Effectiveness of Video-assisted Intervention on Perception and Anxiety among Patients Undergoing Robotic Surgery in a Selected Hospital, Mangaluru

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

Original Research Article

ABSTRACT

Background: There are times when a procedure may have benefits, but a patient is unwilling to undergo surgery for their own reasons. Making this choice is their right. Many patients view surgery as a last option, rather than their first choice in treatments. The need for a surgery can be a confusing and frightening prospect and people may have many questions. Robotic assisted surgery has a great future in India, but majority people are not aware about robotic surgery.
Purpose: To focus on the level of anxiety and perception among robotic surgery patients and it has also identified the need for a video assisted intervention for patients undergoing robotic surgery.
Methods: A video assisted intervention on perception(perception rating scale-20 items) and anxiety (State Anxiety Inventory-20 items) among study participants(n=30) undergoing robotic surgery were selected by purposive non probability sampling by means of self administered questionnaire.
Results The perception mean difference pretest-post-test 1(18.80±7.45), pretest-post test 2 (21.83±8.00) and post-test 1- post-test 2 (3.03±7.18). The level of perception has increased from pre-test to post-test 1 and from post-test 1 to post-test 2 and it is statistically significant (p< 0.05).

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The anxiety mean difference pre-test-post-test 1 (11.27±12.98), pre-test-post test 2 (21.40±13.38) and post-test 1-post-test 2 (10.13±10.89). The level of anxiety has decreased from pre-test to post-test 1, from post-test 1 to post-test 2, and it is statistically significant (p< 0.05).
Conclusion: The findings of the study showed that the video assisted intervention was effective on levels of anxiety and perception among patients undergoing robotic surgery.

Keywords: Anxiety; perception; Robotic surgery.

1. INTRODUCTION

Robotic surgery is the newest advancement in surgical procedure which may not be that acceptable to the people. Preoperative anxiety is a common phenomenon in preoperative patients and it will start from the date the surgeon plans for the surgery [1]. Most of the people have not even heard of the term robotic assisted surgery, even though sources of data, such as brochures, online assets, etc. are available. But most of the data are unclear in terms of advantages, disadvantages and indications for their use [2]. Therefore, always it is better to assess patients perception and then educate them about robotic assisted surgery.

2. METHODS

The investigation of the present research is based on pre experimental one group pretest and post test design. After receiving approval from the Institutional Scientific Review Board and ethical committee, the data collected from patients undergoing genitourinary and oncology robotic surgery but excluded patients who are already undergone robotic surgery and physically or mentally disabled. The data included baseline and clinical variables, level of anxiety and perception. The data collection was done from 8-1-2021 to 27-3-2021 at Yenepoya Medical College Hospital, Mangaluru. After self - introduction by the investigator, participants were explained about purpose of the study. For the purpose of data analysis, paired t-test was used by using SPSS Version 20.0.

2.1 The Following Tools were used in this Study

Baseline and clinical proforma: The baseline and clinical proforma consists of 10 items.

State Anxiety Inventory: The State Anxiety Inventory scale consists of 20 items arranged on a four-point scale of intensity ('not at all', 'somewhat', 'moderately so' and 'very much so') and measures the subjective feelings of apprehension, nervousness and anxiety at the moment. The range of possible scores for the state anxiety inventory varies from a minimum score of 20 to a maximum score of 80. State anxiety inventory scores are commonly classified as "minimal anxiety" (20-37), "mild anxiety" (38-44), and "moderate anxiety" (45-80). The reliability estimated by Cronbach's Alpha=0.816.

Perception rating scale: The perception rating scale consisted of 20 items arranged on a five-point rating scale (strongly agree, agree, neutral, disagree and strongly disagree). The range of possible scores for the perception rating scale varies from a minimum score of 20 to a maximum score of 100. Perception rating scores are commonly classified as "low level perception (20-46), "medium level perception" (47-73), "high level perception" (74-100). The reliability estimated by Cronbach's Alpha =0.867.

3. RESULTS

Description of level of perception was estimated in terms of comparison between pre test, post test 1 and post test 2 perception score.

Table 1. Percentage distribution of perception scores among study group before and after the intervention.

| | | Pre-test | Post-test 1 | Post-test 2 |
| | | | | n=30 |
Level of perception	Score	f (%)	f (%)	f (%)
Low level perception	20-46	02(6.7%)	-	-
Medium level perception	47-73	25(83.3%)	08(26.7%)	03 (10%)
High level perception	74-100	03(10%)	22(73.3%)	27(90%)

The pre-test- post-test 1,pretest-post-test 2 and post-test 1-post-test 2 perception scores in terms of their mean difference, standard deviation, t value and significance is presented in Table 2.

