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Effectiveness of self-care instructional module for patient undergoing open abdominal hysterectomy

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Abstract

The aim of this study was to assess the effect of self-care instructional module on self-care activities for patients undergoing open abdominal hysterectomy. Total 80 subjects were recruited, 40 each in experimental and control group. To all the 40 subjects of experimental group a copy of instructional module was handed over with detailed explanation of all the post-operative self-care instructions prior to their surgery. Any query asked by them was properly replied and while giving instructions it was taken care of that the patient as well as the attendant was present. To the control group no self-care instructional module was given and they received only routine care. Post-operative a checklist was completed by observation and asking questions if need be, to the patient. The Ethics Committee of Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh, India approved the study. As far as self-care activities were concerned a significant difference ($p < 0.001$) between the experimental and control group was observed on almost all the days of hospital. The findings of the study reflect that the self-care instructional module is an effective media to increase the performance of self-care activities, post abdominal hysterectomy and enhance the early recovery of the subjects.

Keywords: Abdominal hysterectomy, Self-care activities, Self-care instructional module

1. Introduction

Hysterectomy is a surgical procedure whereby the uterus (womb) is removed. (Dutta, 2004)^[1]. It is the second most frequently performed major surgical procedures on women all over the world, next only to cesarean. It is used commonly to improve the quality of life; however at times it is a life saving procedure. (R Sparic *et al.*, 2014)^[2].

In India no national statistics for hysterectomy is available but a study from northern state of India (Haryana) states that incidence of hysterectomy was 7% among married women above 15 years of age and another study from a western state (Gujarat) pointed out that 7-8% of rural women and 5% of urban women had already undergone hysterectomy at an average age of 37 years. Indications of hysterectomy vary from benign condition to malignancies of genital tract. In US, approximately 600,000 hysterectomies are performed each year. In the United Kingdom 100,000 procedures performed annually. Approximately 20% of women have had the procedure by the age of 60 years; about 40% are for dysfunctional uterine bleeding with no gynaecological pathology. (Pandey D *et al.*, 2014)^[14].

The main indications for hysterectomy, for the studies respectively: fibroid uterus 66.7% and 60%, menstrual disorders 13.8% and 27.2%, endometriosis 10.6% and 5%, and hyperplasia of the endometrium 3.9% and 5%. Approximately 90% of hysterectomies are performed for benign conditions, such as fibroids causing abnormal uterine bleeding. (Nieboer E *et al.*, 2009)^[15]. Cervical cancer is the second commonest cancer among women up to 65 years of age and is the most frequent cause of death from gynaecological cancers worldwide. (Bryant A *et al.*, 2015). Uterine atony was the most common indication for peripartum hysterectomy (42 of 101; 41.6 %). Placenta previa accreta, placenta accrete and placenta previa was the diagnosis in 23.8 %, 16.7% and 11.9% respectively. (Wook B *et al.*, 2003)^[17]. Hysterectomy can be adjuvant with chemotherapy as it could decrease the drug dosage necessary for complete destruction of the trophoblast. There was a tendency for drug resistance to be slightly lower in women who had adjuvant hysterectomy. (Matsui *et al.*, 2001)^[18].

For many women, the uterus is the symbol of femininity, sexuality, fertility, and maternity, and the loss of this organ is identified as the loss of womanhood. (Pinar G *et al.*, 2012) [3]. Many women believe that best days of their life will be over with hysterectomy, and perceive the operation as loss of the youth, femininity and health. With the removal of the uterus, women experience psychosocial problems such as feelings of weakness, fear of losing physical attractiveness and sexual identity, hopelessness and depression.

Among the nursing care goals to be planned for women who underwent hysterectomy raising the levels of self – esteem and addressing the lack of self care agency are important in order to ensure that the women gain back their independent self-care activities in the shortest time in the post operative period. Thus, patients may become less affected by the physiological and psychological effects of the surgery and participate in their self-care in the highest levels possible. (Cigdem G *et al.*, 2013) [5].

Keeping in view these facts this study was conducted with the aim to assess the effect of self care instructional module on self-care activities for patients undergoing open abdominal hysterectomy.

