Effect of Discharge Training Program on Patient Outcomes Following Oncology Surgery

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Abstract

Background: Preparing patients post oncology surgery to manage their care at home enhances patient safety, decreases the frequency of unnecessary emergency center visits and unplanned readmissions, and improves patient satisfaction **Aim:** Assess the effect of a structured discharge training program on patient outcomes following oncology surgery **Methodology: Research design:** A quasi experimental research design one group pre/posttest was utilized in November 2020 - March 2021. **Setting:** oncology hospital menofiya university hospital **Subject:** Convenience sample of patients exposed to oncology surgery (50 patients). **Tools of data collection**: Researcher used four tools as patient's characteristics, functional assessment of cancer therapy- general, coping and adaptation processing scale and Rosenberg self-esteem scale **Results:** presented that 48%, 50%, 56%, and 46% of the participants had low physical, social, emotional, and functional well-being before the study intervention, respectively. Compared to 14%, 18%, 28%, and 16% after implementation of the discharge training program. The total high coping and adaptation processing before the discharge training program implementation was 20%, compared with 42% after the implementation with a highly statistically significant difference at p <0.01 **Conclusions:** the discharge training program significantly improved and empowered the patients to have a greater sense of control over their illness, coping & adaptation, self-esteem and improve their quality of life. **Recommendation:** Replication of the study on a large sample and the different settings is recommended for generalization on large scale

Keywords: Discharge training program, patient outcome, oncology surgery.

Introduction

Cancer is the most common health problem in communities all around the world. Cancer is one of the leading causes of illness and death worldwide. About 14.1 million new cancer patients were diagnosed, and 8.2 million people died as a result of cancer. By 2030, this is expected to have increased by at least 70% **(Nayak et al., 2017)**. Patients with cancer encounter a particular collection of age-related changes, comorbidities, and conditions that have a negative influence on their quality of Life (QoL) **(Scotté at al., 2018)**. After cancer surgery, patients are more likely to experience psychological discomfort and have a worse health-related quality of life (HRQoL) **(Liu at al., 2021)**.

The term "QoL" refers to a person's subjective well-being, which is measured by how satisfied or dissatisfied they are with various aspects of their lives. Health and functioning, financial level, psychological and spiritual well-being, and familial support are all elements that influence life satisfaction **(Albuquerque, 2018)**. It is critical to consider the function of HRQOL in cancer survivorship. The term "survivorship" refers to a wide notion that encompasses quality of life as well as cancer survival. Cancer survivorship encompasses survivors' physical, emotional, and financial circumstances following cancer diagnosis and treatment, and it must emphasize health and life after cancer diagnosis and treatment **(Shin, 2017)**.

Enhanced recovery after surgery (EROS) is a multimodal pre- and post-operative strategy that seeks to speed up hospital release and recovery. It is a regimen that many surgical specialties have used, and it's based on the idea that reducing physiological and physical stress on the body before, during, and after surgery might improve post-operative recovery **(Duncan et al., 2017; Thangavel et al., 2021)**. Oncologists have consistently demonstrated that using peri-operative improved recovery

pathways improves surgical recovery, reduces complications, and lowers healthcare expenditures **(Chen et al., 2021)**. Discharge planning is the creation of a unique plan that focuses on enhancing the quality of discharge patients' compliance, education/counseling, and systematic follow-up while taking into account each patient's physical, psychological, and spiritual requirements **(Abd Elaty at al., 2021)**.

As a result, the discharge nursing plan is a continuous process that begins early in the hospitalization and continues after discharge, with the goal of reducing hospital readmissions and contributing to clinical stability by improving patients' knowledge and promoting self-care capabilities to improve their self-care maintenance, management, and confidence in managing their condition **(Abd Elaty at al., 2021)**.

