

Effect of Preoperative Educational Counselling about Routine Elements of Peri Operative Care on Patients Experience Through Their First Surgical Journey: A Randomised Control Trial

Kurian FS*, Balakrishnan S and Jojo J

Department of Surgery MOSC Medical College Hospital Kolenchery, Ernakulam. 682311 Kerala. India

*Corresponding author:

Feba Susan Kurian,
Department of Surgery MOSC Medical College
Hospital Kolenchery, Ernakulam. 682311 Kerala.
India

Received: 12 Aug 2024

Accepted: 04 Sep 2024

Published: 10 Sep 2024

J Short Name: AJSCCR

Copyright:

©2024 Kurian FS, This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and build upon your work non-commercially.

Citation:

Kurian FS. Effect of Preoperative Educational Counselling about Routine Elements of Peri Operative Care on Patients Experience Through Their First Surgical Journey: A Randomised Control Trial. *Ame J Surg Clin Case Rep.* 2024; 8(2): 1-6

Keywords:

Patient reported outcome measure; Patient empowerment; Patient satisfaction; Questionnaire

1. Abstract

1.1. Background: Pre-operative counselling improves patient's care experience. The trial studied the effect of pre-operative counselling about non-procedural elements of perioperative care, on patients undergoing their life's first surgery.

1.2. Methods: Patients undergoing their first-ever surgery, were randomised into test group A and control group B. Surgical experience was recorded at 48 hours on a regional-language questionnaire.

1.3. Results: Groups A and B had mean experience scores of 71.78 and 62.93 respectively (Mean difference (MD) 8.85; $P < 0.001$). Mean scores in preoperative, intraoperative & post-operative domains were 33.31 versus 30.27 (MD 3.05; $P < 0.001$), 14.47 versus 12.30 (MD 2.15; $P < 0.001$) and 24.00 versus 20.37 (MD 3.63; $P < 0.001$) for the groups respectively. Significant difference favoured the test group in overall surgical experience and specified perioperative periods.

1.4. Conclusion: Educating patients undergoing their first surgery about elements of perioperative care inherent to hospitalization for any surgery, improves patients' care experience in their surgical journey.

2. Introduction

Surgery can be daunting for patients, especially their first experience. Pre-operative counselling refers to an educational intervention before surgery with the aim of improving patient's knowledge, health and outcome. [1] This usually happens as part of informed consent. The patient is given information specific to the procedure

and expected procedure related benefits, risks, safety & care arrangements available to ensure safe treatment. Despite such procedure specific counselling being standard practice, patients often suffer peri operative anxiety which overwhelmingly comes to define their experience with surgical care despite good treatment outcomes. Several international studies have looked into the effect of pre-operative counselling on individual aspects like anxiety [2,3] length of stay [3] and pain [2]. However, there is lack of data on the effect of pre-operative counselling about routine peri operative hospital processes on the overall experience of the patient through their first ever surgical care journey.

3. Objective

The lack of evidence led us to null hypothesize that pre-operative counselling about routine non procedural elements of perioperative care would have no impact on patient's overall surgical experience, through their first surgical journey. The objective of the trial was to investigate the effect of a single episode of structured pre operative counselling about routine non procedural elements of perioperative care in a tertiary care centre, on the personal experience of patients undergoing the first surgical treatment under anaesthesia in the main operating theatre.

4. Material and Methods

After seeking clearance from the institutional ethics committee (IEC) and institutional review board (IRB), the trial was registered in Clinical Trial Registry -India: CTRI/2021/02/041231. Patients charted for the first surgical procedure in their life, who satisfied our inclusion criteria were enrolled into the Randomised Control Trial of parallel design.

4.1. Inclusion Criteria

Inpatients admitted to surgical wards for general surgical & urology procedures at a tertiary care teaching hospital in the region with the following attributes a) Age group:18-80 years b) Charted for their life's first surgical procedures under general and spinal anaesthesia.

4.2. Exclusion Criteria

a) Patients undergoing major surgeries requiring post-operative intensive care other than immediate recovery from anaesthesia. b) Patients undergoing minor surgeries under local anaesthesia. c) Patients undergoing emergency surgical procedures. d) Patients who have had previous surgical experience apart from obstetric procedures.

