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Effect of Nursing Management on Manifestations of Patients with Terminal Cancer undergoing Parenteral Fluid

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Abstract

Background: Parenteral hydration improves symptoms associated with dehydration and has an effect on quality of life and survival among the patients with advanced cancer. **Aim**; to evaluate the effect of nursing management on manifestations of patients with terminal cancer undergoing parenteral fluid. **Research design:** This study was a quazi experimental research design. **Sample:** sixty convenience adult patients with terminal cancer undergoing parenteral fluid, their age ranged between (20- 65) from both sexes. **Setting:** The study was conducted in Internal Medical Oncology Department at South Egypt Cancer Institute **Tools:** Two tools were used: **Tool (I):** Structured an interview questionnaire for patients: included demographic and medical data. Tool **(II):** Patient's manifestation assessment included (physical and psychological assessment) **Results:** Revealed that the highest percentage for both groups their age ranged from (>50 to 65) years old. All of them were married, and half of them (50%) were illiterate, there was a statistical significant difference between both groups regarding physical and psychological manifestations for patients. **Conclusion:** Nursing management was effective in fewer physical and psychological manifestations of patients with terminal cancer undergoing parenteral fluid**. Recommendation:** Studying the factors that affect palliative management of patients with terminal cancer undergoing parenteral fluid

Keywords: Nursing Management, Parenteral Fluid & Terminal Cancer Patients.

Introduction

Cancer is a major public health problem worldwide; cancer and its treatment have profound effects on patients well beyond those related to their physical health and well-being. it affects their physical, psychological health, their family and social lives, their work life, and their finances **Joffe & Ladas (2020).**

Cancer-associated malnutrition has many consequences, including increased risk of infection, reduced wound healing, reduced muscle function, and poor skin turgor resulting in skin breakdown. Nutritional support is recommended for malnourished patients who are unable to maintain body weight by appetite and food intake often in the decline of their disease **Zanetti et al., (2020).**

Parenteral hydration decrease some symptoms associated with dehydration in patients with terminal cancer. Hydration can reduce neuropsychiatric symptoms such as; hallucination, and fatigue. Adult cancer patients with incurable cancer who have inadequate oral intake refractory to appropriate palliative treatments are likely to die within one to two months. Moreover, no evidence suggested that aggressive parenteral fluid therapy can improve the quality of life **Abolhassani et al., (2020).**

Nursing management for patient with terminal cancer includes: assessing, monitoring and recording vital signs, measuring intake and output, monitor for signs of dehydration, skin turgor, urine output, moist mucous membrane and less confusion status. Assessing and monitoring for signs of fluid overload; edema, and breathing difficulty. Assessing and monitoring for signs of infection at the infusion site, assessing for signs of agitation, nausea, vomiting and fever. Monitoring and recording weight daily **Walsh, (2005).**

Nurses should comprehensively assess the patients with terminal cancer, especially the effects of hydration therapy on patient physical symptoms, survival, daily activities, psycho-existential well-being, and ethical and legal issues. Also the nurse should periodically reevaluate the treatment efficacy at planned intervals, and adjust the treatment suitable for each patient **Sowerbutts et al., (2020).**

Operational definitions

Terminal cancer: An incurable and progressive disease that cannot be adequately treated and is reasonably expected to result in the death of the patient within a short period of time **Ouglas and Carlas, (2001)**

Parenteral fluid: Fluids infused directly into circulating blood volume to supplement and replace body fluid **Jonathan, et al., (2018)**

Nursing management for patient with terminal cancer includes: assessing, monitoring and recording vital signs, measuring intake and output, monitor for signs of dehydration, assessing and monitoring for signs of fluid overload **Walsh, (2005)**

Significance of the study

Through a period of several years working in Medical oncology department many patients are admitted with terminal cancer approximately (200) during the year2017 suffering from reduced oral intake due to causes related to their illness or its treatment when oral intake was not adequate, so the researcher conducted this study to explore the efficacy of nursing management for patients with terminal cancer receiving parenteral fluid on improving general patients health status and reduced physical and psychological manifestations.

