

Effect of Palliative Care Protocol on Cancer Patients' Outcomes

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Abstract

Background: Palliative care is specialized medical care for advanced cancer patients which focus on improving quality of life and patients' satisfaction by reducing their pain. **Aim of study:** Was to evaluate the effect of palliative care protocol on cancer patients' outcomes. **Design:** A Quasi-Experimental research design was utilized to conduct the study. **Setting:** This study was conducted at outpatient palliative care clinic and inpatient oncology unit in Benha University Hospital and National Cancer Institute in Cairo. **Subjects:** Convenient sample of 100 adult cancer patients of both sexes were recruited. **Tools of data collection:** Three tools were used to collect data included; **I:** Patients' assessment questionnaire regarding to their demographic characteristics, medical history and knowledge. **II:** Pain assessment. **III:** Patient's satisfaction. **Results:** There were high statistically significant improvements in patients' knowledge on 2nd and 4th week post palliative care protocol intervention about cancer and palliative care. Also, the pain intensity of the studied patients reduced on 2nd and 4th week post palliative care protocol intervention with high statistically significant differences in their behavior and satisfaction. **Conclusion:** Implementation of palliative care protocol for cancer patients had improved their health outcomes with significant improvement in their level of knowledge, satisfaction and pain. **Recommendations:** Applying ongoing a palliative nursing intervention among cancer patients to help them manage pain and reduce symptoms.

Key Words: Cancer, Pain intensity, Palliative care, Satisfaction.

Introduction

Cancer pain is one of the most common complex symptoms patients and usually has a negative effect on patients' functional status and quality of life. Effective management is accomplished pain assessment and identifying the optimal pharmacological and non-pharmacological treatment options, health education and psychological care (**International Association for the Study of Pain (IASP), 2018**).

Palliative care is a crucial part of integrated health services and play vital role for cancer patients by reducing physical, psychological, social or spiritual discomfort and improvement quality of life for patients and

families. It is an integral part of cancer treatment, especially in its advanced stages and can be used in conjunction with other life-prolonging therapies such as chemotherapy or radiation therapy. Palliative care is promoted by a team of healthcare provider such as specialty trained physicians, advance practice providers, nurses, chaplains, and/or social workers for patients and family (**Advance Palliative Care Center [APCC], 2019**).

Palliative care in terms of complementary therapy or non-pharmacological therapy that is an approach to medical care that combines conventional medicine with alternative therapy that have shown through science to be safe and effective. It attempts to address the mental,

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physical, and spiritual aspects of health such as relaxation, massage, deep breathing and communication. Therapeutic touch or massage is a form of energy healing that is popular community which manipulate of soft tissue structures of the body to prevent or alleviate pain, spasm, tension and to promote health wellness. Therapeutic massage improves local circulation, stimulates the free nerve ending and induces local and general relaxation (Bushnell et al., 2017).

Nurses' role in palliative care is responsible for facilitating the cancer patients' access to supplies and medicines, routinely ongoing assessments of the patients' physical, psychosocial and spiritual needs, developing a personal care plan in supporting with family members, providing information and maintain records and encouraging the family to keep the patient involved in the daily lives as much as possible. So, nurses should be competent in the care of patients throughout the continuum of life (Chapman, 2020).

Significance of the Study:

In Egypt, in 2018, there were about 134,632 new cancer cases and 89,042 cancer-related deaths in Egypt. Liver (20.7%) and breast (16.4%), bladder (7.9%), lung (4.9%) and Other cancers (44.7%). Cancers are the most common tumors in terms of incidence and mortality. Risk of developing cancer before the age of 75 years (WHO & National Cancer Institute, 2020).

Palliative care in the Middle East including Egypt, is limited and does not present a clear picture of the cultural context and still in early stages and there are many obstacles to its development, namely, lack of professional knowledge, inadequate support of policy-makers and lack of access to opioids and financial resources. Despite these challenges, providing services at the community level, support of nongovernmental organizations, using trained specialists and multi-disciplinary

approach is an opportunity in Egypt (El-Taybani et al., 2020).

Aim of the study:

This study aimed to evaluate the effect of palliative care protocol on cancer patients' outcomes.

Research hypotheses

The hypotheses to be tested in this study are:

H₁- Mean score of patient's knowledge post - - palliative care protocol intervention would be higher than before.

