IOSR Journal of Nursing and Health Science (IOSR-JNHS)
e-ISSN: 2320–1959.p- ISSN: 2320–1940 Volume 11, Issue 2 Ser. III (Mar. – Apr. 2022), PP 38-43
www.iosrjournals.org

Effectiveness of patient and family education on post-operative wound care and lifestyle modifications among the post-surgery patients at the selected tertiary care hospital setting

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Abstract: *The purpose of the study was to explore surgical patients' experience of discharge planning and home care in the Tertiary care hospital. Early post-operative recovery depends on educating patients on self-care, wound care, and providing clear information regarding lifestyle modification. This study aimed to assess the knowledge regarding post-operative wound care and lifestyle modifications among post-surgery patients and a significant reduction in surgical site infection cases. [1] The methodology used was pre-test and post-test research design. The sample selected was surgical patients of all age groups. The pre-test was taken, structured teaching was given, and a post-test was taken, which showed a significant increase in the knowledge of the sample regarding post-operative wound care. Pre-test means 4.48 and post-test 8.4 after administering Patient and family education.*

Key Words: *Post-operative wound, Patient and family, wound care, surgical site infection*

Date of Submission: 15-03-2022 Date of Acceptance: 31-03-2022

I. Introduction

"An ounce of prevention is worth a pound of cure" by Benjamin Franklin

Surgery that involves a cut (incision) in the skin can lead to a wound infection after surgery. The global estimates of SSI have varied from 0.5% to 15%, studies in India have consistently shown higher rates ranging from 23% to 38%. The incidence of SSI may be influenced by factors such as pre-operative care, the theatre environment, post-operative care, and the type of surgery. The studies show that in India, total 1, 88, 82,734 surgeries were carried out during 2019-20 in the public health facilities. Of the 48, 51,788 and 1, 40, 30,946 major and minor surgeries. Among operated surgeries, 23,286 people had experience with surgical site infections during the reference period at a national level. [2]

Post-operative wound healing depends on educating patients on self-care, wound care, and providing clear information to patients during treatment and at the time of discharge. The results of this study indicate that to ensure proper wound care, smoking and alcohol cessation, diet modification, glycemic control, appropriate use of discharge medications, and follow-up in post-discharged patients through effective training during a hospital stay and at the time of discharge. The objectives of this study were to assess the knowledge regarding post-operative wound care & lifestyle modification among the selected sample, to administer a structured teaching program, and to assess the effectiveness and impact of education on post-operative patients' results in surgical site infection. The hypothesis was Structured Teaching Programme will increase the knowledge level of a post-operative patient regarding wound care and lifestyle modifications.

II. Material And Method

The study was conducted from January 2022 – to February 2022. A pre-experimental research approach with pre-test and post-test research design was used to assess the knowledge regarding post-operative wound care and lifestyle modifications among the post-surgery patients of all the age groups at Apollo Hospitals Nashik. Permission from the Medical superintendent at Apollo Hospitals Nashik and ethical clearance from the Organizational ethical committee were taken before starting the study. Total 25 samples were taken (Post-operative Cardiac cases – 7, Post-operative Abdomen -4, Post-operative Head & Spine -3, Post-operative Limbs -9, Post-operative Other -2). A convenient sampling technique was used for data collection. The inclusion criteria for sample collection is "Patients who have undergone surgery". The subjects were given a structured questionnaire form to fill and give the responses. Before the questionnaire was given to the participants, consent was taken, aims and objectives were explained to them. The structured questionnaire to assess the knowledge

regarding post-operative wound care and lifestyle modification comprised of two sections. Section 1 consists of demography formality including 3 items to collect information on the subject's demography characteristics (age, gender, part of surgery). Section 2 consists of a structured knowledge questionnaire including 10 multiple choice questions to assess the knowledge regarding post-operative wound care and lifestyle modifications. The maximum score was 1 for each correct answer and no score was awarded for an incorrect answer. The pre-test was taken and then structured teaching was given with the help of a lesson plan and by using an educational template and then post-test was taken (Annexure 1)

The knowledge level grading criteria were considered as follows:

Score Knowledge level	**Score Knowledge level**
<5	Poor
5-6	Average
>7	Good

III. Result

Descriptive (Frequency &percentage) and inferential statistics (t-test) were used to assess the effectiveness of patient and family education on post-operative wound care and lifestyle modifications among the post-surgery patients at a selected tertiary care hospital setting.