Aim of the study

Evaluate the effect of nursing management on improving physical and physiological manifestations of terminal cancer patients undergoing parenteral fluid**.**

Hypothesis

To fulfill the aims of the study the researcher hypothesis was formulated as:-

Patients in the study group will be fewer manifestations after application of the nursing management than patients in the control group.

Patients and method

Research design: Quasi-experimental design was used in this study.

Technical design

Setting: The study was conducted in Medical Oncology Department at South Egypt Cancer Institute.

Sample: Sixty patients with terminal cancer of both genders, their age ranged between 20 and 65 years; divided equally into two groups; (study and control groups 30 patients for each group) who were admitted in the Medical Department at South Egypt Cancer Institute. The control group received routine hospital care and the study group with whom the nursing management was applied by the researcher.

Inclusion Criteria

Patients with advanced cancer Local recurrence or metastatic disease admitted in Medical Oncology Department, cannot tolerate chemotherapy or radiotherapy, had reduced oral intake of fluids as determined by clinical assessment, exhibited evidence of mild or moderate dehydration, and able to tolerate the parenteral fluids treatment.

Sample size calculation

In this study sample size was calculated by using the epi- info program with confidence level at 95% and the flow rate of patients 270 cases in 6 months so the sample was calculated to be sixty patients (30) for the study group and (30) for the control group taking in randomized way according to the admission date to the department.

Sampling techniques

Patients admitted in the single bed number (1, 3& 5) were included in the study group.

The control group included patients were admitted in the 12ueven numbered beds (2, 4 & 6) in the medical oncology department.

Study tools

Three tools were used for data collection to achieve the purpose of this study:

Tool (I): A structured interview questionnaire:

This tool was developed by the researcher based on literature review it included two parts:

Part (1): Demographic data: It included 6 items used to assess patients personal data such as: age, sex, marital status, level of education and occupation

Part (2): Patient medical data: it consisted of 6 items as; medical conditions (hypertension, diabetes, respiratory, cardiac, renal and gastrointestinal disease)

Tool (II): Assessment of patient's manifestations with terminal cancer; this tool was developed by the researcher based on needs assessment of such group of patient, literature review **(Kobau et al., 2010 & Nakajima, 2020),** researcher experience and opinions of the medical & nursing expertise**.** It included two parts**.**

Part (1): Physical manifestation assessment:

This part aimed to assess patient's physical manifestation by physical examination it consisted of;

A- **Dehydration grade assessment**: using World Health Organization (WHO) scale for dehydration: It is important to determine the degree of dehydration in order to select the appropriate plan to treat or prevent dehydration.

Clinical assessment for degree of dehydration associated with fluid loss is as follows(A= means not present , B = Mild or Moderate grade, C = Sever grade)

Items	Grade **A**	Grade **B**	Grade **C**
General appearance	Well, alert	Restless, irritable	-lethargic ,unconscious
☒ Eyes	- Normal	- Sunken	- Sunken
☒ Thirst	-Drinks normally, not thirsty	- Thirsty, drinks eagerly	Drinks poorly, or not able to drink
☒ Skin turgor	Goes back quickly	Goes back slowly	Goes back very slowly

- If two or more of the signs in column C are present - the patient has "**severe dehydration".** If two or more signs from column B (and C) are present - the patient has " **mild or some dehydration**".Patients who fall under column A - "**no signs of dehydration**" . Estimation of fluid deficit with some dehydration or severe dehydration should be carried out by weighing them without clothing. **World Health Organization (2012)**

B- Assess nausea and vomiting tool among cancer patients:

This tool was developed by **Muayyad et al., (2016)** has a total of 24 items, 8 items asking about the experience anticipatory nausea and vomiting, 8 items asking about the experience of acute nausea and vomiting, and the last 8 items asking about the experience of delayed nausea and vomiting. The items capture all the characteristics of nausea and vomiting that are needed in the patient assessment, including the occurrence of the symptom, duration, frequency, severity, and the amount.