Significant of study:

Nowadays, early discharge allows patients to recover at their homes after gynecologic oncology surgery. However, the care-related needs of patients continue at home, patient and their family become responsible for man- aging this process of providing care **(Manne et al., 2015).** After gynecologic oncology surgery and during adjuvant therapies, women may suffer from physical problems such as fatigue, pain, wound infection, nausea, anorexia, and urinary system problems. Plans for discharge Reduce the negative impact of disease and invasive procedures on patients, families, and health-care systems, as well as unexpected hospitalization and readmission **(Chaparro-Diaz et al., 2021)**. Therefor this study aimed to assess the effect of a structured discharge training program on patient outcomes following oncology surgery.

Aims

Aim: Assess effect of a structured discharge training program on patient outcomes following oncology surgery, through:

-Assess the quality of life, coping-adaptation level and self-esteem level of patient following oncology surgery before discharge training program.

- Implement structured discharge training program for patient following oncology surgery

- Evaluate effect of discharge training program on quality of life, coping-adaptation level and self-esteem level of patients following oncology surgery.

Research hypothesis:

H1: Implementation discharge training program would have positive effect on quality of life, coping-adaptation and self-esteem level of patients following oncology surgery

Methods:

Research design: A quasi experimental (one group pre/posttest) research design was utilized in November 2020 - March 2021

Research Setting: The study was carried out at outpatient clinic at oncology hospital menofiya university hospital

Sample size:

The sample size calculated based on a study carried out by **Culha et al., (2020).** By estimating an effect size 0.51, based on the mean FACT-G scores pre intervention 43.33±4.47 and post intervention 48.53 ± 4.28 and statistical power of 90%, level of confidence (1-Alpha Error): 95%, Alpha 0.05, Beta 0.1. The sample size determines at group 45 patients. Considering 10% sample attrition (5 patients), the final sample size in group is 50 patients. Sample size calculates using test comparing two means through **Kane SP. Sample Size Calculator. ClinCalc (Rosner, 2011)**

Subjects: Convenience sample of patients exposed to oncology surgery from outpatient clinic post-surgery at previous mentioned setting (50 patients) and enthusiastic to participate at the study regardless age, gender, educational level and monthly income.

The instruments:

Study instrument included four parts:

Tool I: Interview questionnaire which prepared by researcher includes patient's characteristics of the patients such as age, gender, education level, marital status, income, residence.

Tool II: Functional Assessment of Cancer Therapy- General (FACT-G): FACT-G was developed by Cella et al. (1993). The scale consisted of 27 items divided on four domains (physical well-being, social well-being, emotional well-being, and functional wellbeing) (Tekbas, 2014).

Each item is scored ranged from 0, 1, 2, 3, 4 for strongly disagree, disagree, sometimes, agree and strongly agree for positive items and vice versa for negative items. Higher scores indicate a higher quality of life (Manne et al., 2015). High quality if score >70%, moderate if score 50% to 70% and low if score <50%.

Tool III: Coping and Adaptation Processing Scale (CAPS): CAPS was developed by Roy et al., (2016). This scale consisted of 47 items divided on five domains (resourceful and focused, physical and fixed, alert processing, systematic processing, and knowing and relating).

Each item is scored ranged from 0, 1, 2, 3, 4 for strongly disagree, disagree, sometimes, agree and strongly agree for positive items and vice versa for negative items. High coping if score >70%, moderate if score 50% to 70% and low if score <50%.

Tool IV: Rosenberg Self-Esteem Scale (RSES): RSES was developed by Rosenberg (1965). It consisted of ten items belong to the self-esteem. Each item score ranged from 0, 1, 2, 3, 4 for strongly disagree, disagree, sometimes, agree and strongly agree for positive items and vice versa for negative items. Higher scores indicated a higher self-esteem.

Field work:

A review of recent national and international related literature using journals, periodicals, textbooks, internet, and theoretical knowledge of the various aspects concerning the topic of the study. Preparation and implementation the study was carried out over a period of five months from beginning of November 2020 - March 2021. The investigators prepared the tools and translated them into Arabic form to become ready for use. The investigator distributed the data collection forms with instructions about how to fill them. The time required to interview the patients to fill the sheet was from 30 to 40 minutes. The filled forms were collected in time and revised to check their completeness to avoid any missing data.