Material and methods

Study setting & data collection

This study was conducted from August to October 2015 in Gynae ward, Nehru hospital, PGIMER, Chandigarh, India. Total number of hysterectomies performed in 2015 at PGIMER, Chandigarh was 375. The sample was consisted of all eligible patients who were admitted for abdominal hysterectomy. Criteria for eligibility in the study were patients who were willing to participate and present during the data collection period. The exclusion criteria in the study were subjects undergoing emergency open abdominal hysterectomy and had operative injury during open abdominal hysterectomy. The sample consisted of 80 subjects, 40 subjects each in the experimental & control group. Participants were informed of the purposes and procedure of the study.

The study protocol was approved by the Institute Ethics Committee, PGIMER, Chandigarh, India (Reference No. NK/1877/M.Sc. NINE/294). The study was registered under CTRI acknowledgement number: REF/2016/03/011064.

Instructional module

A self care instructional module was designed for open abdominal hysterectomy consists of measures of day wise self care after abdominal hysterectomy like oral care, sponging body, change of clothes, wear loose clothes, position changed every two hourly, how to get up from bed post operatively, splinting while coughing or walking, wound care, care of urinary catheter, self voiding after urinary catheter removal, deep breathing, spirometry, active and passive exercises included shoulders, elbows, wrists, fingers and ankles exercises and self-care at home: instructions about diet, medication, personal hygiene, wound care, vaginal discharge, ambulation, exercises, climbing stairs, driving vehicle, sexual intercourse, resuming normal life and warning signs of infection in the form of instructions are given.

Data analyses

Descriptive and inferential statistics was used for analyzing the research results. Calculations were carried out using

Microsoft Excel and SPSS version 16.0 (Statistical Package for Science Program). The various measures used were:

- The frequency distribution, percentage, measures of central tendency: mean and standard deviation were used for the demographic details.
- The homogeneity of the subjects was assessed by applying Chi-square test.
- Self-care activities was assessed in both groups by applying Chi-square test.

Results

Socio-demographic characteristics of subjects are shown in Table 1 gives us the absolute figures of the frequency and the percentage of those frequencies with respect to the total number of subjects. The breakup of the total number for age, habitat, marital status, educational level, occupation, per capita income, type of family and religion is given both for the experimental and control groups. Mean age \pm standard deviation (SD) of the subjects was 48.67 ± 13.06 years in control group and 46.17 ± 11.1 years in experimental group. The value of Chi-square and the p value is also given. None of the p value is less than 0.05. Thereby, showing that that the experimental and control group are quite homogenous.

Table 2 infers the data collected about the clinical profile of the subjects. As far as co-morbidity was concerned 15 % of the control group as compare to 17.5% in the experimental group were diabetic. 10 % of the control group had hypertension while this percentage was 22.5 in the experimental group. Regarding complaints the subjects came along with was mostly menorrhagia and abdominal pain. Menorrhagia was the problem of 52.5% of the subjects in the control group whereas 60 percentage in the experimental group. 37.5% of subjects in control group had abdominal pain at the time of reporting whereas 30 % of the subject in the experimental group had abdominal pain. And these differences were not found to be statistically significant. Menstrual cycle, Body mass index (BMI) and family history of cancer after compilation has been presented in the table along with the values of Chi-square and p value.

Table 3 reveals self care activities in experimental group was highly significant ($p < 0.001$) on first day of post hysterectomy 3-4 consecutive days as compared to control group. Chi-square test was used to compare the difference in characteristics of subjects in experimental and control groups. All subjects i.e. 100% in experimental group done oral care (in form of rinsing mouth with mouthwash), sponging and change of clothes with assistance on Day 1 post abdominal hysterectomy as compared to control group i.e. 40% done oral care, 35.9% done sponging, 100% change their clothes. Similarly on day 2 and 3 post abdominal hysterectomy 100% subjects in experimental group started brushing independently thus oral care as compared to control group i.e. 2.5% on day 2 and 51.2% on day 3. All subjects i.e. 100% in experimental group started sponging of themselves as compared to control group i.e. 22.5% on day 2, 51.2% on day 3 and 34.4% on day 4 post abdominal hysterectomy. Maximum subjects i.e. 95% on day 1 and 94.9% on day 2 in experimental group braced incision while coughing or walking as compared to control group i.e. 5.2% on day 1 and day 2 post abdominal hysterectomy.