In the absence of a suitable questionnaire in the regional language, one was developed, validated by an expert committee of 9 members (including 6 doctors, 2 nurses, and a counsellor) and statistically validated by a qualified bio-statistician using Cronbach's alpha. The questionnaire comprised 15 questions divided into three sections of 5 questions each to cover covering three periods of their surgical treatment journey; (domain 1: preoperative experience, domain 2: operation theatre experience, domain 3: postoperative experience) marked on a 5 point Likert scale. (Annexure 1) Sample size (n=62) was calculated based on a pilot study on twenty patients accepting type I error α at 5% and type II error β at 20% and a standard deviation of 5 using the formula.

Patients were randomised into two groups by permuted block randomisation with allocation concealment using closed envelopes to eliminate recruitment bias with an allocation ratio of 1:1. Envelopes were opened only after eligibility & consent from the subject being enrolled was confirmed. Random allocation envelopes were prepared by an individual not involved in recruitment or assessment. Blinding of participants was achieved by the recruiting investigator spending equal time speaking with subjects from both groups after group allocation to avoid subjective bias among the recruited subjects admitted to the same ward. Double blinding was achieved by ensuring delivery of experience assessment questionnaire 72 hours after surgery by an assessor blinded to the allocation. Statistical analysis of the data was done using R software and Chi-Square test calculator from Social Science Statistics (<https://www.socscistatistics.com/tests/chisquare2/default2.aspx>)

5. Observations and Results

Based on the defined criteria 62 subjects were randomised to Test

group (n=32) & control group (n=30). (Annexure 1: Consort Flow chart). The trial was to be conducted as per institutional mandate between February and April 2020 but was rescheduled till relaxation of COVID restriction in March 2021 for 3 months. IRB & CTRI was duly notified of these unavoidable changes. Recruitment was stopped when the desired sample was reached. Male to female ratio was 59.4: 34.3 and 63.4: 36.5 in the test and control group respectively. ($P<0.05$)

Majority of the participants in both groups had an educational qualification equivalent to a high school degree or higher degree. 56.2% of the participants in the test group and 63.3% of the participants in the control group underwent minimally invasive surgical and urological procedures. ($P<0.05$) The test and compared groups were compared for confounding factors such as influence of type of procedure & comorbidities and were found to be comparable in all other aspects other than the intervention under study using the Chi-square test (Table 1).

The data of results was confirmed to follow normal distribution (Kolmogorov-Smirnov test). An independent sample T test was performed between the groups to check for significance of difference in the mean overall surgical experience score as well as mean of domain scores covering three periods of their surgical treatment journey facilitated by the design of the questionnaire. It was observed that surgical experience score of the test group was 71.78 (SD =3.2) and the control group was 62.93(SD = 6.44) with mean difference 8.85 [95% CI (6.21 11.49) $P<0.001$ (Table 2)

We also observed that there was a significant difference in the average score between the control group and experimental group in all the 3 domain scores viz preoperative, Operation theatre and post operative experience score with mean differences of 3.05 [95% CI (1.43-4.67) $P<0.001$] respectively (Table 3).

A subgroup analysis of the questionnaire response revealed that the sum of scores of the patients of agreement in principle to the positively worded questions (agree + strongly agree) and disagreement in principle to the negatively worded questions (disagree + strongly disagree) in control group agreed in principle to the statement that they felt confident in going ahead with the surgery with no disagreement in principle in either group to that question. When similar scores were considered for strong agreement and strong disagreement to the same questions considered above, significant difference was observed between the 2 groups. 96.8% of the test group as against 66.7% of the control group strongly agreed to the statement that they felt confident in going ahead with the surgery.