Table 1 Study sample distribution by socio-demographic characteristics (n=25)

Variable	Option	Frequency	Percentage
Gender	Male	21	84
	Female	4	16
Age group	<18 years	2	8
	18-30 years	6	24
	30-60years	15	60
	>60years	2	8
Part of Surgery	Cardiac	7	28
	Abdomen	4	16
	Head & Spine	3	12
	Limbs	9	36
	Other	2	8

Table 1 depicts subject distribution by socio-demographic characteristics, in this subject group (8.0%) of them at the (<18) years age group, (24%) of them at the (18-30 years age group), (60%) of them at the (30-60) years age group, (8%) of them at the (>60) years age group.

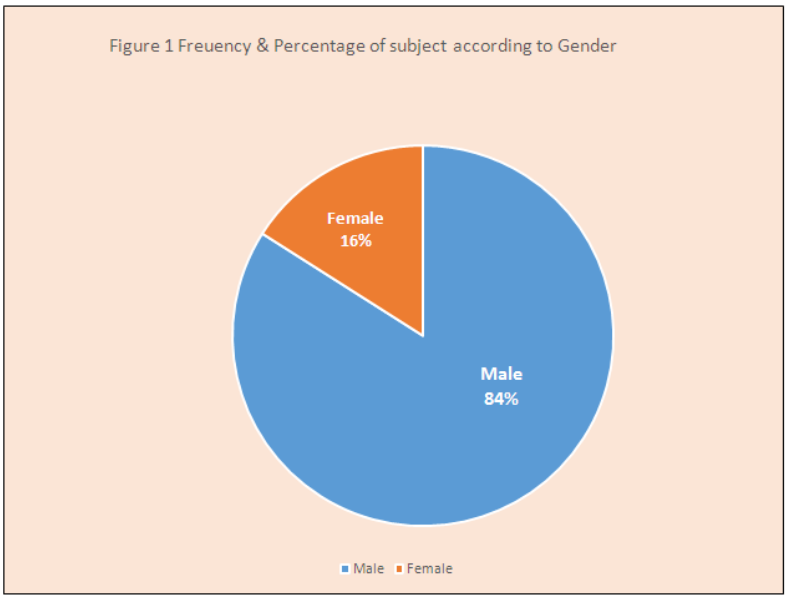


Figure 1 depicts that the highest percent (84%) of the study samples were male and the lowest percent (16%) of the study samples were female.