H₂- Improving the patients' outcomes post palliative care protocol intervention than before.

H₃- Pain intensity score would be reducing post palliative care protocol intervention.

Subjects and Method

Research Design:

A Quasi-Experimental research design was conducted to achieve the aim of this study.

Setting:

This study was conducted in outpatient palliative care clinic and inpatient oncology unit at Benha University Hospital and National Cancer Institute in Cairo. Benha University Hospital inpatient unit located on the fifth floor contain two rooms, each one had four beds. The National Cancer Institute in Cairo inpatient unit located on ninth floor and contains twelve beds.

Sample:

A convenience sample of 100 adult palliative patients of both sexes was recruited during a period of one year.

Tools of data collection:

It was developed by the researcher through review of related literature, three tools were used to conduct the current study as follow: -

Tool (I): Patient assessment questionnaire: it aimed to assess patient's knowledge about cancer and palliative care, it was adapted from

Johnston et al., (2014) & Press wood & Noble, (2017) & WHO, (2018). It included the following three parts:

Part(1):Patients' demographic

characteristics: It include; age, gender, smoking, education level, marital status, work nature, treatment cost and residence.

Part (2): Patients' medical history: It include; cancer type, first time of diagnosis, site of metastases, last date of chemotherapy and radiotherapy history, previous last surgery, current prescribed pain medication and associated chronic pain.

Part (3): Patients' knowledge assessment: This part consisted of 13 questions "correct /incorrect" related to the following:

- Patients' knowledge about cancer consisted of 6 questions "MCQ".
- Patients' knowledge about palliative care included of 7 questions "MCQ".

Scoring system

The total score of knowledge was 26 grades as follow:

All knowledge items were weighted according to questions of multiple choices MCQ, each incorrect answer was scored as "0" and correct answer was scored as "1".

▪ $\geq 70\%$ was considered "satisfactory (≥ 9 marks).

▪ $< 70\%$ was considered "unsatisfactory (<9 marks).

Tool (II): Pain assessment tool: It was aimed to assess patients' expressed intensity and associated behavior of pain. It included the following three parts: -

Part (1): Subject pain experience assessment: It adopted from **Treede et al, (2015) & International Association for the Study of Pain (IASP), (2018).** It was consisted of questions about pain as subjected by patients expressed, it included 9 question "MCQ") and (2 question close ended).

Part (2): Numeric pain rating scale:

Score of pain as follow;

- no pain or absence scored (Zero)

- mild pain or controlled scored (1-3)
- moderate pain scored (4-6)
- severe pain scored (7-10).

Part (3): Behavior of patient toward pain

management: It was aimed to assess patients' response toward pain-associated behaviors, it adopted from **Oliver et al., (2013).** It consisted of 12 items

Scoring system of behavior as follow;

- normal behavior scored (Zero)
- mild behavior scored (1-3)
- moderate behavior scored (4-6)
- worse pain behavior scored (7-10).

Tool III: Patient satisfaction assessment: it use FAMCARE-Patient scale (FAMCARE-P) which was adopted from **Lo et al., (2009).** It consisted of 16 item.

Scoring system The total score of satisfaction was 32 grads classified as follow:

All patient's satisfaction items were weighted according to questions, each **dissatisfied** answer was scored as "0", **undecided** answer was scored as "1" and **satisfied** answer was scored as "2".

▪ $\geq 70\%$ was considered "satisfied (≥ 11 marks).

▪ $< 70\%$ was considered "unsatisfied (<11 marks).

Palliative care protocol

It developed by researcher through review related literature and according to baseline assessment of patients need through pretest which divided into informational part and palliative care technique:

Informational part; it was included the following: -

- Definition of cancer, causes, psychological effect of cancer, cancer symptoms type of cancer, metastatic cancer and treatment.

- Definition of palliative care, palliative care setting, health care team, importance of palliative care, time of providing palliative care, type of palliative treatment and complimentary therapy for pain management.

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Palliative care technique; it was included complementary therapy as massage, breathing relaxation technique, music therapy and communication skills. Teaching methods used were lectures, discussions and role playing, videos, music cassette conducted.