Scoring: For the questions that have "yes" or "no" answer, "yes" was assigned a value of "1", and " no" was assigned a value of "0."

- For questions asking about the duration of nausea, if the duration is less than one hour, the score is "1", if the duration is more than one hour, the score is "2."
- For the questions asking about the severity of nausea and vomiting, mild was be assigned a value of "1", moderate was assigned a value of "2", severe was assigned a value of "3", and intolerable was assigned a value of "4."
- For the questions asking about the frequency of nausea and vomiting, "once" was assigned a value of "1", "twice" was assigned a value of "2" and so on.
- For the questions asking about the estimation of the amount of vomiting, "small amount" was assigned a value of "1", "moderate amount" was assigned a value of "2", and "large amount" was assigned a value of "3."

After them calculation then graded it on a scale from 0-4 grade.

C- Monitoring fluid intake (IV. fluid + oral fluid) and output.

D- Assessment of ascites by using abdominal girth measurement daily.

E- **Edema degree scale** adopted from **O'Sullivan, and schnistz (2007).** To determine the extent of the pitting edema, by pushing the patient skin and measuring the depth of the indention, and record how long it takes for the skin to rebound back to its original position. Then grade it on a scale from 1-4 .

Grade	- Depth	Rebound time
1 or Grade1	-2 millimeter (mm) depression, or barely visible (Not presnt)	- Immediate
2 or Grade2	- 3-4 mm depression, (Mild)	- 15 seconds or less
3 or Grade3	- 5-6 mm depression	- 10-30 seconds
4 or Grade 4	- 8 mm depression	- More than 20 seconds

Part (2): Psychosocial manifestations assessment:

This scale developed by **Sandeep and Natasha (2012)**

This part aimed to assess patient's psychological manifestation as the following

A- Delirium assessment: usually a patient who scores between +4 to - 4 is considered to be assessable for delirium.

Assessment of the patient according for sub-typing of delirium as the following:

- No manifestations means absent delirium.
- Hyperactive delirium is defined as persistent rating of +1 to +4 (**Marked degree)** during all assessments.
- Hypoactive delirium **(Mild degree)** is defined as persistent rating of 0 to -3 during all assessments.
- Mixed subtype is defined as present when the patients has rating of both hyperactive and hypoactive (Grade3).

B- Anxiety assessment scale grading scorning: This scale was designed by **Spielberger (1977)** to examine anxiety levels in cancer patients as a self-report by the subject in responding to this scale. It consisted of 20 items that ask how a person feels now and reflects situational factors that may influence anxiety levels. Answers were on a scale of 1 to 4 and scores ranged from 20 to 80 degree.

Levels of anxiety were classified according to their scores into four levels:(absent ,mild, marked, sever)

Methods

Administrative design

Permission to carry out the study was obtained from the responsible hospital authorities of medical oncology at South Egypt Cancer institute.

Phase (1) Preparatory phase

A review of current and past, local international related literature in the various aspects of the problems using books.

Face validity and reliability

Face validity of the study tools were checked by 5 expert professors in the field nursing and medicine, they reviewed the instruments for clarity, relevance, comprehensiveness, understanding, applicability and easiness; minor modifications that required correction were carried out accordingly .Tools reliability refers to the degree of consistency with which the instrument measures the thing supposed to be measuring. Reliability of tools was confirmed by Alpha Cronbach test (0.95).

Ethical consideration

- Research proposal was approved from ethical committee in the faculty of nursing.
- There was no risk for study subject during application of the research.
- The study was following common ethical-principles in clinical research.
- Informed consent was obtained from the patients who are willing to participate in the study after explaining the nature and purpose of the study.
- Confidentiality and anonymity were assured.
- Patient had the right to refuse to participate and or withdraw from the study without any rational any time.
- Patient privacy was considered during collection of data.