Delivery of educational training program:

Assessment Phase

Before training the researchers assessed the needs of the studied teachers. The researcher clarified the aim of the study and components of the tools. The educational program was prepared and designed according to the patients' level of quality life, coping & adaptation and self-esteem at pre assessment.

Intervention and Evaluation Phase

The patients were distributed into five groups, each one included ten patients and inform each patient with his group. Each group educated for five sessions each session about 45 minutes in the form of seminar, asking open questions with researchers and studied teachers were provided with literature. Researcher used innovative learning methods as PowerPoint with attractive colors and illustration photo, colored Leaflets, simulation, reflective thinking.

1st session: The researchers introduced the studied patients to each other. Researchers informed studied patients about the aim of study, structure and training method of the sessions. The expectations of studied patients about training session were well-known and interview the patients to filling the data.

2ndsession: Pain, wound care, respiration, nutrition and fluid management, fatigue, activity, bleeding monitoring, reproductive organ cleaning/care, bathing, medication was clarified and debated.

3rdsession: The studied patients were informed about Stress, emotions, menopause, sexual life, social support, sharing of family roles and household chores, family– environment relations and health controls

4thsession: Discussing the problems experienced after discharge and ways of coping mechanism and adaptation process was educated to the studied patients

5th session: The researcher allow to the studied patients to ask questions and give feedback about the educational program, also interview the patients post intervention to complete the tool. The sessions ended after researchers responded to the patients' questions.

Pilot Study:

The pilot study was conducted with 5 patients who representing 10% of total sample at the previously mentioned settings in order to test the applicability of the constructed tools and the clarity of the included tools. Also, to assess the reliability and validity of developing tool before using at the study. The pilot also served to estimate the time needed for each subject to fill in the tool.

Reliability and validity:

A group of five experts in the critical and medical/surgical nursing ascertained the content's validity; their opinions were elicited regarding the format, layout, consistency, accuracy, and relevancy of the tools. Reliability testing was carried out to test the reliability in terms of Cronbach's Alpha for functional assessment of cancer therapy tool was 0.869, coping and adaptation processing scale was 0.886 and Rosenberg self-esteem scale was 0.903.

Data collected from the studied sample was revised, coded, and entered using Personal Computer (PC). Computerized data entry and statistical analysis were fulfilled using the Statistical Package for Social Sciences (SPSS) version 24. Data were presented using descriptive statistics in the form of number and percent. A t-test is a type of inferential statistic used to determine if there is a significant difference between the means of two groups, which may be related in certain features. Chi-square ($\chi 2$) statistic is a test that measures how expectations compare to actual observed data

Ethical consideration:

The research ethics committee revised and approved the study. The submission of the answer to the questionnaire was considered as consent to take part in the study. Confidentiality of the study subjects' data was sustained throughout the study by making the students' data nameless.

Results:

Out of 50 patients, (40 %) were in the age group 30 – <40 years, the mean age of participants was 32.50±3.0, (58%) were females, and (36%) of them had bachelor's degree of education. Less than three quarters (74%) of them were unmarried, (74%) had insufficient monthly income, (58%) were urban resident **(Table 1)**.

Table 2 presented that 48%, 50%, 56%, and 46% of the participants have low physical, social, emotional, and functional well-being before the study intervention, respectively. Compared to 14%, 18%, 28%, and 16% after implementation of the discharge training program, respectively, with a highly statistically differences at $p<0.01$ for all.

Figure 1 revealed that the total high-quality life of oncology participant patients before the discharge training program implementation was 12%, compared with 28% after the implementation, with a highly statistically differences at $p<0.01$ for all.

Table 3 revealed that regarding to coping and adaptation processing scale, among of a total participant 24%, 20%, 18%, 22% and 16% of them have high adaptation and coping skills regarding resourceful and focused, physical and fixed, altering process, systematic processing, and knowing and relating, respectively before the implementation of discharge training program, which was markedly changed to become 38%, 44%, 46%, 50%, and 44% post-implementation of the training program, respectively with a highly statistically significant difference at $p<0.01$for all.

Figure 2 demonstrated that the total high coping and adaptation processing before the discharge training program implementation was 20%, compared with 42% after the implementation with a highly statistically significant difference at $p<0.01$.