Communication skills:

The researcher talked with the patients about the importance of palliative care and the role of each member in the palliative care team. Communicate with them for expressing pain or any symptoms associated with cancer, what treatment or drugs are prescribed for pain as NSAID, opioids (tramal, naluphine) and adjuvant (morphine, durgestic and fentanyl patch). Uses of pain medication according nature and intensity of pain and importance of arranging treatment appointments. Support patients for taking decision of any problems, encourage of them to talk with the researcher and family.

Breathing relaxation procedure: Sit quietly in a comfortable position with close eyes and their back straight, relax for 10 to 20 second, extend wrists and forearm, bend their hands back at the wrist. Breathe slowly through nose and focus on breathing deeply and slowly then exhale though their mouth, pushing out as much air as they can while contracting the abdominal muscles a move in as they exhale. Continue of inhalation and expiration with focusing on movement of chest, ribs, shoulder and expansion of the lung. It was done with listening music Quran.

Massage procedure: Place the patient in a comfortable room and warm, playing some soothing music, gentle classical music and sounds from nature. Put hands on their pain site, using deep pressure then reduce pressure by gentle massage. For foots massage, use both hands to hold one-foot, deep pressure on their arch and heel of the foot then grab each toe at a time and gentle pull to relieve any tension then reduce pressure next slowly increase the pressure. For back pain, put palm of each hand

on both sides of the spine, press on the lower back and moving to upper back then reduce pressure using gentle pressure. Continue massage by this technique on the other part of body.

Tools Validity:

❖ Face and content validity for the developed tools were tested through jury of five experts in the field of two assistant professors of oncology, Faculty of Medicine, Cairo University at National Cancer Institute in Cairo and three lecturers of Medical SURGICAL Nursing, Faculty of Nursing at Benha University. The developed tools were reviewed for clarity, relevance, comprehensiveness, simplicity and appropriateness. Minor modifications were done in the form of rephrasing of sentences.

❖ Also, a prepared booklet which covered all items related to palliative care protocol on cancer patients' outcomes based on newest current literature was revised by the same experts and all recommended modifications were done.

Reliability of tools:

It was done by Alpha-Cronbach coefficient test which revealed that each of the two tools consisted of relatively homogenous items as indicated by moderate to high reliability of each tool. The agreement percentage was between 80 and 100%. The observational checklists showed reliability with a Cronbach's α coefficient (r) revised tool 1 of 0.91 and tool 2 of 0.85.

Ethical consideration:

1. Verbal approval was obtained from patients before starting the study; a clear and simple explanation of the study purpose was given according to their level of understanding, physical and mental readiness.
2. They were guaranteed that, all the gathered data was confidential and used for research purpose only.
3. The patients were informed that they are allowed to choose for the participating or not in

the study and have the right to withdraw at any time without giving any reason.

Pilot study:

Pilot study was carried out on 10% of the total study subjects (10 patients) in order to test the applicability of the constructed tools and the clarity of the included questions. The pilot has also served to estimate the time needed for each subject to fill the questions. According to the results of the pilot, some corrections and omissions of items were performed as needed. The pilot participants were excluded from the main study sample.

Field work:

- Data were collected in one year from beginning of July 2020 to the end of July 2021.
- Data collection and teaching sessions were conducted in the morning at outpatient palliative care clinic and afternoon shift at inpatient department at Benha University Hospital and National Cancer Institute in Cairo. Each interviewed took time of about 30-minute pre collecting tools. The data collection was done through the following phases.

Assessment phase:

➤ An interview questionnaire was started once the researcher got of consent from the patients which is concerned by demographic characteristics, medical history, patients' level of knowledge (tool 1), pain intensity, behavior response toward pain (tool II) and patient's satisfaction (tool III) as baseline data assessment.

Planning phase

- The resources and facilities for applying palliative care protocol were allocated (printed material, PowerPoint presentation, videos and sessions) that best assist the participant patients. The appointment for starting teaching sessions was determined and scheduled with the patients.
- Ensuring environment most convenient, conditioned, quiet and had adequate lighting,

well ventilated and had adequate spacing between patients.

