

Impact of Video-based Teaching Programme on the Knowledge and Implementation of Post-surgical Exercises in Patients with Abdominal Operations

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Abstract

*Certain strategies after surgery can lead to pulmonary and other post-operative complications. Engaging in post-operative activities such as deep breathing, using an incentive spirometer, coughing exercises, along with wrist, arm, shoulder, leg, early ambulation, and turning exercises can help restore the normal functions of the lungs, intercostal muscles, diaphragm, and abdominal muscles. **Materials/methods:** The proposed study employed a quasi-experimental research design, specifically utilizing a pre-test and post-test approach within a control group. A non-probability purposive sampling technique was applied to select 40 patients undergoing abdominal surgery for the research. Data collection utilized a semi-structured knowledge questionnaire and an observational practice checklist. Analysis of the collected data involved employing descriptive and inferential statistics, including frequencies, percentages, mean, standard deviation, chi-square, paired “t” test, and unpaired “t” test. **Results:** The findings of the study demonstrated that the overall mean post-test knowledge score in the experimental group was 16.60+/-0.94, which was significantly higher than in the control group 10.05+/-0.94. The study’s results indicated that the average post-test practice score in the experimental group was 10.05+/-0.49, showing a significant increase compared to the control group’s score of 3.60+/-0.68. **Conclusion:** The study statistically proved that VATP on post-operative exercises designed by the investigator was highly effective.*

Keywords: Abdominal surgery, post-operative, video-assisted teaching programme, post-surgical exercises, VATP

INTRODUCTION

“To enjoy the glow of good health, you must exercise.”

Health is a condition of balance in the body’s structure and function, achieved through its effective and dynamic adaptation to external forces, with the body actively responding to promote readjustment. Disease, on the other hand, refers to an abnormal condition affecting an organism’s body. It is often considered to be a medical condition associated with specific symptoms and signs. Diseases are treated by either medical interventions or surgical interventions. Surgery is a common form of treatment when medical treatment fails. During the surgery, when a client is under general anesthesia, his or her lungs do not ventilate fully. The discomfort of the abdominal incision inhibits inspiration and reduces lung expansion. The aim of nursing interventions should be early recovery, avoiding complications, and allowing the client to return to the highest level of possible functioning [1–6].

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Video-assisted teaching can convey information concisely and consistently. It is very essential for family care givers because it provides them with valuable information and also helps the educator illustrate in a proper manner. Thus, video teaching will aid in positive performance from the client and will help in early recovery [7].

NEED FOR THE STUDY

In the current healthcare landscape, it is imperative for nursing professionals to have the necessary knowledge and skills to effectively educate diverse groups in various environments, due to the comprehensive approach of nursing practice. The importance of pre-operative education in promoting a positive surgical outcome for patients is well-recognised. A wealth of research has shown that pre-operative guidance can significantly reduce both the likelihood of post-surgical complications and the duration of hospital stays. In developing countries, the rate of post-operative issues among patients undergoing major surgeries is notably high. Conversely, such complications in Western nations constitute a much smaller proportion. Patients who undergo abdominal surgeries are particularly susceptible to post-operative complications. A noticeable gap in knowledge about post-operative exercises among these patients has been identified. Early walking or movement stands out as the most effective nursing intervention to prevent post-operative complications. Medical-surgical nurses deliver care across diverse environments, emphasising the fundamental and central role of the client in the provision of nursing services. Their dedication lies in supporting clients to attain the highest possible level of function. When patients are informed well in advance regarding do's and don'ts in the performance of their activities towards recovery the outcome will be very satisfactory [8–16].

Nurses are providing pre-operative teaching but it can be made more effective by using the audio-visual effect. Therefore, the presence of a videotape to provide pre-operative teaching of respiratory exercises will be a tool which can be made available at all times for patient teaching.

OBJECTIVES OF THE STUDY

1. To assess the pre-interventional level of knowledge and practice of post-operative exercise in both the experimental and control groups.
2. To evaluate the effectiveness of a video-assisted teaching programme on post-operative exercises among patients undergoing abdominal surgery in an experimental group.
3. To compare the post-interventional knowledge score and practice scores in both experimental and control groups.
4. To find an association between pre-interventional knowledge scores and practice scores with their selected socio-demographic variables in both experimental and control groups.

HYPOTHESIS OF THE STUDY

H1: A notable distinction is expected between the post-interventional and pre-interventional levels of knowledge concerning post-operative exercises among patients undergoing abdominal surgery, with statistical significance set at the 0.05 level.

H2: A significant disparity is anticipated between the post-interventional and pre-interventional levels of practical implementation concerning post-operative exercises among patients undergoing abdominal surgery, with statistical significance established at the 0.05 level.

H3: The post-interventional knowledge scores for the experimental group are expected to be notably superior to the scores of the control group, with a significance level set at 0.05.

H4: The post-interventional practice scores for the experimental group are anticipated to be significantly greater than the practice scores in the control group, with a significance level of 0.05.

H5: A significant correlation is expected between the pre-interventional knowledge scores and practice scores related to post-operative exercises among patients undergoing abdominal surgery and their chosen socio-demographic variables.