Description of level of anxiety was estimated in terms of comparison between pre-test, post-test 1 and post-test 2 anxiety score.

The pre-test- post-test 1,pretest-post test 2 and post test 1-post test 2 anxiety in terms of their mean, standard deviation, t value and significance is presented in Table 4.

4. DISCUSSION

4.1 Baseline Variables of Patients Undergoing Robotic surgery

4.1. 1 Gender

The findings of the present study revealed that the majority (56.7%) of the participants were male and only 43.3% were female.

These findings were consistent with the study findings of Jasim SS, Laing HB, Douglas S L et.al. which was conducted to assess the perceptions of robotics and navigation in orthopaedic surgery in an outpatient arthroplasty clinic in London [3].

4.1.2 Effectiveness of video-assisted intervention in terms of improving level of perception among patients undergoing robotic surgery

The level of perception has increased from pre-test to post-test 1 and from post-test 1 to post-test 2 and it is statistically significant (p< 0.05). Hence, it was concluded that the video assisted intervention was effective in improving the perception among patients undergoing robotic surgery.

Gadler T, Crist C, Brandstein K et.al done a study on the effects of a take-home educational video on patient anxiety at an acute care hospital. The study participants (n=31) were administered pre-test and post-test and a 93.5% agreed that the video education helped to reinforce the information covered in the pre-surgical appointment (p<0.05) [4].

Table 2. Level of perception among study group before and after intervention

n=30

	Mean difference ± SD	t value	p value
Pre-test -post-test 1	18.80±7.45	13.82	0.000*
Pre-test –post-test 2	21.83±8.00	14.95	0.000*
Post-test 1-Post-test 2	3.03±7.18	2.32	0.028*

*Statistical test used- paired t test *significant p<0.05*

Table 3. Percentage distribution of anxiety scores among study group before and after the intervention

		Pre-test	Post-test 1	Post-test 2
Level of perception	Score	f (%)	f (%)	f (%)
No or minimal anxiety	20-37	-	05(16.7)	14 (46.6)
Mild anxiety	38-44	4(13.3)	0 9 (30)	11 (36.7)
Moderate anxiety	45-80	26(86.7)	16 (53.3)	05(16.7)

Table 4. Level of anxiety among study group before and after intervention

n=30

	Mean difference ± SD	t value	p value
Pre-test -post-test 1	11.27±12.98	4.76	0.000*
Pre-test –post-test 2	21.40±13.38	8.76	0.000*
Post-test 1-Post-test 2	10.13±10.89	5.10	0.000*

*Statistical test used- paired t test *significant p<0.05*

4.1.3 Effectiveness of video assisted intervention in terms of reducing level of anxiety among patients undergoing robotic surgery.

The mean pre-test-post-test 1(60.13±11.99), pre-test-post test 2(60.13±11.99) and post-test 1-post-test 2(48.87±13.50). The level of anxiety has decreased from pre-test to post-test 1, from post-test 1 to post-test 2 and it is statistically significant (p< 0.05). Hence, it was concluded that the video assisted intervention was effective in reducing anxiety among patients undergoing robotic surgery.

The present study is consistent with the findings of another study conducted in Odisha to evaluate the impact of pre-operative video assisted education on knowledge and anxiety among patients undergoing abdominal surgery in a selected hospital. The results showed, pre-operative video instruction highly decrease anxiety score (p<0.001) [5].

The result of the present study is consistent with the findings of another study conducted in Vellore, India to assess the effectiveness of instructional video on preoperative anxiety of patients undergoing orthopedic surgery in selected a hospital. The results showed, significant difference between pretest and post test score in the experimental group (*p*<0.05) [6].

The result of the present study is consistent with the findings of another study conducted on a prospective observational clinical study was conducted on preoperative education reduces preoperative anxiety in cancer patients undergoing surgery in National Cancer Institute, Rio de Janeiro, Brazil.. The study participants (n=72) were administered Beck anxiety inventory. The results showed, significant difference in the anxiety level after preoperative teaching (p<0.05) [7].