Implementation phase:

- This phase consisted of sessions designed to studied patients; teaching sessions were conducted entire the unit and classroom in outpatients. Palliative care protocol was implemented by the researcher by using simple Arabic words during the conversation with the patients.
- Patients were classified into groups; each group was consisted of 3-4 patients. Each session had taken 30-45 minutes /day for 3days per week during morning and afternoon shifts. Total numbers of sessions were two sessions as follow; First session were patient's knowledge about cancer, palliative care and pain. The second session were palliative therapy for pain management
- At the beginning of session started by greeting the patients, presenting the objectives, showing and explaining the topic using simple language. an orientation of the importance of palliative care protocol and role of health care team was explained to the patients to motivate them to follow the interventions. Getting feedback about what was explained and given through the session and facilitating answering for any questions.
- The researcher was learn the patients' steps of breathing relaxation, and massage technique while they were listening of the music after giving them the time of communication modalities session. The researcher asked and encouraged patients to express and describing of pain for changing their behavior to follow the palliative care protocol three time /daily. At the end of these sessions, the researcher informed them that they would be evaluated by the researcher on 2nd and 4th week.

Evaluation phase:

The evaluation phase aimed to evaluate the effect of palliative care protocol on the patients' outcome by measuring differences

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between pre and post results by using tool (I, II& III) concerned with knowledge, pain assessment, and behavior response to pain as well as patients' satisfaction. It was evaluated on 2nd and 4th week post palliative care protocol intervention. Comparing the collected data pre/post (2nd and 4th week) palliative care protocol intervention by different methods of statistical tests.

Statistical analysis

The collected data were organized, categorized, tabulated and analyzed using the number and percentage distribution. The statistical analysis of data was done by using the computer software of Microsoft Excel Program and Statistical Package for Social Science (SPSS) version 25. Data were presented using descriptive statistics in the form of frequencies and percentage for categorical data, the arithmetic mean (X) and standard deviation (SD) for quantitative data. Qualitative variables were compared using chi square test (X^2).

Degrees of significance of results were considered as follows:

- P-value > 0.05 Not significant (NS)
- P-value \leq 0.05 Significant (S)
- P-value \leq 0.01 Highly Significant (HS).

Result:

Table (1): Shows frequency and percentage distribution of the studied patients according to their patient's demographic characteristics. It revealed that (55%) of studied patients were female and their age ranged from (50- \geq 60) years old as well. They were married and had intermediated education (57% and 44%), respectively. On the other hand, (83%) of the studied patients had mental work and live in rural areas, respectively. As well, (58%) of them their treatment cost was through health insurance.

Table (2): Shows frequency and percentage distribution of the studied patients

according to their medical history. It noticed that (23% and 19%) of the studied patients had acute myeloid leukemia and gastrointestinal cancer (GIT), respectively. They had cancer with metastatic in liver for (33%) of them.

Figure (1): This figure shows that all the studied patients' knowledge was unsatisfactory level (100%) pre palliative care protocol intervention which improved to be satisfactory by (85% and 94%) of the studied patients on 2nd and 4th week post palliative care protocol intervention, respectively.

Table (3): This Table shows that, total mean of the pain intensity of the studied patients was (7.06 ± 2.60) pre protocol intervention which reduced on 2nd and 4th week post palliative care protocol intervention to be (3.94 ± 2.28 and 2.68 ± 2.15), respectively with high statistically significant differences ($p = <0.001$). It was observed in (45% and 39%) were between intermediate and sever pain, respectively and it decreased to (28% and 10%) of them on 4th week post palliative care protocol intervention with high statistically significant ($p = <0.001$).

Figure (2): This figure shows that total pain behavior scores of studied patients (10) worse behavior and (0) normal behavior. There was (37%) of studied patients had severe behavior response toward pain pre palliative care protocol and decreased to (21% and 13%) on 2nd and 4th week PCPI. On the other hand, there were (11%) of the studied patients had mild behavior response toward pain pre palliative care protocol and they increased to (58% and 65%) on 2nd and 4th week PCPI.

Figure (3): This figure shows that, (96%) of the studied patients were dissatisfied pre intervention, which decreased to be (70% & 14%) in post 2nd and 4th week PCPI, respectively.

