



## THE IMPACT OF NURSE-LED INTERVENTIONS ON RHEUMATOID ARTHRITIS SURGICAL PATIENTS' ANXIETY LEVELS: ANALYTICAL STUDY

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### Abstract

Design and conduct a pre-op education session lasting 60 minutes, either in-person or virtually, for patients and family members undergoing general surgical procedures. Use the state anxiety portion of the State-Trait Anxiety Inventory (STAI) to measure the patients' anxiety levels before and after the training session. In today's digital era, there are a plethora of resources and opportunities for acquiring knowledge. The majority of individuals (72%) now look for health-related information online before seeing a doctor. The internet, social media, and word of mouth all contribute to the spread of false and misleading information. Both descriptive and inferential statistics were used to examine the data for this research. The descriptive statistics employed were the mean, the standard deviation, and the percentage. The chi-square test, paired t-test, student t-test, Analysis of Variance (ANOVA) repeated measures test, Bonferroni t-test, and correlation coefficient were used for inferential statistical analysis. Chronic symmetrical and erosive inflammation of the synovial tissues of joints is a hallmark of rheumatoid arthritis, a systemic inflammatory illness. Joint disease may vary in severity over time, but the common conclusion is the continual worsening of joint degeneration, deformity, and disability. The study's findings suggested that patients with rheumatoid arthritis could benefit from a Nurse-Led Intervention consisting of an Arthritis Information course to meet patients' information needs, an Arthritis exercise program to boost patients' physical mobility and clinical outcome, and Arthritis small group counselling to boost patients' self-efficacy.

**Keywords:** Anxiety, Surgical Patients, Operative, Nurse Led Intervention, Tamil Nadu

### INTRODUCTION

Rheumatoid arthritis (RA) is on the rise as the general population ages and people live longer with the condition. Due to this, more people need rheumatology services than ever before. Rheumatologists are heavily relied upon in the standard paradigm of therapy for RA patients. As rheumatologists are in low supply across the globe and funding is inadequate, it is time to reevaluate the status quo. To combat this deficit, healthcare authorities throughout the world have implemented new models that give nurses, therapists, and pharmacists more clinical responsibilities. Nurse-led care (NLC) is one such approach.

Care that is nurse-led has the potential to be more timely, accurate, and helpful to patients. Patients' lives, abilities, and opportunities may all benefit from stricter adherence to the treat-to-target principle, which might increase the proportion of people who attain their treatment goals. It has been suggested that nurse-led care may save a lot of money in the long run.

Nurses in the modern day are tasked with meeting the healthcare demands of an increasingly diverse and elderly patient population. Nurses need to be well-versed in both technology and institutional norms and practices in order to do their jobs effectively. They should also know how to incorporate research into their daily nursing routine. Patients are more likely to open up to medical professionals when they are happy with the treatment they are receiving. Nurses who establish rapport based on trust and respect with their patients are better able to learn about their needs and motivate them to take an active part in their treatment. The following are ways in which nurses might improve their patients' chances of a successful outcome:

- Inquire as to the individual's tastes.
- Listen carefully and seem interested.
- Resolve issues as requested by patients.
- Be kind, sympathetic, and concerned.

## LITERATURE REVIEW

**Joy Justy (2016)** 30 first-time women giving birth at K.G. Hospital in Coimbatore were studied to see whether the Dick Read Method reduced their discomfort and stress during labor. The sample was chosen using an approach that allowed for little effort. The labour pain and stress levels were measured using a numeric pain rating scale and a modified Spielberger state anxiety assessment scale. The 't' value for this research came out to be 5.96. A 5% threshold of significance was reached. The study's author came to the conclusion that the Primigravida moms who used the Dick Read Method reported much less discomfort during labor.

**Debhajini Nayak, Sharada Rastogi, Om Kumari Kathuria (2014)** Thirty first-time moms at RAK Hospital in Delhi participated in quasi-experimental research by Debhajini Nayak, Sharada Rastogi, and Om Kumari Kathuria that evaluated the impact of music therapy on labor pain, anxiety, and perceived pain. The intensity of the pain was measured using a visual analog scale. The findings showed that the average score on the post-test for anxiety was 50.06 (standard deviation = 1.931), the 't' test score was 26 (significant at the 0.05 level), and the average score on the post-test for pain perception was 6.27 (standard deviation = 0.52), with a 't' test score of 14.70 (very significant at the 0.05 level). The study's authors found that listening to music during labor helped women feel less anxious and experience less pain. At the NBMM hospital in Kerala, researchers tested the theory that a circular hip massage might alleviate labor discomfort. This study used a purposive selection method to randomly assign 65 first-stage laboring moms to either an experimental (n=30) or control (n=30) group. Both groups were interviewed, and data was gathered using a visual analog scale. The control group did not get any treatment, whereas the experimental group got a circular hip massage. The 't' test result of 3.27 was statistically significant across all three stages (latent = 0.001, active = 0.002, and transitional = 0.000). In a study of twenty women, circular hip massage was shown to reduce labor pain and boost mood.