A pilot study

The purpose of this pilot study was of 2 folds: first to ensure the clarity of designated study tools. Second, to examine the utility of the designed tools and identify any difficulties or problems needed to be handled before applying it. The pilot study carried out in May 2018 and last for one month on 10% of the study sample (6 patients) those patients who were involved in the pilot study were included in the actual study sample because no modification of data collection tools was done

Phase (2): Implementation phase

- Once permission was granted to proceed with the proposed study, the investigator initiated data collection.
- Data were collected from the Medical department at South Egypt Cancer Institute by interviewing methods.
- Each patient was informed with the purpose of the study.
- The investigator emphasized that the participation was voluntary and confidentially and anonymity of subjects was assured through coding of all data, verbal consent was obtained from each patient confidentiality of any obtained information was secured and the study was carried out at all shifts.
- At initial interview; the researcher introduced herself to initiate line of communication
- Explained the nature and purpose of the study and filled out the data collection tools (tool I and II)
- For the study group; the researcher filled the tool in one session in about one hour.
- Collection of data for this study began in June (2018) & ended in December (2018), the researcher meet with each patient individually.

Nursing management

- After extensive literature review considering patients' needs and their levels of understanding. The designed nursing management on improving manifestations of patients with terminal cancer undergoing parenteral fluid protocol was developed by the researcher.
- Patients who constituted the control group were exposed to routine hospital interventions.
- The patients who constituted the study group were exposed to the designed nursing management including multi dimensional concept that include domains related to physical, mental, emotional and social functioning will being including the following nursing management;

A- Nursing management before initiating parenteral therapy; included patient weight daily with same scale and preferably at the same time of day for assessing fluid volume imbalance, identify the possible cause of fluid disturbance or imbalance (monitoring the weight gain or loss)

B- The nurse monitored active fluid loss from bleeding, vomiting and diarrhea maintained accurate input and output record, monitored closely for signs circulatory overload (headache, flushed skin, tachycardia, tachypnea) to reduce complications associated with fluid replacement.

C- Education the patient with terminal cancer patient about various self-care activities and nutrition, hydration.

D- Education about various cognitive behavioral techniques includes; guided imagery, relaxation, hypnosis and distraction.

E- **Nursing management regarding to physical measure include**: use of heat or cold application , therapies that influence the energy fields of the body – such as therapeutic

touch, music and art therapy help to reduce the pain experience in some patients.(**King & Tarcatu 2010 & Kobau et al., (2010)**

Statistical design

Collected data was analyzed and tabulated .The researcher used an appropriate statistical method and tests for analysis of the result. The statistical package (SPSS) version (23) was used to analyze data. Descriptive statistics was used for the quantitative data. Descriptive statistics included: frequencies, and percentages. Pearson Correlation (Correlation is significant at the 0.05 level). The level of significance for this study was set at ($p \leq 0.05$) to detect any indication of differences found in the data available.

Results

Table (1): Frequency distribution of demographic characteristics of patients in both groups (n=60)

Variables		Study group		Control group		X^2	P. Value
		n	%	n	%		
Age (years)	30-<50 yrs.	12	40.0	11	36.7	0.00	1.000
	50- 65 yrs.	18	60.0	19	63.3		
	Mean ±SD	53.30± 10. 36		54.43 ±10.53			
Sex	Male	13	43.3	17	56.7	0.600	0.438
	Female	17	56.7	13	43.3		
Marital status	Single	0	0.0	0	0.0	0.016	0.897
	Married	30	100.0	30	100.0		
Educational level	Illiterate	15	50.0	14	0.0	5.219	0.156
	Primary school	6	20.0	11	36.7		
	Secondary	3	10.0	4	13.3		
	University	6	20.0	1	3.3		
Occupation	Professional work	5	16.7	2	6.7	3.772	0.287
	Manual work	6	20.0	11	36.7		
	Housewife	15	50.0	11	36.7		
	Not work	4	13.3	6	20.0		