Moreover, regarding the Rosenberg self-esteem scale, **Table 4** illustrated that the total self-esteem of the studied participant significantly increased from 20.40±3.99 before the discharge training program implementation, compared with 42.80±10.12 after the implementation with a highly statistically significant difference at $p<0.01$.

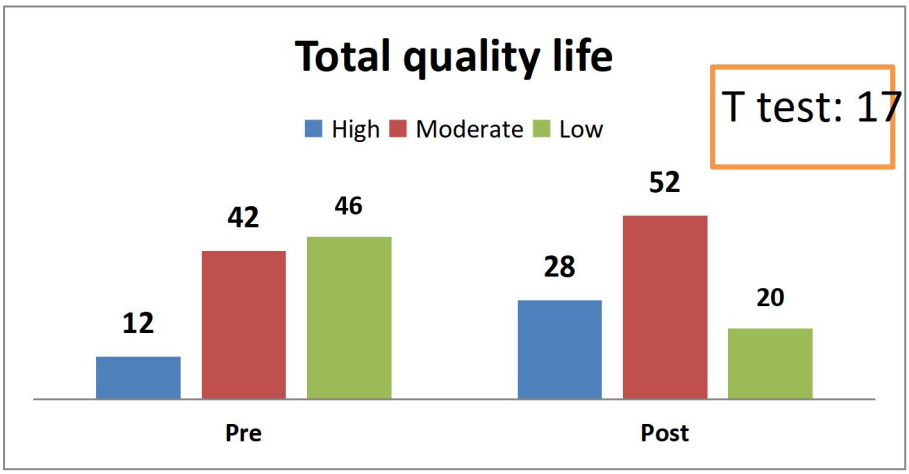
Table (1): *Sociodemographic characteristics of patients (n=50).*

Items		n	%
Age			
20 - <30			
30 - <40		17	34
40 – 50		20	40
Mean (SD)	32.50±3.02	13	26
Gender			
Male		21	42
Female		29	58
Educational level			
Not read and write		9	18
Read and write.		8	16
Primary		8	16
Secondary		7	14
Bachelor		18	36
Marital status			
Married		13	26
Unmarried		37	74
Monthly income			
Sufficient		16	32
Insufficient		34	68
Residence			
Rural		21	42
Urban		29	58

Table (2): Distribution of studied patients related quality of life at pre and post intervention (n=50)

Items	Pre						Post						T test P value
	High		Moderate		Low		High		Moderate		Low		
	n	%	n	%	n	%	n	%	n	%	n	%	
Physical wellbeing	7	14	19	38	24	48	16	32	27	54	7	14	9.564 <0.01**
Social wellbeing	5	10	20	40	25	50	15	30	26	52	9	18	11.052 <0.01**
Emotional wellbeing	4	8	18	36	28	56	11	22	25	50	14	28	10.611 <0.01**
Functional wellbeing	5	10	22	44	23	46	14	28	28	56	8	16	9.883 <0.01**

high significant <0.01



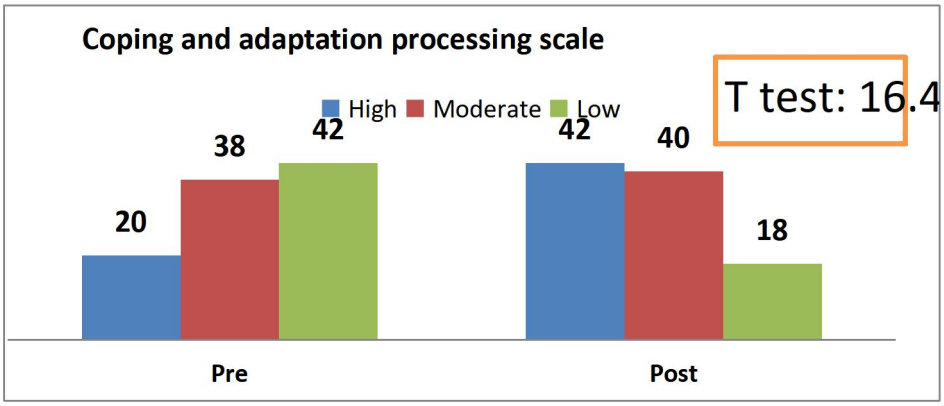
high significant <0.01

Figure (1): Distribution of studied patients related total functional assessment of cancer therapy-general at pre and post intervention (n=50)