The data in Table 4 depicts majority of the subjects in experimental group were doing breathing and active passive exercises as instructions were given to them in the form of

self-care instructional module as compared to control group. Chi-square test was used to compare the difference in characteristics of subjects in experimental and control groups.

All subjects; 100% in experimental group performed breathing exercises by using spirometer on Day 1 post abdominal hysterectomy as compared to control group; 12.5% on day 1, 7.5% on day 2, 2.5% on day 3. All subjects in the experimental group had done deep breathing exercises as compare to control group; 40% on day 1, 35% on day 2, 30.7% on day 3, 24.1% on day 4 and 22.2% on day 5 post abdominal hysterectomy.

Spirometer was used by each subject of experimental group. Similarly significant difference found between active and passive exercises of shoulder, elbow, wrist, fingers and ankle were done by 100% experimental group as compared to control group; 45.0% on day 2, 64.1% on day 3 and 89.6% on day 4 for shoulder exercise; 80% for elbow, wrist and fingers and 85% for ankle exercise on day 1 post abdominal hysterectomy respectively.

As shown in table 5 the impact of instructional module is clearly visible from the fact that 95% of the experimental group subjects did self voiding in less than one hour duration whereas this figure for the control group is 33.3% and this difference has been found to be statistically highly

significant. Regarding hospital stay also the difference between experimental and control group is quite significant because as shown in the table 85% left the hospital in less than five days whereas this percentage for the control group is 28.6.

Average stay of the subjects in the experimental group and control group, in the hospital has been calculated and is presented in table 6. The subjects of the experimental group stayed in the hospital on an average for 4.17 ± 1.50 days and 5.17 ± 1.12 in the control group respectively. On applying the Student's t-test the p value has been found to be 0.001 showing thereby that the average stay of the control group was significantly more than the average stay of experimental group.

This clearly shows that the recovery of the subjects in the experimental group was faster than the other group. From the research angle it is felt that this was due to the impact of the instructions contained in the self care instructional module after abdominal hysterectomy.

Therefore, it clearly indicates that self care instructional module enhance the post operative recovery of the abdominal hysterectomy patient and this can indirectly helps in reducing the hospital stay and cost of hospitalization. It can also be practiced safely in hospital setting for the benefit of patients and health care team members.

Table 1: Socio demographic profile of the subjects undergone abdominal hysterectomy (N=80)

Variables	Experimental Group n ₁ =40 (%)	Control Group n ₂ =40 (%)	χ ² (df) p value
Age*§			
• 21-40	10 (25.0)	11 (27.5)	5.00(2) 0.41
• 41-60	24 (60.0)	21 (52.5)	
• >60	6 (15.0)	8 (20.0)	
Habitat			
• Rural	28 (70.0)	21 (52.5)	2.5(1) 0.10
• Urban	12 (30.0)	19 (47.5)	
Marital status			
• Married	35 (87.5)	29 (72.5)	4.2(1) 0.23
• Others**	5 (12.5)	11 (27.5)	
Education			
• Primary	3 (7.5)	6 (15.0)	6.6 [#] (3) 0.15
• upto 10th	15 (37.5)	17 (42.5)	
• Secondary	14 (35.0)	5 (12.5)	
• Graduate & above	8 (20.0)	12 (30.0)	
Occupation			
• Housewife	39 (97.5)	32 (80.0)	6.4 [#] (1) 0.26
• Employee	1 (2.5)	8 (20.0)	
Per capita income (Rs.)			
• <800	3 (7.5)	6 (15.0)	6.6 [#] (4) 0.15
• 801-1500	15 (37.5)	17 (42.5)	
• 1501-2500	14 (35.0)	5 (12.5)	
• 2501-5500	7 (17.5)	9 (22.5)	
• >5500	1 (2.5)	3 (7.5)	
Type of family			
• Joint	28 (70.0)	31 (77.5)	0.58(1) 0.44
• Nuclear	12 (30.0)	9 (22.5)	
Religion			
• Hindu	23 (57.5)	30 (75.0)	3.9(1) 0.14
• Non Hindu***	17 (42.5)	10 (25.0)	