OPERATIONAL DEFINITIONS

- *Evaluate effectiveness:* Form an idea of the amount or value to produce an intended result. In this

study, evaluating the effectiveness refers to finding the result of video-assisted teaching on post-operative exercises in abdominal surgery patients as evidenced by gain in knowledge and practices.

- *Video-assisted teaching programme*: In this study, VATP refers to a systematic plan of teaching and learning process using audio-video regarding post-operative exercises including the demonstration and re-demonstration of post-operative exercises.
- *Knowledge*: In this study, knowledge refers to awareness brought among the patients regarding what is expected of them after undergoing abdominal surgery to restore and fast recovery.
- *Practice*: In this study, practice refers to putting awareness into action.
- *Post-operative exercise*: Physical activity carried out for the sake of maintaining good health and fitness. In this study, post-operative exercise refers to the breathing exercises, incentive spirometer, coughing exercises, wrist exercise, arm exercise, shoulder exercises, leg exercises, turning exercises, and ambulatory exercises that are carried in the post-operative period.
- *Abdominal surgery*: A surgical procedure that entails the incision and opening of the abdominal area. In the context of this research, it specifically pertains to surgeries conducted within the abdominal region.

METHOD/STUDY DESIGN

Research Approach

Quantitative-evaluative research approach was in this proposed study.

Research Design

This proposed study employs a quasi-experimental approach, utilizing a pre-test and post-test control group design.

Research Setting

The research took place within the surgical wards and the surgical intensive care unit (ICU) at SDM College of Medical Sciences and Hospital in Dharwad.

Samples

Patients undergoing abdominal surgeries at Sri Dharmasthala Manjunatheshwara College of Nursing (SDMCMSH).

Sampling Technique

A non-probability purposive sampling method was employed to choose participants for this proposed investigation.

Sample Size

The selected subjects for the study consisted of 40 patients undergoing abdominal surgeries at SDMCMSH. 20 each in control group and experimental group.

CRITERIA FOR SAMPLE SELECTION

Inclusion Criteria

In the present study, the inclusion criteria were patients who were:

- Undergoing elective abdominal surgery.
- In the age group of 35 to 60 years.
- Willing to participate.
- Able to understand Kannada and English.

Exclusion Criteria

In the present study, the exclusion criteria were patients who:

- Have previously undergone a similar teaching programme.
- Are undergoing complex abdominal surgery.

- Are on ventilator support due to intra-operative complications.
- Have visual and hearing disability.

DESCRIPTION OF THE TOOL

Part I: Questions on socio-demographic proforma of the participants.

Part II: Semi-structured knowledge questionnaire on knowledge of post-operative exercises and complications of not performing post-operative exercises.

Part III: Observational checklist to assess the practice of post-operative exercises.

RELIABILITY OF THE TOOL

- The reliability of the tool for both knowledge questionnaire and observation checklist were established by using Test retest method (Karl Pearson's correlation coefficient method).
- The value for the knowledge questionnaire tool was found to be $r = 0.97$. Hence, the tool used for the above study was found to be reliable to conduct the main study.
- The value for the observational checklist was found to be $r = 0.94$. Hence the tool used for the above study was found to be reliable to conduct the main study.

PILOT STUDY

The preliminary investigation took place at SDM Hospital Dharwad, spanning from 08/03/2021 to 21/03/2021. A selection of 10 samples was made using non-probability purposive sampling. Written consent was secured from the chosen participants for their involvement in the study. Pre-test was administered to the samples and pre-observation of practice of post-operative exercises was done and the same day video-assisted teaching was given, and demonstration was conducted followed by post-test and post-observation of practice of post-operative exercises was done. The analysis of the pilot study data revealed that tool developed for the study was appropriate. It was revealed that the study was feasible, practicable, and reliable [17–22].

DATA COLLECTION METHOD

The primary research took place at SDM Hospital in Dharwad. The period of data collection is 6 weeks from 15/04/2021 to 30/05/2021 in SDM Hospital Dharwad. Formal permission was obtained from the authorities. Subjects are selected according to the selected criteria and the purpose of the study was explained to the subjects and assured the confidentiality of the sample. Participants gave their written agreement to be part of the study, chosen through a non-probability purposive sampling method. Subjects were classified into control group and experimental group on alternative number basis.

On the first day, pre-test was administered with semi-structured Knowledge Questionnaires and practice checklist. On the same day VATP was administered to the experimental group samples regarding post-operative exercises Following the surgery on Day 1, Day 3, Day 5 samples were assessed for practice of post-operative exercises in both Control group and Experimental group. On the Day 5 post-test on knowledge of post-operative exercise was conducted to both experimental and control group using the same tool [23–29].

The gathered data underwent analysis through both descriptive and inferential statistical methods, including the calculation of frequency percentages, mean, standard deviation, chi-square tests, paired "t" tests, and unpaired "t" tests.

RESULTS AND DISCUSSION

Section I: Frequency and percentage distribution of subjects according to the socio-demographic variables.