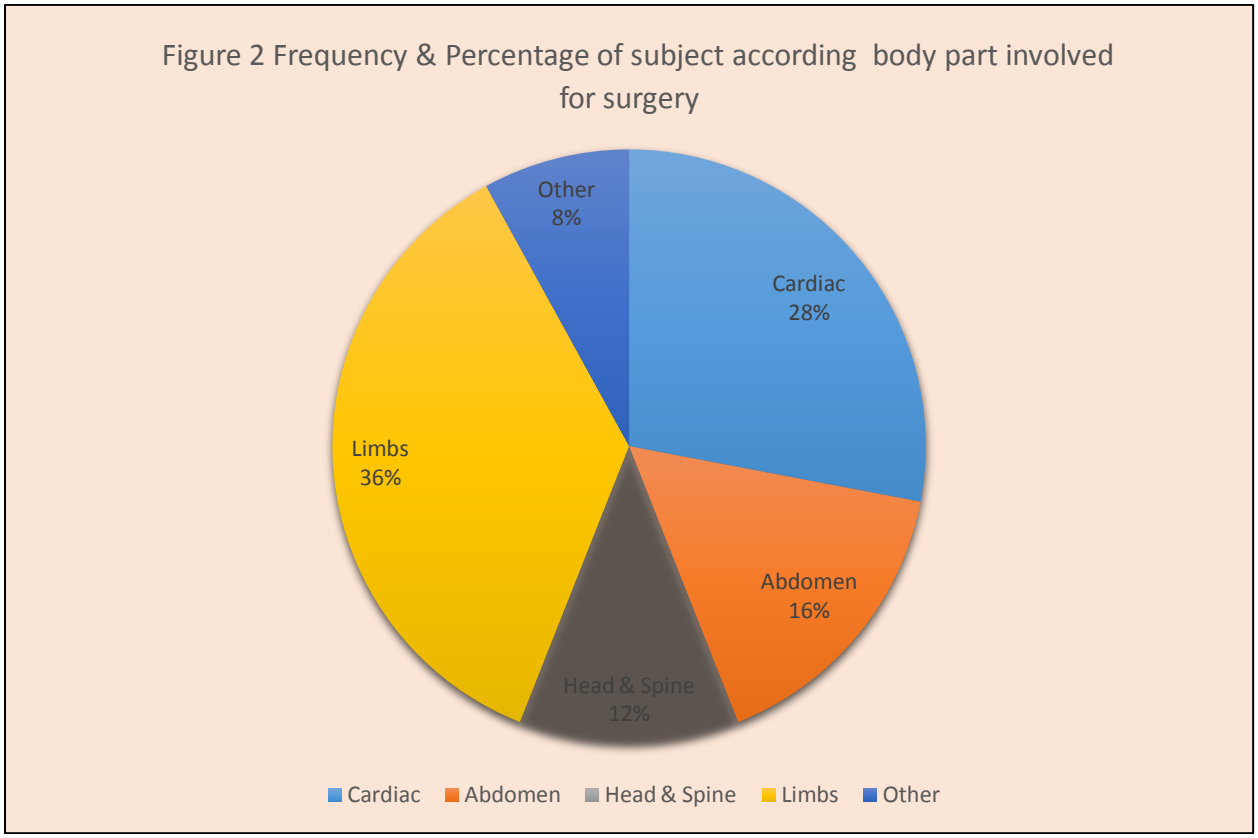


Figure 2 depicts the frequency and percentage of the subject's body parts involved in the surgery.