*Mean ±S.D. of control group=48.67+13.06

**Others=Widow, Divorced.

***Non Hindu= Sikh, Musli

§Mean± S.D. of experimental group=46.17+11.1

#=Fisher's exact test

Table 2: Clinical profile of subjects undergone abdominal hysterectomy (N=80)

Parameter	Experimental Group n ₁ =40 (%)	Control Group n ₂ =40 (%)	χ ² (df) p value
Co-morbidity			
• Diabetes	7 (17.5)	6 (15.0)	2.67(2) 0.26
• Hypertension	9 (22.5)	4 (10.0)	
• No co-morbidity	24 (60.0)	30 (75.0)	
Chief complaint on admission			
• Menorrhagia	24 (60.0)	21(52.5)15 (37.5) 4 (10.0)	5.14# (2) 0.52
• Abdominal pain	12 (30.0)		
• Presence of mass in abdomen	4 (10.0)		
Menstrual Cycle			
• Regular	20 (50.0)	18 (45.0)	0.20(1) 0.66
• Irregular	20 (50.0)	22 (55.0)	
Family history of cancer			
• Yes	11 (27.5)	7 (17.5)	1.14 (1) 0.28
• No	29 (72.5)	33 (82.5)	

#=Fisher's exact test,

*Others neoplastic condition= Germ cell tumour & gestational trophoblastic disease

Table 3: Self-care activities of subjects post abdominal hysterectomy (N=80)

Self-care activities	Groups n*=E/C	Day 1 n =40/40	Day 2 n =39/40	Day 3 n =25/39	Day 4 n =11/29	Day 5 n =6/18	Day 6 n =4/9	Day 7 n =3/6	Day 8 n =3/5
Oral care (D ₁ =with assistance) (D ₂₋₈ =without assistance)	Experimental n ₁ (%)	40 (100)	39 (100)	25 (100)	11 (100)	6 (100)	4 (100)	3 (100)	3 (100)
	Control n ₂ (%)	16 (40.0)	1 (2.5)	20 (51.2)	29 (100)	18 (100)	9 (100)	6 (100)	5 (100)
	χ ² (df) p value	34.2(1) <0.001	74.1#(1) <0.001	16.5(1) <0.001	-	-	-	-	-
Sponging (D ₁ =with assistance) (D ₂₋₈ =without assistance)	Experimental n ₁ (%)	40 (100)	39 (100)	25 (100)	11 (100)	6 (100)	4 (100)	3 (100)	3 (100)
	Control n ₂ (%)	14 (35.0)	9 (22.5)	20 (51.2)	10 (34.4)	18 (100)	9 (100)	6 (100)	5 (100)
	χ ² (df) p value	37.5(1) <0.001	48.7(1) <0.001	16.5(1) <0.001	13.1(1) <0.001	-	-	-	-
Clothes changed (D ₁ =with assistance) (D ₂₋₈ =without assistance)	Experimental n ₁ (%)	40 (100)	39 (100)	25 (100)	9 (81.8)	6 (100)	4 (100)	3 (100)	3 (100)
	Control n ₂ (%)	40 (100)	27 (67.5)	25(64.1)	20 (68.9)	18 (100)	0	6 (100)	0
	χ ² (df) p value	-	14.1(1) <0.001	10.7(1) 0.001	0.4(1) 0.50	-	-	-	-
Braced incision while coughing or walking	Experimental n ₁ (%)	38 (95.0)	37 (94.9)	23 (92.0)	9 (81.8)	4 (66.7)	2 (50)	2 (66.7)	2 (66.7)
	Control n ₂ (%)	2 (5.0)	2 (5.0)	0	0	0	0	0	0
	χ ² (df) p value	67.5# (2) <0.001	66.5# (2) <0.001	-	-	-	-	-	-
Position changed (2 hrly)	Experimental n ₁ (%)	40 (100)	39 (100)	25 (100)	11 (100)	6 (100)	4 (100)	3 (100)	3 (100)
	Control n ₂ (%)	16 (40.0)	27 (67.5)	20 (51.2)	29 (100)	18 (100)	9 (100)	6 (100)	5 (100)
	χ ² (df) p value	34.2(1) <0.001	14.5(1) <0.001	16.5(1) <0.001	-	-	-	-	-

n*=no. of subjects, E=experimental group, C=Control group

#=Fisher's exact test

Table 4: Performance in active and passive exercises of subjects post abdominal hysterectomy (N=80)