Table (1): Frequency and percentage distribution of the studied patients according to their patient's demographic characteristics (n = 100)

Patients' demographic characteristics	No.	%
Age		
18 - >30	9	9.0
30 - >50	36	36.0
50- ≥ 60years	55	55.0
Gender		
Male	45	45.0
Female	55	55.0
Smoking		
Yes	34	34.0
No	66	66.0
Education level		
Illiterate	22	22.0
Read and write	19	19.0
Intermediate education	44	44.0
High education	15	15.0
Marital status		
Married	57	57.0
Single	20	20.0
Widow	23	23.0
Divorce	0	0.0
Work nature		
Technical	17	17.0
Mental work	83	83
Treatment cost		
Expense of the state	25	25.0
Health insurance	58	58.0
Special cost	17	17.0
Residence		
Rural	83	83.0
Urban	17	17.0

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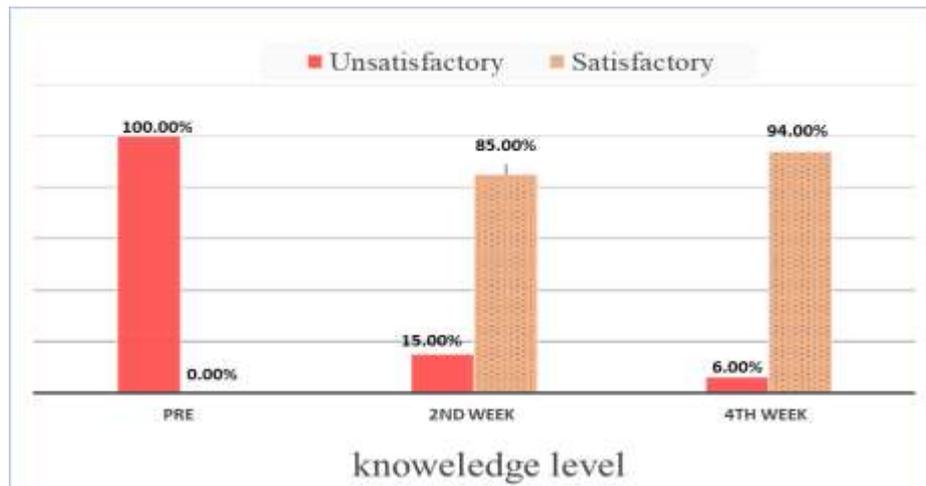


Figure (1): Distribution of the studied patients according to their level of knowledge satisfactory pre and post palliative care protocol intervention (n = 100)

Table (2): Frequency and percentage distribution of the studied patients according to their medical history (n = 100)

Medical history	No.	%
Cancer Type		
Acute lymphoblastic leukemia (ALL)	17	17.0
Breast cancer	17	17.0
Gastrointestinal cancer (GIT)	19	19.0
Acute myeloid leukemia (AML)	23	23.0
Bladder cancer	11	11.0
Lung cancer	5	5.0
Uterus cancer	5	5.0
Bone cancer	3	3.0
Site of metastases		
Acute lymphoblastic leukemia (ALL)	8	12.1
Lung cancer	12	18.2
Acute myeloid leukemia (AML)	4	6.1
Brain cancer	8	12.1
Liver cancer	22	33.3
Lymph node	9	13.6
Bladder cancer	3	4.5
No metastases	34	34.0
Associated chronic disease		
Hypertension	9	64.3
Diabetic	5	35.7
No chronic disease	86	86.0

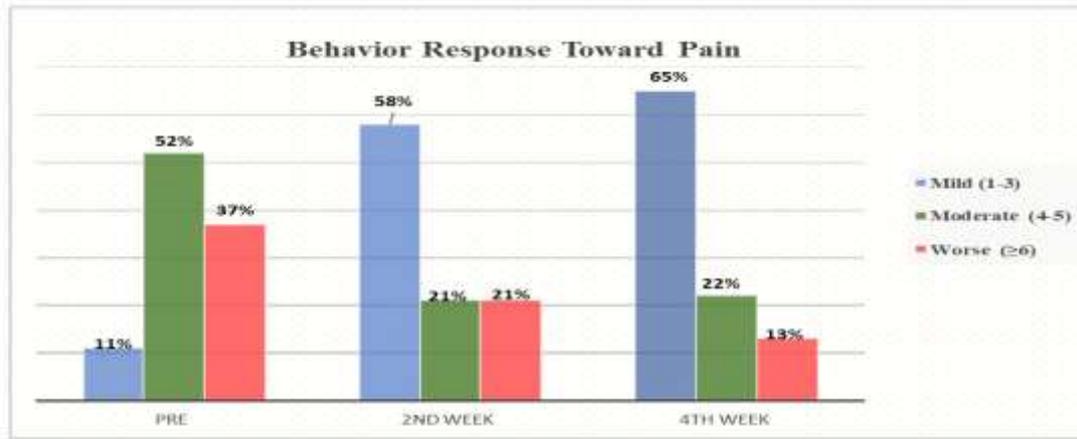


Figure (2): Distribution of studied patients according to their levels of behavior response toward pain intensity pre and post (PCPI).