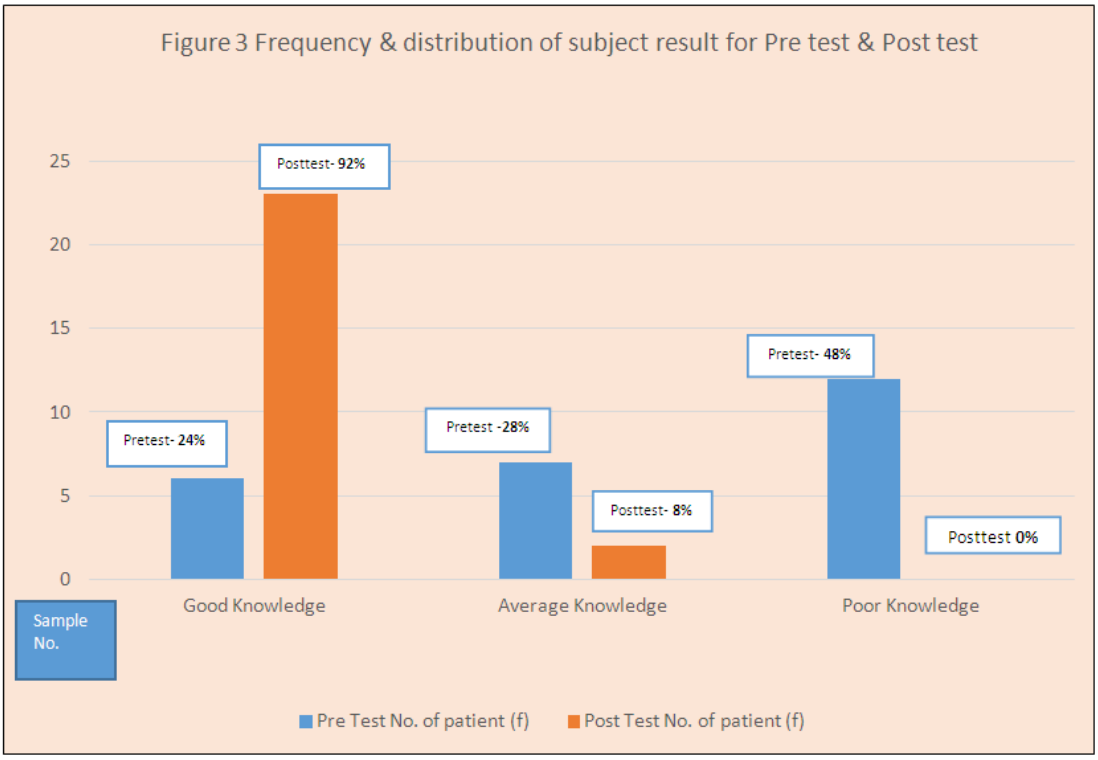


Figure 3 depicts the frequency and percentage distribution of the pre-test and post-test knowledge scores of the subjects. In this figure (48%) subjects had poor knowledge, (28%) subjects had average knowledge and (24%) subjects had good knowledge in the pre-test regarding knowledge on post-operative wound care and lifestyle modification, and most (92%) subjects had good knowledge, some (8%) subjects had average knowledge and no subjects had poor knowledge in post-test regarding knowledge on post-operative wound care & lifestyle modification.

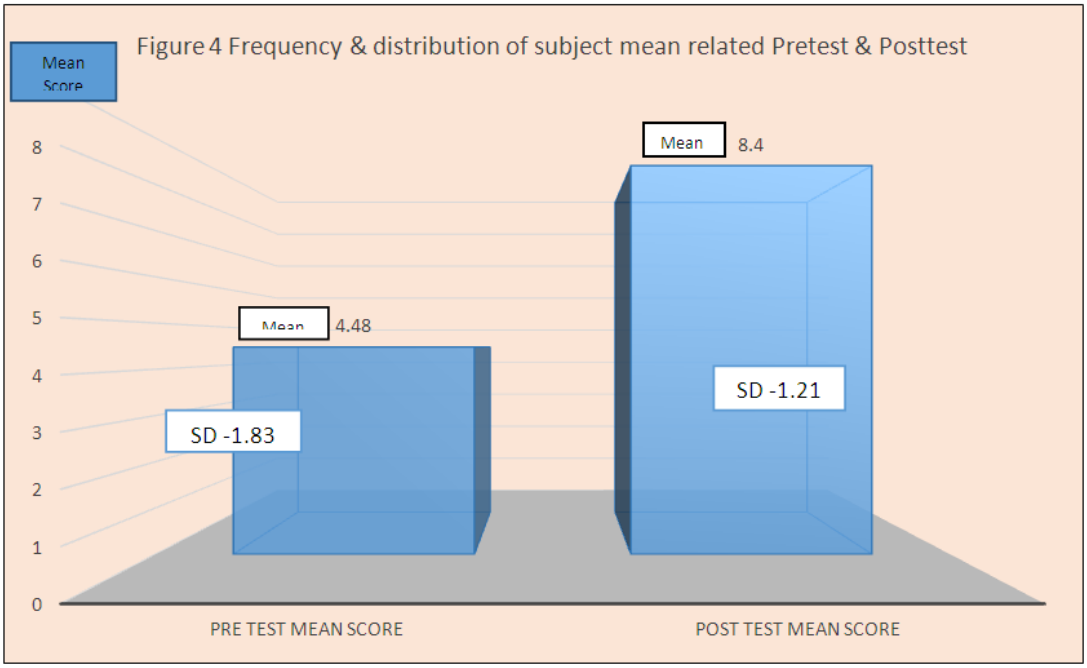


Figure 4 depicts the mean, standard deviation, and paired t-test scores of structured knowledge questionnaires. The mean score & standard deviation of the post-test (7.92, SD = 1.21) was significantly higher than the mean score & standard deviation (4.48, SD = 1.83). As per the paired t-test result of pre-test and post-test is (9.0654E09) (Table 2). So the research hypothesis - (H2) 'There will be a significant improvement in knowledge and self-care of post-operative patients' is accepted.