Exercises	Groups n*=E/C	Day 1 n =40/40	Day 2 n =39/40	Day 3 n =25/39	Day 4 n =11/29	Day 5 n =6/18	Day 6 n =4/9	Day 7 n =3/6	Day 8 n =3/5
Breathing exercises									
Using Spirometer	Experimental n (%)	40 (100)	39(100)	25(100)	11(100)	6(100)	4(100)	3(100)	3(100)
	Control n (%)	5(12.5)	3(7.5)	1(2.5)	0	0	0	0	0
	χ ² (df) P value	62.2(1) <0.001	68.8(1) <0.001	72.4(1) <0.001	-	-	-	-	-
Deep breathing	Experimental n (%)	40(100)	39(100)	25(100)	11(100)	6(100)	4(100)	3(100)	3(100)
	Control n (%)	16(40.0)	14(35.0)	12(30.7)	7(24.1)	4(22.2)	4(44.4)	2(33.3)	2(40.0)
	χ ² (df) P value	34.2(1) <0.001	38.7(1) <0.001	43.8(1) <0.001	33.1(1) <0.001	15.5(1) <0.001	5.37(1) 0.06	4.32(1) 0.11	3.25(1) 0.19
Active and passive exercises									
Shoulder	Experimental n (%)	40(100)	39(100)	25(100)	11(100)	6(100)	4(100)	3(100)	3(100)
	Control n (%)	-	18(45.0)	25(64.1)	26(89.6)	18(100)	9(100)	6(100)	5(100)
	χ ² (df) P value	-	30.7(1) <0.001	26.2(1) <0.001	17.1(1) <0.001	-	-	-	-
Elbow	Experimental n (%)	40(100)	39(100)	25(100)	11(100)	6(100)	4(100)	3(100)	3(100)
	Control n (%)	32(80.0)	40(100)	39(100)	29(100)	18(100)	9(100)	6(100)	5(100)
	χ ² (df) P value	8.8(1) 0.003	-	-	-	-	-	-	-
Wrist	Experimental n (%)	40(100)	39(100)	25(100)	11(100)	6(100)	4(100)	3(100)	3(100)
	Control n (%)	32(80.0)	38(95.0)	39(100)	29(100)	18(100)	9(100)	6(100)	5(100)
	χ ² (df) P value	8.8(1) 0.003	3.01(1) 0.22	-	-	-	-	-	-

Fingers	Experimental n (%)	40(100)	39(100)	25(100)	11(100)	6(100)	4(100)	3(100)	3(100)
	Control n (%)	32(80.0)	38(95.0)	39(100)	29(100)	18(100)	9(100)	6(100)	5(100)
	χ^2 (df) P value	8.8(1) 0.003	3.01(1) 0.22	-	-	-	-	-	-
Ankle	Experimental n (%)	40(100)	39(100)	25(100)	11(100)	6(100)	4(100)	3(100)	3(100)
	Control n (%)	34(85.0)	38(95.0)	39(100)	29(100)	18(100)	9(100)	6(100)	5(100)
	χ^2 (df) P value	6.48(1) 0.01	3.01(1) 0.22	-	-	-	-	-	-

n*=no. of subjects, E=experimental group, C=Control group

#=Fisher’s exact test

Table 5: Recovery outcome (Self voiding & Hospital stay) of study subjects N=80

Variables	Groups		χ^2 (df) p value
Self-voiding after removal of urinary catheter	Experimental n ₁ =40 (%)	Control n ₂ =40 (%)	
≤ 1hour	38 (95.0)	13 (33.3)	33.8 # (1) <0.001
1 to ≤2 hour	2 (5.0)	27 (67.7)	
Hospital stay			
< 5 days	29 (85.0)	11@ (28.6)	19.7(1) <0.001
5-8 days	11 (15.0)	24@ (71.4)	

#=Fisher’s exact test

@=The total subjects in n₂ hospital stay is 35 due to the reason that five patients discharged from hospital after D_s

Table 6: Mean hospital stay of study subjects N=80

Groups	Mean	Standard deviation	Range	t test p value
Experimental n ₁ =40	4.17	1.500	2-8	3.22
Control n ₂ =40	5.17	1.124	3-8	

Discussion

In the present study, we found that self care instructional module regarding self care activities did increase the recovery compliance of the experimental group in each component of self-care activities.