Table (3): Mean, SD deviation and significant difference of numeric pain intensity rating scale of the studied patient pre and post palliative care protocol intervention (PCPI) (n = 100)

Pain intensity	Pre		Post (PCPI)				p1 value	p2 value	p3 value
			2 nd week		4 th week				
	No.	%	No.	%	No.	%			
Mild	16	16.0	50	50.0	62	62.0	$\chi^2=26.292^*$ ($<0.001^*$)	$\chi^2=48.250^*$ ($<0.001^*$)	$\chi^2=7.884^*$ (0.019^*)
Moderate	45	45.0	25	25.0	28	28.0			
Severe	39	39.0	25	25.0	10	10.0			
Mean ± SD	7.06 ± 2.60		3.94 ± 2.28		2.68 ± 2.15		$<0.001^*$	$<0.001^*$	$<0.001^*$

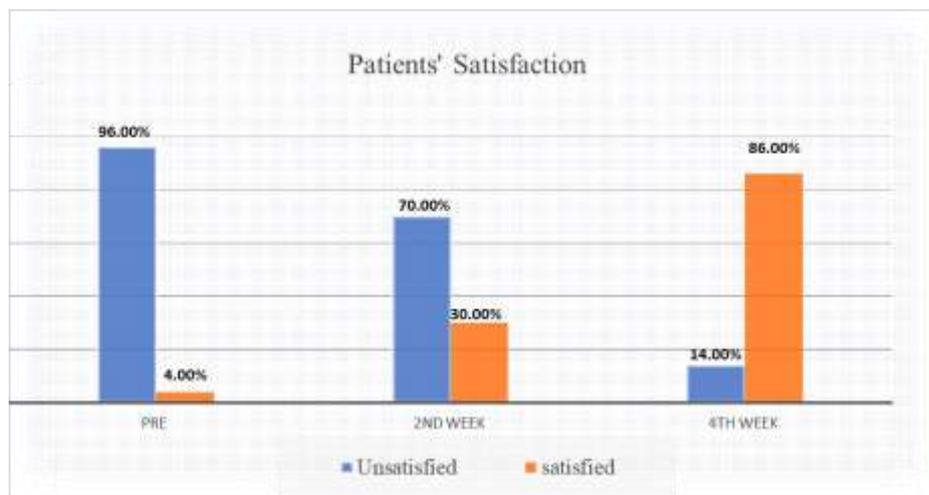


Figure (3): Frequency and percentage distribution of studied patients regarding their total satisfactions assessment score (n=100).

Discussion

Management of pain is a paramount aspect of health care involving relief of pain and control it by various dimensions. The essential goal of palliative care is achievement of the best quality of patient's life (**National Cancer Institute, 2019**). Palliative care is the active of holistic care for patients with advanced and progressive illness. Many aspects of palliative care are also applicable earlier in the course of the illness in conjunction with other treatments (**Elshamy, 2019**).

First part; Regarding to demographic characteristics of the patients, the present study showed that two third of studied patients' ages range between 50 to more than 60 years old, this finding is similar to **Aboul Enien et al. (2018)**, in a study entitled as "impact of surgery and treatment modality in breast cancer" which reported that nearly half of the studied patients were 50-60 years.

This finding is similar to **El-sayed, (2021)** in a study entitled as " effect of self-care guidelines on symptoms burden for patients with lung cancer undergoing chemotherapy" who reported that half of the patient who had lung cancer were adult age from 50-59 years old. This finding also disagreed with a study done by **Quinn et al., (2020)**, in a study entitled as "association between palliative care and health outcomes among adults with terminal cancer illness" which reported that the median age of the study cohort was 83 years old.

Regarding gender and marital status, the current study illustrated that two third of studied patients were females and married, it can be attributed to the high exposure to life stressors for the female hormones (estrogen) and obesity which play an important part in the cancer cause, this finding is congruent with **Nayak et al., (2017)** in a study entitled "quality of life among cancer patients in Indian" which found that more than half of patients were females and most of them were married.