Table 2 subject knowledge variable Paired t-Test

Subject No.	Subject Pretest score (A)	Subject Post-test score (B)
Subject - 1	6	7
Subject - 2	7	10
Subject - 3	4	10
Subject - 4	3	10
Subject - 5	3	8
Subject - 6	3	7
Subject - 7	8	8
Subject - 8	4	6
Subject - 9	3	7
Subject - 10	5	9
Subject - 11	5	10
Subject - 12	3	8
Subject - 13	4	9
Subject - 14	5	7
Subject - 15	4	9
Subject - 16	7	10
Subject - 17	7	7
Subject - 18	5	6
Subject - 19	5	9
Subject - 20	3	9
Subject - 21	6	9
Subject - 22	7	8

Subject - 23	3	9
Subject - 24	8	9
Subject - 25	3	9
Mean	4.84	8.4
Pair t-test value		9.65426E-09

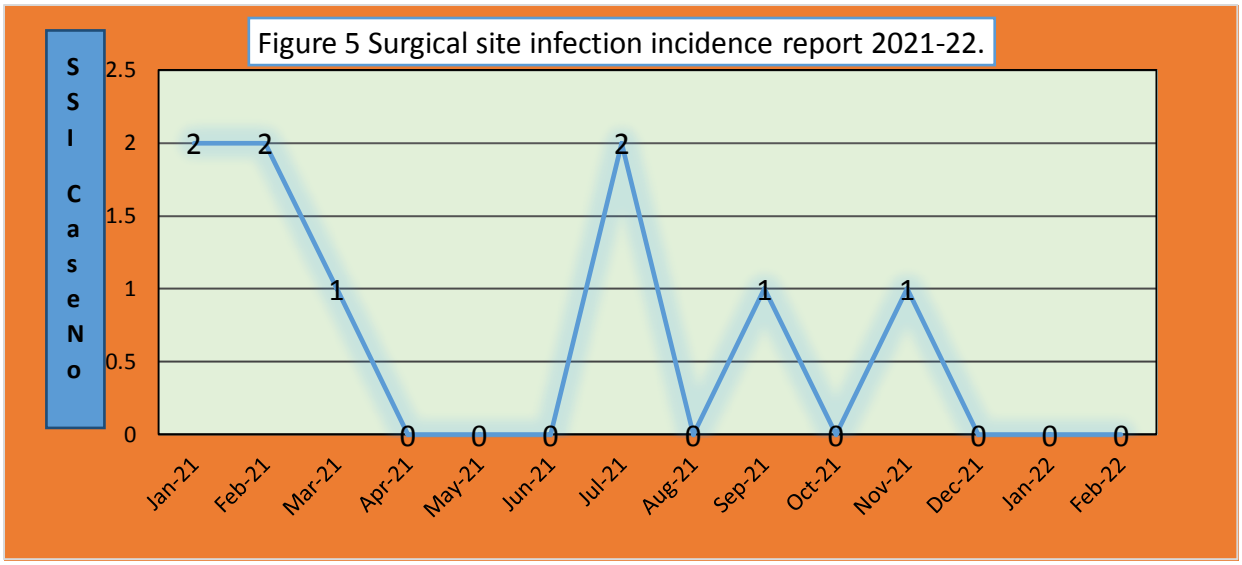
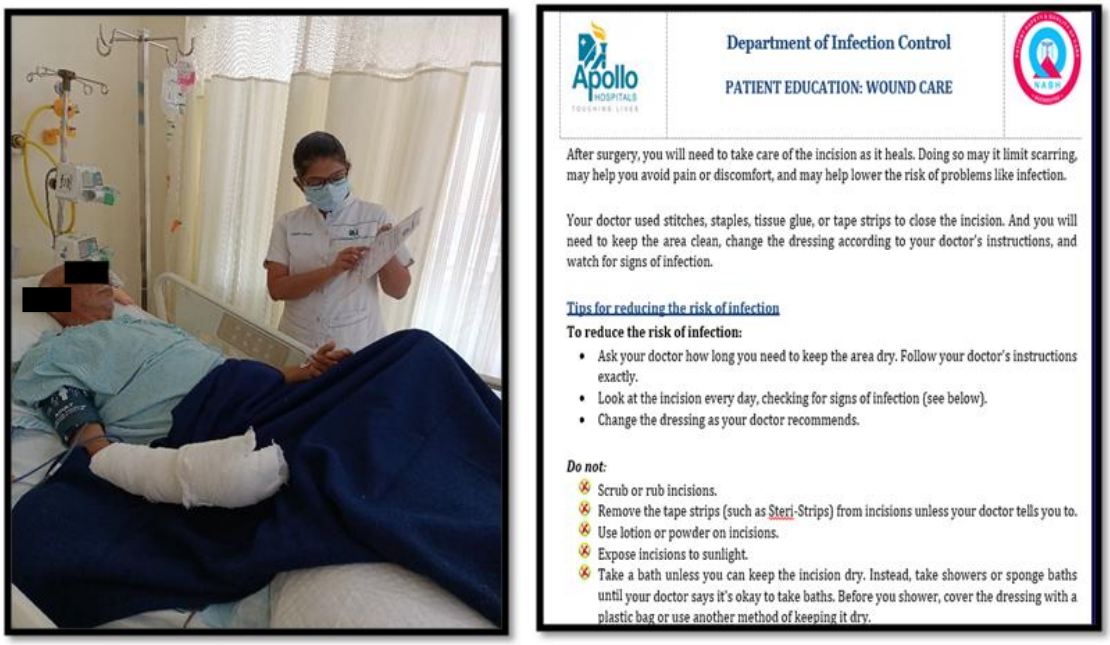