Table (3): Distribution of studied patients related coping and adaptation processing scale at pre and post intervention (n=50)

Items	Pre						Post						Chi-square P value
	High		Moderate		Low		High		Moderate		Low		
	n	%	n	%	n	%	n	%	n	%	n	%	
Resourceful and focused	12	24	16	32	22	44	19	38	24	48	7	14	10.474 <0.01**
Physical and fixed	10	20	21	42	19	38	22	44	22	44	6	12	9.862 <0.01**
Alert processing	9	18	21	42	20	40	23	46	19	38	8	16	12.004 <0.01**
Systematic processing	11	22	18	36	21	42	25	50	20	40	5	10	10.699 <0.01**
Knowing and relating	8	16	20	40	22	44	22	44	20	40	8	16	11.025 <0.01**

high significant <0.01



high significant <0.01

Figure (2): Distribution of studied patients related total coping and adaptation processing scale at pre and post intervention (n=50)

Table (4): Mean, and SD of studied patients related Rosenberg self-esteem scale at pre and post intervention (n=50)

Items	Pre Mean SD	Post Mean SD	T test P value
I feel that I am a person of worth, at least on an equal plane with others	2.14±0.57	4.11±1.02	9.174 <0.01**
I feel that I have a number of good qualities.	2.08±0.44	4.23±1.14	10.760 <0.01**
I am inclined to feel that I am a failure	1.99±0.35	4.52±1.30	11.046 <0.01**
I am able to do things as well as most other people	1.87±0.28	4.07±1.10	9.864 <0.01**
I do not have much to be proud of.	2.34±0.61	4.45±1.60	10.700 <0.01**
I take a positive attitude toward myself	2.00±0.47	3.99±1.05	11.368 <0.01**
On the whole, I am satisfied with myself	1.63±0.29	4.25±1.41	10.071 <0.01**
I certainly feel useless at times.	1.98±0.41	4.39±1.09	12.088 <0.01**
I wish I had more respect for myself	2.01±0.59	4.71±1.17	9.600 <0.01**
At times I think I am no good at all	2.36±0.34	4.08±1.00	8.101 <0.01**
Total self esteem	20.40±3.99	42.80±10.12	16.103 <0.01**

high significant <0.01

Discussion

Cancer is currently the biggest cause of mortality. These individuals require advice throughout their therapy in order to improve their quality of life and reduce psychiatric issues. The study's goal was to assess effect of a structured discharge training program on patient outcomes following oncology surgery

Findings from this study regarding the socio-demographic profile of the studied sample revealed that more than one-third were in the age group 30 – <40 years, more than half of them were females, and more than one-third of them had bachelor's degrees of education. More than two-thirds were unmarried and had insufficient monthly income, moreover, more than half of them were urban residents. A contrary demographic profile demonstrated by **Periasamy et al., (2017)**, that with regards to educational level, more than half of them were diploma or less and one quarter were illiterate. Additionally, the average age of the respondents was 65 years. The participants' characteristics according to **Stomski et al., (2018)** also uncoordinated with the current study findings as it revealed that almost three-quarters of the participants were female, the mean age was 55.3 years.

Significantly, the current study presented that there were highly statistically significant differences between physical, social, emotional, and functional well-being of patients before and after discharge training program implementation at p <0.01. Furthermore, the total high QoL of oncology participant patients significantly increased from the minority before, compared to more than one quarter after the implementation. These results attributed to effective of training program which prepared dependent on needs of patients through assessing pre intervention.