Previous studies showed that a positive significant relationship was found between self-esteem and self-care agency levels (p <0.01). The mean self-esteem score of the women was found to be 59.93±7.03 and 80.31±8.78 for self-care agency (Cigdem G *et al*; 2013) [5]. Self-care activities as oral care, sponging, daily change of clothes, bracing the incision, ambulation, breathing and active passive exercises were taught to them in the present study via self-care instructional module given to experimental group and a statistically significant difference was found between the two groups. Subjects gaining confidence in doing their self-care and it raises the self-esteem. But in the present study self-esteem has not been measured.

Impact of preoperative education in the form of self care instructional module on postoperative recovery is consistent with a previous study (Oshodi O T, 2007) [6].

It has been reported that care of people prior to their surgical procedure as successful postoperative outcomes usually dependent upon effective preoperative care. The ultimate aim of preoperative care is to facilitate a safe and speedy recovery. It must include caring for the person from a bio psychosocial perspective, providing information, offering support and reassurance, preventing potential complications and easing anxiety and fear. The surgical experience instill fear, anxiety and a feeling of dread. The health care assistant and assistant practitioner need to understand the various elements of care provision in order to offer care that is safe and patient centered. Preoperative teaching includes deep breathing exercises, an incentive spirometer can enhance deep breathing, leg exercises were taught, teaching splinting or bracing to supporting incision when coughing are important, non pharmacological approaches to reduce anxiety includes visualization or deep breathing.

In the present study satisfaction of the subjects with their handed booklet on self care instructional module post

surgery was 82.5% in the experimental group and 42.5% in the control group who received only routine care. As showed in the previous study that the three most favourite teaching methods were oral explanation (91.9%), pamphlets (76.7%) and oral explanation with pictures (76.7%). Nurses’ time availability, language barriers, tight operation schedules and daily workload in the clinical setting were perceived as top factors affecting the provision of preoperative teaching. Previous studies showed that psychological preparation for surgery and pre-operative information help to reduce length of stay in hospital, decrease anxiety and increase patient satisfaction. Knowledge about self-care activities is essential as a pre-requisite for compliance. Greater compliance and early recovery have been reported in the studies when knowledge and information is increased (Garretson S, 2004) [8].

Previous studies showed that the implementation of a fast track program resulted to decreased incidence of postoperative ileus and decreased hospital length of stay (Cynthia W Ward *et al*; 2012) [9]. Printed materials were used to improve patient education, instruct patients and families about ambulation and self-care expectations includes leg exercises, incentive spirometry, deep breathing, splinting incision and involve family members in assisting patients to set goals for ambulation and activity. The study findings suggested that the incidence of documented ileus decreased from seven patients to four, a difference of 43%. Length of stay of fast track patients on the surgical unit was decreased by 1.352 days. The patient was up in the chair and the time to the indwelling urinary catheter removal were significantly different in the fast track group as compared to the traditional care group (p < 0.05). In the present, study similar results were obtained when self care instructional module was given to one group to enhance the post operative recovery outcomes such as mean duration of stay in hospital was found to be 4.17 ±1.50 in experimental group and 5.17 ±1.12 in control group.

This study has several limitations. First, the measurement of outcome variables was subjective. Second, the duration of the data collection period was limited; therefore

generalization cannot be made from the findings out of the small study sample.

In conclusion, self-care instructional module is an effective media to strengthen the self-care abilities, enhance the post-operative recovery outcome and lessen the hospital stay of the subjects as information about self-care activities is a pre requisite to compliance.

Conflict of Interests

The authors have not declared any conflict of interests.

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