery** Yes No	28 32	11 8	17 24	1.41	3.84	1	Not significant
4	**How much know** A lot Very little Almost nothing	0 31 29	0 11 8	0 20 21	0.43	5.99	2	Not significant
5	**Sources of information** Friends Relatives Mass media Parents	13 1 46 0	2 0 17 0	11 1 29 0	2.65	7.82	3	Not significant
6	**Seen surgical robot** Yes							

	No	2 58	1 18	1 40	0.32	3.84	1	Not significant
7	**Seen robotic surgery** Yes No	7 53	3 16	4 37	0.46	3.84	1	Not significant
8	**Ever attended seminar** Yes No	8 52	1 18	6 35	1.11	3.84	1	Not significant

The table indicates that there is no significant association between knowledge of robotic surgery and demographic variables as the calculated values of variables are than the critical value at $p < 0.05$ level of significance.

INTERPRETATION AND CONCLUSION:

The overall findings of the study clearly showed that the informational booklet was effective in improving the knowledge and attitude of samples regarding robotic surgery among 2nd year B. Sc. Nursing students. When association of pre test knowledge score is done with demographic variables it shows that no significant association is there so null hypothesis H_{03} can be accepted and research hypothesis H_3 can be rejected.

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