Table (2): Comparison between the patients in study and control groups regarding medical data. (n=60)

Health history	Study				Control				X2	P.value
	Present		Not present		Present		Not present			
	n	%	n	%	n	%	n	%		
Hypertension	18	60.0	12	40.0	18	60.0	12	40.0	0.069	0.792
Diabetes mellitus	11	36.7	19	63.3	12	40.0	18	60.0	0.000	1.000
Respiratory disease	10	33.3	20	66.7	2	6.7	28	93.3	5.104	0.023*
Cardiac disease	0	0	30	100.0	0	0.0	30	100.0	0.016	0.897
Renal disease	0	0	30	100.0	0	0.0	30	100.0	0.016	0.897
Gastrointestinal disease	20	66.0	10	33.3	16	53.3	14	46.7	0.625	0.429

*Chi-Square Tests *=Significant difference *p≤0.05 **= highly significance *p≤0.01 Ns= Non significant difference P>0.05*

Table (3): Comparison between the patients in study and control groups regarding physical manifestations pre- post test (n=60)

Variables		Pre- test				X2	p.v	Post test				X2	p.v
		Study		Control				Study		Control			
		n	%	n	%			n	%	n	%		
Degree of dehydration	Not present	6	20.0	4	13.3	5.081	0.166	22	73.3	11	36.7	9.267	0.026*
	Mild	16	53.3	11	36.7			6	20.0	10	33.3		
	Moderate	5	16.7	13	43.3			2	6.7	8	26.7		
	Sever	3	10.0	2	6.7			0	0.0	1	3.3		
Degree of edema	Grade 0	4	13.3	6	20.0	4.553	0.339	23	76.7	9	30.0	14.163	0.006**
	Grade 1	16	53.3	14	46.7			5	16.7	10	33.3		
	Grade 2	8	26.7	8	26.7			1	3.3	6	20.0		
	Grad 3	0	0.0	2	6.7			1	3.3	4	13.3		
	Grad 4	2	6.7	0	0.0			0	6.7	1	3.3		
Nausea assessment	Grade 0	6	20.0	4	13.3	1.859	0.762	23	76.7	10	33.3	14.388	0.006**
	Grade 1	11	36.7	11	36.7			4	13.3	11	36.7		
	Grade 2	9	30.0	8	26.7			3	10.0	3	10.0		
	Grad 3	4	13.3	6	20.0			0	0.0	4	13.3		
	Grad 4	0	0.0	1	3.0			0	0.0	2	4.0		
Vomiting assessment	Grade 0	5	16.7	4	13.3	5.611	0.230	23	76.7	11	36.7	14.807	0.005**
	Grade 1	15	50.0	9	30.0			6	20.0	6	20.0		
	Grade 2	9	30.0	11	36.7			1	3.3	6	20.0		
	Grad 3	1	3.3	4	13.0			0	0.0	5	16.7		
	Grad 4	0	0.0	2	6.0			0	0.0	2	6.7		
Ascites assessment	Grade 0	15	50.0	16	53.3	4.506	0.212	26	86.7	16	53.3	9.524	0.008**
	Grade 1	11	36.7	8	26.7			2	6.7	12	40.0		
	Grade 2	2	6.7	6	20.0			2	6.7	2	6.7		
	Grad 3	2	6.7	0	0.0			0	0.0	0	0.0		

*Chi- Square Tests *=Significant difference *p≤0.05 **= highly significance *p≤0.01 Ns= Non significant difference P>0.05*

Table (4): Comparison between the patients in study and control groups regarding psychological manifestation (n=60).