The present study is also supported by the result of the study conducted on the effects of pre-operative individualized education on anxiety and pain severity in patients following open heart surgery in the adult cardiovascular surgery service and intensive care unit of a foundation university hospital, Turkey. The results showed, significant difference between pretest and post test score in the experimental group (p<0.05) [8].

4.1.4 Association between level of anxiety, perception and selected baseline and clinical variables

The present study showed that anxiety level was not increased or decreased with advancing age and level of education. But another study conducted on patient perception regarding preoperative information to anxiety towards surgery in India by Lakra D and Kujur S P revealed that, older patients were more anxious than younger ones and increasing level of education decreases anxiety [9].

5. CONCLUSION

The level of anxiety has decreased from pre-test to post-test 1, from post-test 1 to post -test 2 and it is statistically significant (p< 0.05). Hence, it was concluded that the video assisted intervention was effective in reducing anxiety among patients undergoing robotic surgery.

The level of perception has increased from pre-test to post-test 1 and from post-test 1 to post-test 2 and it is statistically significant (p< 0.05). Hence, it was concluded that the video assisted intervention was effective in improving perception among patients undergoing robotic surgery.

There was no significant association between the level of perception and baseline and clinical variables.

There was no significant association between the level of anxiety and baseline and clinical variables.

6. LIMITATION OF THE STUDY

The study was confined to a specific geographical area, which is a limitation for generalization of the study findings.

The study design used for the study was one-group pre-test post-test design.

The sampling technique used for the study was non-probability purposive sampling, which is again a limitation of the study.

The limited sample size further restricts the understanding of the study variables.

CONSENT

Written consent was taken from those who were willing to participate in the study.

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Ay AA, Ulucanlar H, Ay A, Ozden M. Risk factors for perioperative anxiety in laparoscopic surgery. JSLS. 2014;18(3):1-7.
Available: (PDF) Risk Factors for Perioperative Anxiety in Laparoscopic Surgery (researchgate.net)

2. Moloney R, O'Brien B, Coffey C, Murphy F. Patients' perceptions after robot- assisted surgery: An integrative Review. AORN J. 2020;112(2):133-41.
Available: Patients' PerceptionsAfter Robot- Assisted Surgery: An Integrative Review - Moloney -2020 - AORN Journal - Wiley Online Library

3. Jassim SS, Laing BH, Douglas SL, Haddad F S. Robotic and navigation systems in orthopaedic surgery: how much do our patients understand.Clin Orthop Surg. 2014;6(4):462-7.
DOI:10.4055/cios.2014.6.4.462. Epub 2014 Nov 10. PMID: 25436072; PMCID: PMC4233227.

4. Gadler T, Crist C, Brandstein K, Schneider SM. The effects of a take home video intervention on patient anxiety, satisfaction, and provider time. Urol Nurs. 2016;36(6):297-302.
Available:https://pdfs.semanticscholar.org/ccb1/31622154aff1475562912f73ac5445003726.pdf

5. Das S, Pradhan J, Pradhan R. Effect of pre-operative video assisted intervention on knowledge and anxiety among the patients undergoing abdominal surgery.STM journals. 2015;5(1):151-60.
Available: (PDF) Effect of Pre-Operative Video Assisted Teaching on Knowledge and Anxiety among the Patient Undergoing Abdominal Surgery (researchgate.net)

6. Paripoorani D, Babu V, Poongodi K, Cherian VM. Effectiveness of instructional video on preoperative anxiety of patients undergoing orthopedic surgery. Indian Journal of continuing nursing education. 2015;16(2):36-41.

7. Lemos MF, VSylvio, Neto L, Barrucand L, Vercosa N, Tibirica E. Preoperative education reduces preoperative anxiety in cancer patients undergoing surgery : Usefulness of the self-reported Beck anxiety inventory. Braz J Anesthesiol. 2019;69(1):1-6.
Available:https://www.sciencedirect.com/science/article/pii/S0104001418301088?via%3Dihu b

8. Erturk EB, Unlu H. Effects of pre-operative individualized education on anxiety and pain severity in patients following open-heart surgery. International Journal of Health Sciences. 2018; 12(4):26-34.
Available: Effects of pre-operative individualized education on anxiety and pain severity in patients following open-heart surgery. - Abstract - Europe PMC

9. Lakra D, Kujur SP. Patient perception regarding preoperative information to anxiety towards surgery. J evol med dent sci. 2015;4(51):8839-45.
DOI: 10.14260/jemds/2015/1281

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