Similar findings reported by **Periasamy et al., (2017)**, In assessing the impact of the chemotherapy counseling module, revealed that the module along with repetitive counseling showed significant improvement of QoL in the intervention group as compared to the control group with a large effect size in physical health (p = 0.001), psychological (p = 0.001), social relationships (p = 0.001), and decrease in the anxiety (p = 0.000), depression (p = 0.000). Moreover, **Stomski et al., (2018)** showed that in total, 1376 cancer patients participated their study. The linear mixed models demonstrated that there were significant improvements in quality of life and significant reductions in symptom distress over six sessions.

The data demonstrated by **Nayak et al., (2017)** also showed that most of the participants felt that they were physically performing very less, 95.25% of them were not at all confident about managing their financial needs at any situation, and 92.7% were not getting support from friends and relatives. the participants' psychological well-being was affected by feeling very much depressed among 54.4% and the majority (98.3%), were not at all comfortable in attending the social functions. The general well-being was very low for 96.1% participants. Out of them, 72.3% had very low physical well-being, 53.5% reported very low psychological well-being, and 66.5% reported an average familial relationship. The majority, 93.6%, reported low economic well-being.

Increased levels of perceived stress are frequently associated with cancer-related stresses, which have the potential to significantly impair patients' psychological and physiological well-being and, as a result, affect their QoL.

Whereas the present study clarified that there were highly statistically differences between coping and adaptation processing skills before and after discharge training program implementation at p <0.01. Moreover, the current study findings proved that the total self-esteem of the studied participant significantly increased from 20.40±3.99 before the discharge training program implementation, compared with 42.80±10.12 after the implementation with a highly statistically significant difference at p <0.01. These results may due to using illustrative methods by researcher during education program as slide show and attractive photo, using easy key wards and avoid use medical terminology.

Culha et al., (2020) in a nonrandomized intervention study entitled "Investigating the Effect of a Structured Discharge Training Program on Patient Outcomes Following Gynecologic Oncology Surgery" revealed that, the mean coping-adaptation scores of the intervention group on the 9th and 13th weeks were significantly higher than that at the control group (p < .001). However, in the intervention group, there was a strong positive correlation between

physical well-being subdimension and coping-adaptation ($p < .01$), whereas a moderate positive correlation was found between social well-being subdimension and coping-adaptation ($p < .05$). Moreover, the mean self-esteem scores of the women in both groups at different follow-up periods were similar ($p > .05$), both groups had moderate self-esteem at different follow-up periods.

Similarly, the findings of a randomized control trail carried by **Tabrizi and Alizadeh, (2018)**, entitled "Family intervention based on the FOCUS program effects on cancer coping in Iranian breast cancer patients" revealed a significant improvement in total cancer coping scores, in all subscales including individual, positive focus, coping, diversion, planning and in interpersonal at $p<0.001$ for all, with no significant changes were observed for the control group.

One possible interpretation of this problem is that a supportive or nonjudgmental social environment might help cancer survivors from processing their stressful experiences in a productive way, which can be helpful to their psychosocial adjustment.

Concerning self-esteem, in harmony with our study finding **Mohd-Sidik et al., (2018)** in a study aimed to evaluate the outcomes of chemotherapy counseling, revealed that the mean scores of self-esteems in the intervention group had a significant difference in comparison with those of the control group in the 1st, 2nd, and 3rd follow-ups after counseling ($P < 0.001$). When patients being informed and shared in the decision-making of their treatment plan it reflects on their self-esteem.

Conclusion

Cancer patients who undergo oncology surgeries experienced low QOL related physical, social, emotional, and functional wellbeing. As well as low self-esteem and low coping and adapting processing skills. In a conclusion, the discharge training program significantly improves and empowers the patients to have a greater sense of control over their illness, coping & adaptation, self-esteem and improve their QOL.

Recommendation

- Cancer treatment quality of care metrics should be created in a collaborative public-private effort that spans the whole cancer care continuum.
- Discharge programs should be established for gynecologic oncology patients and performed in cooperation with a large team, and that discharge training should be provided in line with patient needs
- Further studies on post oncology surgery rehabilitation and its effect on health-related quality of life.
- Replication of the study on a large sample and the different settings is recommended for generalization on large scale.

Declaration of Conflicting of Interests

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