Variables		Study				X2	p.v	Control				X2	p.v
		Pre test		Post test				Pre test		Post test			
		n	%	n	%			n	%	n	%		
Deliriu m grade	**Absent**	20	66.7	28	39.3	6.933	0.031*	21	70.0	25	83.3	2.040	0.360 NS
	Mild	8	26.7	2	6.7			8	26.7	5	16.7		
	marked	2	6.7	0	0.0			1	3.3	0	0.0		
Anxiety grade	**Absent**	9	30.0	25	83.3	18.091	0.000**	8	26.7	17	56.7	6.037	0.109 NS
	Mild	16	53.3	3	10.0			15	50.0	8	26.7		
	Moderate	4	13.3	2	6.7			4	13.3	2	6.7		
	Sever	1	3.3	0	0.0			3	10.0	3	10.0		

*Chi-Square Tests *=Significant difference *p≤0.05 **= highly significance *p≤0.01 Ns= Non significant difference P>0.05*

Table (1): Revealed that the highest percentage of both patient groups (60%, 63.3% respectively) their age ranged from (>50 to 65) years old. All of them were married, and below half of them (50%, 47% respectively) were illiterate.

Table (2): Revealed that regarding medical data for the patient in both groups the highest percentage of them had hypertension (60%) and gastrointestinal disease (66%, 53.3% respectively).

Table (3): Revealed that there was a statistical significant deference for the patient in the study group regarding physical manifestations in post test including dehydration degree P<0.05, edam degree, nausea, vomiting and ascites P<0.001.

Table (4): Revealed that there was a statistical significant deference for the patient in the study group regarding psychological manifestation assessment in post test including delirium grade anxiety grade P<0.05.

Discussion

Most patients with cancer develop decreased oral intake and dehydration as a frequent complication of advanced cancer, resulting from various causes, including profound anorexia, odynophagia, oral cavity lesions, dysphagia, nausea and vomiting, delayed gastric emptying, bowel obstruction, cognitive impairment, and severe mood disorders. **Karagiannis et al., (2011).**

The aim of this study was to evaluate the effect of nursing management on manifestations of patients with terminal cancer undergoing parenteral fluid. As regarding demographic characteristics of studied group: The present study revealed that the majority of the patients their age were more than < 50 years. This study result agreed with **Jarvandi, et al., (2016**) who mentioned in their study, that two thirds of diagnosed cancer patients were in the age 55 years.

These study results come in agreement with **Khalil, (2010)** who reported that, the median age for cancer patient was 62 years. This result disagreed with **Miller et al., (2016),** who stated that age of cancer patients ranged from 80 to 87 years (median 82 years). **Gerharz, et al., (2015)**. Reported that the mean age' in there study was 73.3±3.01 years, (range, 70–85 yrs.). Furthermore it is less commonly seen in those younger than 40 years of age and most commonly occurs in people between the ages of 50 to 70 years.

In the present study; the majority of patients were females among study group but the majority of control group were male. All of them were married and the majority had manual work and housewife. This disagreed with **Texeira & Graca (2014)** in their study which revealed that single patients were at significantly higher risk of presentation with metastatic cancer, under treatment, and death resulting from their cancer.

This study result was not supporting the finding of **Faller et al., (2016)** who reported that, the majority of the sample of cancer patients in their study were males. Also **Krishnan (2016)** in his study on cancer patients stated that men have higher incidence of developing cancer surgery than women.

Concerning occupation, the present study showed that most patients of the study were manual workers and house wives; this is due to the fact that the sample was originally from the rural areas. This finding was contradicting with **Davies, (2011)** who reported that working was found in a high proportion among patients undergoing surgery.

Also, from the researcher's point of view this result could be due to that the majority of the sample was males and they needed to work to earn money for their family. Most of them were manual workers so they were exposed to pesticides which are associated with developing specific cancer. This was in the same line with **Koutros et al., (2016)** who reported that in the developed world, occupational exposures are a leading cause of kinds of cancer.