Regarding educational levels and residence among the studied patients, the results showed that nearly half of studied patients were intermediate education and most of them were residents in rural areas, it may be attributed to exposure to organophosphorus and carbamate pesticides and environmental carcinogens such as aflatoxin are additive risk factors to current HCV and HBV infection. Also, the high incidence of non-municipal water supply may carry certain pollutants or metals that are still undetermined as risk factors (such as arsenic).

This finding is supported by **Farahat, (2020)** in a study entitled "assess effect of a palliative nursing interventions on symptoms intensity among patients with advanced Cancer" in Oncology Department of Menoufia University Hospital who reported that the majority of patients had secondary or intermediate education and were from rural areas. This study is disagreed with a study by **El-sayed, (2021)** who reported that most patients were residents in urban areas.

Regarding to the smoking, the present study revealed that more than half of them were not smoker. This could be attributed with most of patients were females, this finding is consistent with a study was done by **Farahat, (2020)** who reported that two third of studied patients were no smoker.

Regarding treatment cost, the current study showed that more than half of studied patient were treated by health insurance due to high cost of treatment and most patients had health insurance, this in the same line with **Alorabi & Elghazawy, (2018)** in study entitled "Cancer Control in Egypt" which reported that patients with cancer in Egypt receive their treatment in General Authority for Health Insurance hospitals, in Ministry of Health and Population or university hospitals at the government's expense.

These findings also are agreement with a study supported by **Bayumi& Mohamed (2019)**, entitled "factors affecting quality of life

among cancer patients with chemotherapy at Qena university hospital in upper Egypt", who mentioned that the majority of studied patients hadn't enough monthly income and treated by health insurance.

Regarding medical history, the current study results showed that one quarter of patients had acute myeloid leukemia and nearly one quarter of them had cancer in GIT. The researcher opinion is gastrointestinal cancer is one of the most prevalent cancers in the worldwide with a highest mortality rate and its incidence is different in the world. This result supported with **Janah et al., (2019)**, who carried out a study entitled "Access to palliative care for cancer patients between diagnosis and death" who mentioned that about one third of studied patients had cancer localized in GIT, this findings also are supported with a study by **Seo et al., (2018)**, about "Assessment of the awareness and knowledge of cancer survivors regarding the components of metabolic syndrome" who found that one quarter of patients had acute myeloid leukemia.

Regarding to the first time of diagnosis of cancer and site of metastases, the current study reported that nearly half of studied patients diagnosed from 5 to less than 10years old with metastatic in liver due to not responding to chemotherapy or radiotherapy and spread of malignant cell. It may be due to a delay in seeking medical advice and a lack of cancer screening programs in high-risk groups. This result supported with **Janah et al., (2019)**, who mentioned that half of the studied patients had a metastatic cancer in the liver. Also, this result is consistent with **Quang, (2019)**, in a study entitled "patients hospitalized in the Department of Oncology and Palliative Care" at Hanoi Medical University Hospital, who found that three quarter of patients had locally advanced or metastatic disease.

Regarding to current prescribed pain medication, the present study showed that one

third of them had morphine 10-20mg and quarter of studied patients had taken prescribed duragesic patch for pain management before conducting palliative care protocol, this result as the same line with a study was done by **Nderitu, (2014)**, entitled "pain management practice and their effect on performance of activities of living among adult cancer patients" who represented that the most of participated patients experienced pain and used pain killer to manage pain by administration of morphine which is strong opioid.

Regarding to patients' knowledge, it was observed that the total mean score of studied patients was unsatisfactory in pre protocol which improved on 2nd and 4th week post palliative care protocol intervention with high statistically significant improvements. It might be attributed to the effectiveness of protocol intervention on enhancing knowledge about cancer. This finding is consistent with a study was conducted by **Aziz (2011)** entitled "Patient Education effect on the quality of life of patients with cancer" who stated an unsatisfactory level of total knowledge of the studied patients regarding disease and its management before educational intervention and a high statistically significant differences in patient's level of knowledge pre and post one and six months post educational intervention about cancer.