Table 1: Demographic Comparability

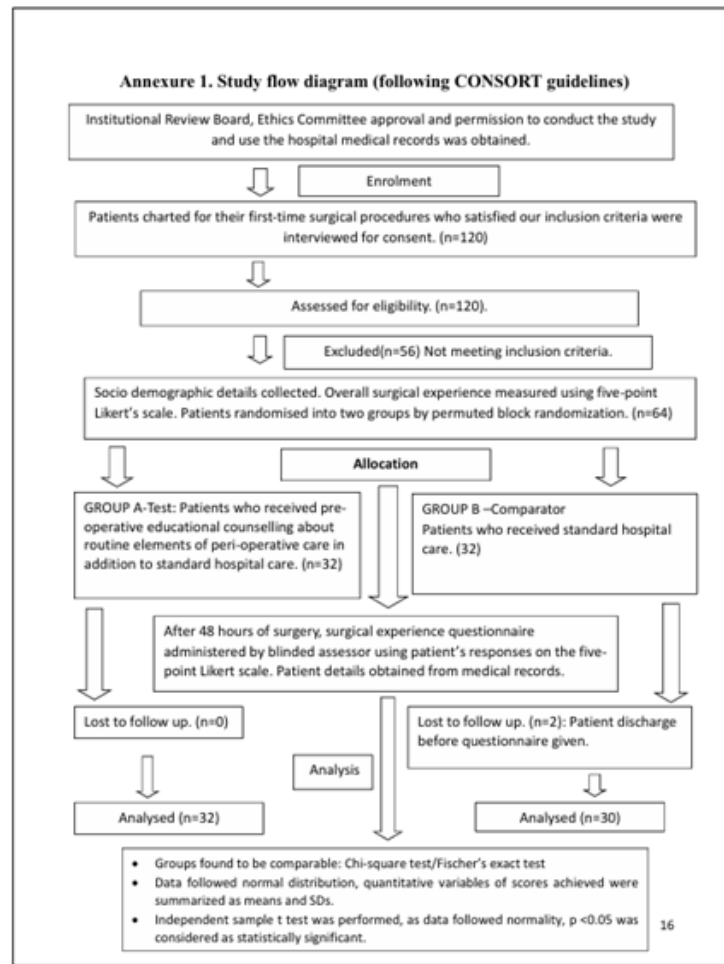
Variables		Groups		Chisquare/fishers exact test	P Value
Sex		A: test	B: control	0	1
	Male	21(59.4%)	19(63.4%)		
	Female	11(34.3%)	11(36.5%)		
Education				4.34	0.23
	Graduate / PG	15(46.9%)	8(26.7%)		
	Higher sec school (A level)	3(9.4%)	4(13.3%)		
	High school (GCSE)	7(21.9%)	13(43.3%)		
	Primary school	5(15.6%)	4(13.3%)		
	No formal education	2(6.2%)	1(3.3%)		
Occupation				Fishers exact test	0.1
	Employed	10(31.2%)	11(36.6%)		
	Professional	5(15.6%)	2(6.7%)		
	Retired	3(9.4%)	0		
	Self employed	1(3.1%)	6(20%)		
	Unemployed	13(40.6%)	11(36.7%)		
Co-morbidities				0.522	0.47
	Absent	24(75%)	20(67%)		
	Present	8(25%)	10(33%)		
Surgery Type				Fishers exact test	
	Lap	5(15.6%)	7(23.3%)		
	Min. Invasive (urology)	18(56.2%)	19(63.3%)		
	Open	9(28.1%)	4(13.3%)		

Table 2: Mean surgical experience score- Test versus Control

VARIABLE	GROUP	N	MEAN	MEAN DIFFERENCE	T STATISTIC	P VALUE	95% CI
Overall surgical experience score	TEST	32	71.78	8.85	6.76	<0.001*	6.21-
	CONTROL	30	62.93				11.49

Table 3: Mean surgical experience score in 3 domains-Test versus Control

VARIABLE	GROUP	N	MEAN	MEAN DIFFERENCE	T STATISTIC	P VALUE	95% CI
Presurgical experience score	TEST	32	33.312	3.05	3.76	<0.001*	1.43- 4.67
	CONTROL	30	30.27				
Experience score during surgery	TEST	32	14.468	2.17	5.6	<0.001*	1.39- 2.95
	CONTROL	30	12.3				
Postsurgical experience score	TEST	32	24	3.63	7.76	<0.001*	2.69- 4.58
	CONTROL	30	20.366				