**Driscoll Andrea, Grant Maria J, Carroll Diane (2017)** Systematic review and meta-analysis was conducted using a cross-sectional design. Articles published in English between 2006 and 2017 were retrieved from nine different electronic databases. Primary outcomes were those most relevant to nurses and their patients. The researchers set out to conduct a meta-analysis and comprehensive review of the literature on the topic of how the nurse-to-patient ratio influences nurse-sensitive patient outcomes in intensive care units. Only 35 out of 3429 unique articles found were suitable for inclusion. Patients had fewer complications, including death, medication mistakes, ulcers, restraint usage, infections, pneumonia, increased aspirin use, and percutaneous coronary intervention within 90 minutes, when staffing levels were higher. Higher nurse staffing levels were associated with a 14%

reduction in the risk of in-hospital mortality (0.86, 95% confidence range 0.79-0.94), according to a meta-analysis of six studies including 175,755 patients hospitalized to the critical care unit and/or cardiac/cardiothoracic units. However, there was considerable heterogeneity in the meta-analysis ( $I^2=86\%$ ). Researchers concluded that further studies are needed before they can confidently propose an ideal nurse-to-patient ratio for use in these specialty facilities.

**Shang, Jingjing; Stone Patricia and Elaine Larson (2016)** research done in 2015-2016. Medline and the Cumulative Index to Nursing and Allied Health Literature were used to perform a scoping evaluation of the literature published since 1990. Researchers looked for papers in English-language peer-reviewed publications that looked at the correlation between nurse staffing levels and rates of hospital-acquired infections (HAIs). In all, 125 papers or abstracts were located, with 45 meeting the requirements for inclusion. The results of these research were contradictory. Database selection, variable measurement, techniques to connect nurse staffing with HAI data, and dealing with temporality were all highlighted as difficulties in the methodology.

## **RESEARCH METHODOLOGY**

### **Sample Size**

One hundred people will be used in the study; fifty in the test group and fifty in the control group. Both the experimental and control groups' samples will be selected using a non-probabilistic purposive sampling strategy.

### **Inclusion Criteria**

All those who satisfied the following requirements will be considered, regardless of their gender, color, ethnicity, or religion.

- i. All of the participants will be at least 31 years old.
- ii. Individuals had arranged a general surgical surgery at the clinic for treatment of cancer of the digestive tract, gynecological organs, urinary system, or endocrine system.
- iii. All participants had at least intermediate level literacy in Tamil and English.
- iv. Rheumatoid arthritis exercise demonstration and follow-up attendance from interested parties.

### **Exclusion Criteria**

If a potential participant satisfied any of the following conditions, they will be unable to take part in the study:

- i. Patients who were getting surgery for obesity, joint abnormalities, or osteoarthritis will be included in the study, since these conditions need particular pre-operative instruction.
- ii. Because cardiac and neurological patients are not usually admitted to the general surgical unit, these participants will be able to get specialized surgical care.
- iii. Participants who had unscheduled or unexpected surgery will not be eligible because they would not have had time to complete the preoperative class.

### **Data Tools**

Data was analyzed using both descriptive and inferential statistical tests. Mean, standard deviation, and percentage were used as descriptive statistics. The data was analyzed using inferential statistics, including the chi-square test, the paired t-test, the student t-test, the Analysis of Variance (ANOVA) repeated measures test, the Bonferroni t-test, and the correlation coefficient.

## **DATA ANALYSIS**

### **State Anxiety Inventory**

To evaluate changes in nervousness before and after class, a paired t-test was used. Prior to the intervention, the average participant's state anxiety score was 41.85 (SD = 11.64). While the average state anxiety score was 34.85 (SD = 10.08) following the intervention.  $T(19) = 3.75, p < .001$  indicates that anxiety levels dropped considerably following the informative session.

Some clinical categories were merged for analysis because of the small sample size. These included same-day, two-night, and unknown durations of stay, as well as gastrointestinal, urinary, and gynecological operations. The average anxiety score dropped from M = 39.47 (SD = 11.750) to M = 32.07 (SD = 8.66) among patients scheduled for endocrine procedures (n = 15). The average number of anxious thoughts per operation fell from M = 49 (SD = 8.69) to M = 43.2 (SD = 10.18) for the other five procedures. Participants who anticipated a one-night duration of stay (n = 13) saw a reduction in anxiety from a pre-intervention mean of 39 (SD = 11.68) to a post-intervention mean of 33.54 (SD = 11.03). Patients expecting stays of varied durations (n = 7) similarly reported a reduction in anxiety, from a mean of 47.14 (SD = 10.29) to a mean of 37.29 (SD = 8.24).