In aspects of age, in experimental group majority 10 (50%) were from 41 to 50 years, whereas in control group majority 8 (40%) were from below 40 years. In terms of gender, in experimental group both male and female were equal 10 (50%) and in control group majority 11 (55%) were males and 9

(45%) were females. In terms of religion, in experimental group majority 17 (85%) belonged to Hindu religion whereas in control group majority 13 (65%) belonged to Hindu religion. In terms of educational status, in the experimental group majority 11 (55%) had higher secondary education. In control group, majority 9 (45%) were degree holders.

In terms of occupational status, in the experimental group and control majority 7 (35%) were from private sector. In aspects of family income, in experimental group majority 10 (50%) had income ranged from 10000/- to 20000/- and in control group majority 7 (35%) had income ranged from 10000/- to 20000/-. In aspects of residential status, in experimental group majority 14 (70%) were from rural area and in control group were equally 10 (50%) from rural and urban region. In terms of dietary pattern, in the experimental group the majority 13 (65%) consumed a mixed diet whereas in control group majority 14 (70%) were having mixed diet. In terms of personal habits, in experimental group and control group majority 8 (40%) had no habits and in experimental group 5 (25%) had the habit of eating beetle nut, whereas in control group 4 (20%) had the habit of eating beetle nut and alcohol consumption.

Section II: Knowledge scores before and after tests on post-operative exercises among patients who have undergone abdominal surgery.

The pre-test results indicated that most of the subjects 14 (70%) in the control group and experimental group had moderate level of knowledge and remaining 6(30%) had inadequate level of knowledge regarding post-operative exercises.

The post-test results indicated that most of the subjects 19 (95%) in the control group and 1 (5%) had adequate knowledge. In the experimental group all the subjects 20 (100%) had adequate level of knowledge regarding post-operative exercises.

Section III: Pre-test and post-test practice scores regarding post-operative exercises among patients undergoing abdominal surgery.

The pre-test results indicates that majority of the subjects 14 (70%) in the control group had in poor practices and 5 (25%) had average practices and 1 (5%) had poor practices, whereas in the experimental group 11 (55%) had poor practices, 7 (35%) had average practices remaining and 2 (10%) had inadequate level of practice regarding post-operative exercises.

The post-test results indicates that majority of the subjects 10 (50%) in the control group had in poor practices and 8 (40%) had average practices and 2 (10%) had poor practices, whereas in the experimental group all the subjects 20 (100%) had good level practices of post-operative exercises.

Section IV: Comparison of pre-test and post-test knowledge and practice scores.

The mean pre-test score was 9.2 and post-test score was 16.6. The calculated value is higher than the table value that is -21.978. Thus, video-assisted teaching on knowledge of post-operative exercises among patients undergoing abdominal surgery are effective.

The mean pre-test score was 3.55 and post-test score was 8.85. The calculated value is higher than the table value that is -28.01. Thus, the video-assisted teaching on practice of post-operative exercises among patients undergoing abdominal surgery are effective.

Section V: Comparison of post-test knowledge and practice scores between the experimental group and control group.

The calculated value of knowledge scores was higher than the table value that is -28.01. Thus the video-assisted teaching on post-operative exercises among patients undergoing abdominal surgery is effective.

The calculated value of practice scores was higher than the table value that is -28.01. Thus the video-assisted teaching on post-operative exercises among patients undergoing abdominal surgery is effective.

Section VI: Association between pre-test knowledge scores and practice scores with their selected socio-demographic variables in experimental group and control group.

There was no association between the pre-interventional knowledge scores and socio-demographic variables regarding post-operative exercises among patients undergoing abdominal exercises in the control group.

There was no association between the pre-interventional knowledge scores and socio-demographic variables regarding post-operative exercises among patients undergoing abdominal exercises in the experimental group except the residential status.

There was no association between the pre-test practice scores and socio-demographic variables regarding post-operative exercises among patients undergoing abdominal exercises in the control group except the age.

There was no association between the pre-interventional practice scores and socio-demographic variables regarding post-operative exercises among patients undergoing abdominal exercises in the experimental group [30–36].

Limitations

- The study was limited to age group of 35–60 years.
- The study was limited to only 40 patients undergoing abdominal surgery.
- The study was limited to the study was limited only to the patients of SDM hospital, Dharwad.

Recommendations

Keeping in view the findings of the present study, the following recommendations were made:

- A similar study can be taken for larger samples for longer period would be more pertinent in making broad generalisation.
- A similar study can be done by using different teaching strategies.
- A similar study can be done on post-operative exercises among patients undergoing cardiac surgery.

CONCLUSION

The current study aimed to evaluate the impact of a video-assisted teaching programme on the knowledge and application of post-operative exercises among patients undergoing abdominal surgery at SDM Hospital in Dharwad. A group of 40 patients, who met the study requirements and were chosen using a non-probability purposive sampling method, participated in the research. The researcher utilized a semi-structured knowledge questionnaire and an observational checklist as tools to measure the effectiveness of the video-assisted teaching programme on the knowledge and practice of post-operative exercises in both the experimental and control groups. The findings of the study statistically proved that VATP on post-operative exercises designed by the investigator was highly effective.

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