Figure 5 depicts surgical site infection incidence significantly decreased in selected subjects for Jan & Feb 2022 as compared to 2021. So the research hypothesis (H1) 'there will be a significant reduction surgical site infection' is accepted and the null hypothesis (H0) 'There is no significant reduction in post-operative wound care and reduction of surgical site infection' is rejected.



(Annexure 1 Nurse giving structured teaching program to the post-operative patient)

IV. Discussion And Conclusion

The present study findings were revealed in terms of the objectives for the study. Data shows that (48%) subjects had poor knowledge, (28%) subjects had average knowledge and (24%) subjects had good knowledge in the pre-test regarding post-operative wound care and lifestyle modification, and most (92%)

subjects had good knowledge, some (8%) subjects had average knowledge and no subject had poor knowledge in the post-test regarding knowledge on post-operative wound care & lifestyle modification. The calculated average result of pretest and post-test is (9.0654E09) as per paired –t-test. The present study findings reveal that knowledge of subjects increased after administering structured teaching programs on post-operative wound care and lifestyle modification, this finding was in agreement with the findings of the study conducted by Carol Ott, MD, FRCPC**. Regarding '**A Pre-test/ Post-test/ Follow-up Test Teaching Tool' Baycrest Hospital Foot and Wound Clinic. All 20 learners enrolled in the study filled out both the pre-and post-test. The median score of the pre-test was 47.5 and increased to 63.5 for the post-test. The finding of the study demonstrated there is a significant increase in knowledge level.[4] Thus, it was concluded that a planned teaching program on wound care was found effective as a teaching strategy and associated in this study for knowledge improvisation of subject.

Another study that supports the findings of the current study was conducted by Sandra Tully, RN, BScN, MAEd, ACNP, GNC(C); Claudia Ganson, 'A Study to Assess the Effectiveness of Planned Teaching Programme on Knowledge Regarding Implementing a Wound Care Resource Nurse Program'. Results from the pre-and post-true and false tests from the first group of participants reflect a class average knowledge improvement of skin breakdown and management of Stage I and Stage II pressure ulcers ranging from 10.5% to 12.7% after implementation of training. [3]

V. Recommendations

Based on the conclusions, the study recommended the following:-

1. Further study with replication of the current study on a larger sample is recommended to achieve wider utilization of the designed educational program for a better quality of care.
2. Nurses must have ongoing motivation for patient education regarding post-operative wound care

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