6. Discussion

Surgery, however vital & well performed, has an undeniable effect on the emotional health of a patient, which can in turn affect post-operative physical recovery and compliance to future medical treatments.[4] Patient satisfaction is as important as the clinical outcome from surgery in terms of service delivery & planning. A key determinant of patient satisfaction is patient education. [5,6] A common method of coping with an anticipated life event is by obtaining information which reduces the degree to which it is perceived as being stressful.[2] The standard process of consenting for surgery focuses on treatment options, benefits versus risks of the proposed procedure, steps taken to ensure safe outcomes & expected recovery process including return to normal work & life. While there has been recent emphasis on improving patient’s pre-operative, operative and post operative experience to improve satisfaction & aid recovery there was dearth of literature on the effect of preoperative educational counselling about routine elements of peri-operative care in improving a patient’s surgical experience. This study was therefore a novel attempt to investigate the effect of educating patients about routine elements of peri-operative care inherent to all surgical procedures, but often unaddressed, in improving patient’s overall surgical experience during their life’s first surgical treatment journey.

We observed from our study that there existed a significant difference in the surgical experience score between test and control groups (P<0.001) A significant difference in the average domain scores between the counselled group and uncounselled group was also noted in all the three questionnaire-defined treatment period domains (preoperative, Operation theatre and postoperative experience domains). A statistically significant difference was thus observed in the surgical experience score between the groups in favour of the test group validating the effectiveness of the study intervention.

The sub-group analysis of the questionnaire response observed that the sum of overall agreement in principle (agree + strongly agree) and disagreement in principle (disagree + strongly disagree) between both groups were not significantly different. This in all possibility reflects the effect of the robust surgical consenting process which ensured that all the patients were certain beyond doubt that they need to undergo surgery with all its inherent benefits and risks even though they had less than maximal confidence in their experience reflected in the postop questionnaire score.

However, the statistically significant difference in favour of the test groups when responses of strong agreement or strong disagreement was considered clearly reflects the influence of the counselling intervention in boosting confidence of the patients to cer-

tainty as also reflected by other studies that offer similar evidence for the positive effects of preoperative counselling on different variables post operatively. [7,8,9,10,11,12,13,14, 15] Multiple studies have proven that satisfied patients have better health outcomes because they tend to the obey doctor's advice, refrain from malpractice litigations, comply with treatment regimens, attend follow up appointments, and ask for medical advice when required.[14,16] A meta-analysis of 68 studies undertaken by Hathway et al [7] indicates that patients who receive preoperative education have 20 percent favourable postoperative outcomes of physiological variables, (length of stay, sedatives used, recovery, complications) and psychological variables (observed ratings of cooperation, scores of self-reported anxiety inventories, etc) compared to those patients who did not receive preoperative education [7]. These results are comparable to our study wherein in we observed favourable outcomes among the test population in terms of various preoperative, intraoperative and postoperative elements. To balance our conviction based on our observations we would like to also highlight a few studies that show negative or no effect of pre-operative counselling on patient outcomes. [17,18] They report difficulties experienced in counselling or patient's inability to understand or use the information provided as reasons for the contrary results. The high level of literacy in the state of Kerala, delivery of structured information in the patient's mother tongue as well as use of a purpose designed & validated questionnaire in the regional language allowed us to minimize the effect of these confounding factors experienced by the aforementioned researchers, in the present study. The restriction on the duration of the trial and permission to recruit beyond minimum calculated sample size due to covid related interaction guidance pertaining to non-clinical activity, has to be declared as a trial limitation. Achievement of sample size ensured outcomes were unaffected by this limitation.

7. Conclusion

Preoperative educational counselling about routine elements of peri-operative care in addition to routine surgical consent process significantly improved the patient's experience through their first surgical journey. Routine introduction of such counselling for patients regarding peri-operative care could serve to improve the patients overall surgical experience and in turn translate to higher level of confidence among patients to seek treatment when needed without fear, thus improving outcomes.