Regarding medical data; the finding showed that the highest percentage of both groups had hypertension and gastrointestinal disease. In this regard the results of **Uzunlulu et al., (2016)** exhibited that hypertension was associated with an increased risk of mortality from cancer, in addition, the results showed an association of diabetes with cancer development and cancer-related mortality.

It is postulated by **Klil-Drori et al., (2017)** who mentioned that the increased risk of cancer in men than in women with diabetes may be caused by differences in adipose tissue distribution. Although there are prospective studies showing the association between diabetes and cancer, there are also other studies reporting a decrease in prostate cancer in individuals with metabolic diseases conflicting results are also suggested regarding the link between obesity and diabetes and cancer.

The age-standardized rates; a large number of cancer patients present with gastrointestinal complaints owing to either the disease process or complications of treatment. Nausea and vomiting occur frequently and require prompt intervention to avoid dehydration (**Ghoncheh et al., 2016**) Also diarrhea is encountered frequently and may be related to infection, chemotherapy, radiation therapy, graft-versus-host disease , secretory tumors, or neutropenia in the cancer patient. In addition, malignant bowel obstruction is common in patients with intra-abdominal or extra-abdominal malignancies. (**Malard et al., 2018).**

Regarding physical manifestations; the results demonstrated that there was a significant improvement among study group in post implementing nursing management protocol. In this line **Chao et al., (2015)** confirmed the importance of nutrition education for patients and their caregivers, and support for healthy eating and physical activity to improve their diets and their lives. The average contribution of protein and total energy of each patient increased after imparting the nutritional education to them. Thus, nutritional education is an effective measure to bring about a favorable and significant change in oncology patients' nutrient intake.

These findings come in accordance with the study by **Jarvandi et al., (2016**) who reported that there was a significant difference between the mean pre-test and post-test knowledge, indicating a statistically significant improvement in knowledge of the subjects after the administration of the nursing teaching protocol in his study. The patient had adequate level of patient assessment about their parenteral nutrition after nursing management. Health professionals play an important role in helping patients undergoing parenteral nutrition.

This finding is in contrast with **Catharina, et al., (2014)** who mentioned that no statistical differences were found for general outcomes of terminal cancer patients and remained stable over time.

So, it can be concluded that results from their this and other studies strongly suggest that teaching should be approached in an organized manner, under pinned by sound principles of teaching and learning using teaching plans where appropriate to ensure that no vital aspects are omitted. Also, patients who undergo parenteral nutrition need extensive teaching and counseling to fully recover.

Regarding psychological manifestation

The current study result revealed that there was a significant improvement among study group post implementing nursing management protocol regarding psychological manifestation; also there was an improvement of the delirium and anxiety level post nursing management application. Nursing management was created to reduce the physical and emotional stress for patients undergoing major surgical interventions. This finding comes in agreement with **Makarov, et al., (2018)** in their study about enhanced recovery after radical cystectomy and urinary diversion, who stated that enhanced recoveries after surgery pathways reduced the physical and emotional stress for patients undergoing major surgical interventions.

Finally, the nursing management for patients undergoing parenteral nutrition played an important role in minimizing complications and increased patient's knowledge and enhanced both physical and psychological status. This agree with **Koch, & Fulop, (2017)** who stated that patient educational programs are very important in the minimization & prevention of early and late complications that should be clinically well versed in all aspects of the condition, current strategies to address risk minimization and prevention management and it include the patient safety measure.

Conclusion

According to the results of this study, there was significant effect of nursing management on fewer physical and psychological manifestations of the patients with terminal cancer undergoing parenteral fluid**.**

Recommendations

In the light of the findings of the current study, the following recommendations were suggested:-

1. Developing strategies aimed to improve quality of care for patients with terminal cancer undergoing parenteral fluid
2. Studying the factors that affect palliative management for patients with terminal cancer undergoing parenteral fluid
3. Further researches should be done on a large sample to generalize the results of the study.

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