Different types of surgery and durations of stay were tested using independent t-tests for differences in anxiety reduction (Table 1). For an expected one-night hospitalization, the mean change in anxiety score was 6.23 (SD = 6.76), but for all other durations of stay, the mean change in anxiety score was 9.85 (SD = 9.3). There was no correlation between the expected duration of stay and the percentage of patients whose anxiety decreased after receiving instruction. A reduction in state anxiety of 8.07 (SD = 8.1) was seen among those undergoing endocrine surgery, whereas a reduction of 5.8 (SD = 6.87) was observed among those undergoing other types of surgery. The pre- and post-educational intervention changes in anxiety levels did not vary significantly by surgical procedure.

**Table 1:** Change in State Anxiety Scores by Clinical Factors

	N	Mean decrease of change scores (SD)	F	Sig	t (df)	p
<b>Expected Length of Stay</b>			1.255	0.277	-1.005 (18)	p = 0.328
1 night	43	6.23 (6.76)				
All other lengths of stay	7	9.85 (9.3)				
<b>Type of surgery</b>				0.559	0.56(18)	P=0.583
Endocrinology	45	8.07 (8.1)				
All other types of surgery	5	5.8 (6.87)				

**Effectiveness of Nurse Led Intervention on Patients with Rheumatoid Arthritis' Knowledge, Self-Efficacy, and Clinical Outcome**

**Table 2:** Mean and Standard Deviation of Knowledge of Subjects in Various Sub Areas in the Experimental Group and Control Group during Pretest, Posttest - I, Posttest-II and Posttest – III (N = 100)

Area		Experimental Group (n = 50)			Control Group (n = 50)			Mean difference	Student Independent 't' test
		Mean	SD	Mean (%)	Mean	SD	Mean (%)		
Physiology and	Joints								
	Pretest	0.57	0.54	28.5	0.62	0.63	31.0	0.04	t= 0.364 p = 0.717 (NS) df= 104
	Posttest I	1.19	1.13	59.5	0.62	0.63	31.0	0.57	t= 5.419 p< 0.001*** df= 104 (S)
	Posttest	1.13	0.39	56.5	0.62	0.63	31.0	0.51	t= 5.065 p<0.001***

Anatomy	II								<b>df= 104</b> <b>(S)</b>
	Posttest	1.22	0.46	61.0	0.65	0.59	32.5	0.57	<b>p &lt;0.001***</b> <b>t= 5.530</b> <b>df= 104</b> <b>(S)</b>
Overview	III								
	Pretest	2.54	1.63	36.3	2.48	1.41	35.4	0.06	t= 0.190 p = 0.850  df= 104 (NS)
Arthritis	I	5.31	1.61	75.9	2.50	1.41	35.7	2.81	<b>t= 9.564</b> <b>p &lt;0.001***</b>  <b>df= 104</b> <b>(S)</b>
	II	4.94	1.56	70.6	2.87	1.51	41.0	2.08	<b>t= 6.973</b> <b>(S)</b> <b>p &lt;0.001***</b>  <b>df= 104</b>
	III	5.04	1.35	72.0	3.15	1.51	45.0	1.88	<b>t= 6.778</b> <b>p &lt;0.001***</b>  <b>df= 104</b> <b>(S)</b>

\*\*\*S - Very Highly Significant NS - Non-Significant

Data from pre- and post-tests I, II, and III for patients with rheumatoid arthritis in the experimental group and the control group are shown in Table 2. The students' knowledge was compared using a t test. Knowledge of most topics on Rheumatoid Arthritis did not change significantly between the experimental and control groups on the pretest, with the exception of the disease's meaning and risk factors, diagnostic tests, and treatment options.

There was a large disparity in posttest - I scores across different domains of expertise. A chi-square test showed that there was a statistically significant difference between the two groups at the 0.001 level in terms of knowledge across many categories. Knowledge in many subareas was significantly different between the experimental and control groups as measured by posttest - II. Knowledge on many posttest II subareas was significantly different between the two groups, as shown by a chi-square value of p<0.001. There was a statistically significant gap in posttest-III knowledge between the experimental and control groups in many specific domains. In terms of posttest III knowledge, the chi-square value obtained was significant at p<0.001, showing that there is a substantial difference between the two groups.

## CONCLUSION

We can say that the patient's understanding of the condition and therapy, as well as the patient's belief in his or her own ability to participate in healthful behavior, are crucial factors in determining whether or not the patient will actually do so. As treat-to-target becomes more mainstream, international societies' suggestions emphasize collaborative problem solving. This includes explaining to the patient the goal of therapy and the reasoning for increasing the intensity of treatment if the goal is not met. In this context, the nurse's leadership of targeted teaching initiatives is crucial. The qualitative results point to a good evaluation of the training, with participants reporting higher levels of readiness and self-assurance as a result. Surgery patients' confidence in their own abilities and their results might benefit from less anxiety. The success of pre-surgery education depends on the backing of top-level

administrators. Patients have a major difficulty with their lack of understanding of the condition and its treatment. Improvements in patients' knowledge, self-efficacy, and clinical result were seen after Nurse Led Interventions, which included a scheduled teaching program, demonstration of exercises, and small group counselling.

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