8. Acknowledgements

Dr. K K Divakar (Dean MOSC Medical College); Mr. Joy P Jacob (Secretary and CEO); Dr. Sojan Ipe (Medical Superintendent); Dr. Sara Vergis (Professor, Research coordinator); Dr. Anna Mathew (Professor, Pharmacology); Dr. Kalesh M Karun (Associate Professor, Biostatistician); Consultant Surgeons – Surgery: Dr. Satish G Prabhu, Dr. Vergis Paul, Dr. Vijay Paul. Urology: Dr. Shal Dr. Bobby; Main OT nurses and ward nurses; Colleagues (Dr. Hiba

Sherin, Dr.Philip, Dr. Jeby, Dr. Abin , Dr. Devanand, Dr.Justin , Dr. Divya, Dr. Hasna).

9. Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

References

1. Handoll HH, Parker MJ. Conservative versus operative treatment for hip fractures in adults. *Cochrane Database Syst Rev.* 2008; (3): CD000337.
2. Guo P. Preoperative education interventions to reduce anxiety and improve recovery among cardiac surgery patients: a review of randomised controlled trials. *J Clin Nurs.* 2015; 24(1-2): 34-46.
3. Goodman H, Parsons A, Davison J, Preedy M, Peters E, Shuldham C, Pepper J, Cowie MR. A randomised controlled trial to evaluate a nurse-led programme of support and lifestyle management for patients awaiting cardiac surgery 'Fit for surgery: Fit for life' study. *Eur J Cardiovasc Nurs.* 2008; 7(3): 189-95.
4. Leino-Kilpi H, Vuorenheimo J. Patient satisfaction as an indicator of the quality of nursing care. *Vard Nord Utveckl Forsk.* 1992; 12(3-4): 22-8, 62.
5. Padberg RM, Padberg LF. Strengthening the effectiveness of patient education: applying principles of adult education. *Oncol Nurs Forum.* 1990; 17(1): 65-9.
6. Harris J. You can't ask if you don't know what to ask: a survey of the information needs and resources of hospital outpatients. *N Z Med J.* 1992; 105(934): 199-202.
7. Hathaway D. Effect of preoperative instruction on postoperative outcomes: a meta-analysis. *Nurs Res.* 1986; 35(5): 269-75.
8. Cupples SA. Effects of timing and reinforcement of preoperative education on knowledge and recovery of patients having coronary artery bypass graft surgery. *Heart Lung.* 1991; 20(6): 654-60.
9. Devine EC. Effects of psychoeducational care for adult surgical patients: a meta-analysis of 191 studies. *Patient Educ Couns.* 1992; 19(2): 129-42.
10. Sjöling M, Nordahl G, Olofsson N, Asplund K. The impact of preoperative information on state anxiety, postoperative pain and satisfaction with pain management. *Patient Educ Couns.* 2003; 51(2): 169-76.
11. Prouty A, Cooper M, Thomas P, Christensen J, Strong C, Bowie L, Oermann MH. Multidisciplinary patient education for total joint replacement surgery patients. *Orthop Nurs.* 2006; 25(4): 257-61.
12. Spalding NJ. Reducing anxiety by pre-operative education: make the future familiar. *Occup Ther Int.* 2003; 10(4): 278-93.
13. Cheung LH, Callaghan P, Chang AM. A controlled trial of psycho-educational interventions in preparing Chinese women for elective hysterectomy. *Int J Nurs Stud.* 2003; 40(2): 207-16.
14. Aharony L, Strasser S. Patient satisfaction: what we know about and what we still need to explore. *Med Care Rev.* 1993; 50(1): 49-79.

15. Zeithaml VA, Parasuraman A, Berry LL. Delivering Quality Service: Balancing Customer Perceptions and Expectations. New York London: Free Press; Collier Macmillan; 1990 Chapter 2: The customer's view of service quality.
16. Angelopoulou P, Kangis P, Babis G. Private and public medicine: a comparison of quality perceptions. *Int J Health Care Qual Assur Inc Leadersh Health Serv.* 1998; 11(1): 14-20.
17. Gocen Z, Sen A, Unver B, Karatosun V, Gunal I. The effect of preoperative physiotherapy and education on the outcome of total hip replacement: a prospective randomized controlled trial. *Clin Rehabil.* 2004; 18(4): 353-8.
18. Asilioglu K, Celik SS. The effect of preoperative education on anxiety of open cardiac surgery patients. *Patient Educ Couns.* 2004; 53(1): 65-70.