Regarding mean numeric pain intensity rating scale, the current study showed that nearly half of the studied patients had moderate level of pain intensity and one third of them had severe pain by using numerical pain scale pre palliative care protocol intervention, the findings are supported in a study by **Su WC et al., (2021)** entitled effects of Good Pain Management (GPM) program on patterns of care and pain control in patients with cancer pain in Taiwan" which mentioned that a great decrease in the mean numerical rating scale (NRS) score and low proportion of moderate-severe pain to mild pain with high pain

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management and increased patients satisfaction toward pain management.

These findings are supported by **Koesel et al., (2019)**, in a study about "The integration of the American Society of Clinical Oncology (ASCO) and oncology palliative care guidelines into an interprofessional outpatient palliative care setting" that demonstrated a significant decrease in pain, anxiety and fatigue in patients with advanced cancer over time. A comprehensive interprofessional palliative care approach is recommended to improve symptom distress and quality of life in this vulnerable patient population.

Regarding the patient's behavior response toward pain intensity, the current study showed the majority of patients had moderate to severe behavior response toward pain by using visual analogue scale pre palliative care protocol which improved to mild behavior response on 2nd and 4th week post implementation of palliative care protocol intervention with high statistically significant differences. These findings of the current study are supported the stated hypotheses and revealed that pain intensity score reduced post palliative care protocol intervention. This finding is in the same line with **Elsayed, (2021)**, who illustrated that about two-thirds of studied patients had severe behavior response toward pain interference with life pre-implementation of self-care guidelines, which improved to less than a quarter with a high significant difference post-implementation of self-care guidelines.

Regarding patients' satisfaction about palliative care FAMCARE, the current study revealed that most of the studied patients were dissatisfied pre palliative care protocol which improved to be satisfied on 2nd and 4th week post palliative care protocol. it may be attributed to that palliative care protocol had a positive effect on reducing and controlled of pain which improve quality of life and satisfaction. This finding is supported by **kim et al., (2016)** in a study entitled "Palliative care of terminal versus

advanced cancer" who found that palliative care that provides psychosocial support and controls symptoms is the main treatment option for patients with terminal cancer. These results are congruent with **Almomani (2020)** in a study entitled "Patients' satisfaction of health service quality in public hospitals" which revealed that there was significant effect of health service quality dimensions on patient satisfaction in public hospitals after explained dimension of medical services related to disease from health care workers.

Conclusion

The communication skills improved the patients' knowledge about cancer and palliative care post palliative care protocol intervention. Also, there were reducing of pain intensity and behavior response toward pain among studied patients on 2nd and 4th week post palliative care protocol intervention. Concerning their level of patients' satisfaction compared with before, it was improved on 2nd & 4th week post palliative care protocol interventions.

Recommendations

- Applying ongoing a palliative nursing intervention among cancer patients to manage their pain and reduce symptoms.
- Palliative nursing intervention should be included with routinely care in the management of patients' symptoms with advanced cancer besides the conventional therapy as patient centered care
- Developing palliative care protocol should be implemented all oncology institutions by collaborating with multidisciplinary team.
- Developing and implementing strategies of regular team conferences and psychological rounds to improve communication skills for patient with advanced cancer.
- Conducting the same study on larger sample of advanced cancer patients to detect their problems and allowing generalization.

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تأثير بروتوكول الرعاية التلطيفية للتحكم في الألم بين مرضى السرطان

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الرعاية التلطيفية هي رعاية طبية متخصصة لمرضى السرطان والتي تركز على تحسين جودة حياة ورضا المرضى عن طريق الحد من آلامهم. لذلك هدفت الدراسة إلى تقييم تأثير بروتوكول الرعاية التلطيفية على نتائج مرضى السرطان. تم استخدام تصميم شبه تجريبي لإجراء الدراسة. أجريت هذه الدراسة في عيادة الرعاية التلطيفية لمرضى العيادات الخارجية والقسم الداخلي في وحدة الأورام في مستشفى بنها الجامعي والمعهد القومي للأورام بالقاهرة. تم تطبيق هذه الدراسة على ١٠٠ مريضا بالغا مصابا بالسرطان من كلا الجنسين. كشفت النتائج وجود تحسن ذات دلالة إحصائية عالية في معرفة المرضى في الأسبوعين الثاني والرابع من تدخل بروتوكول الرعاية التلطيفية بعد التدخل حول السرطان والرعاية التلطيفية. كما انخفضت شدة الألم لدى المرضى الخاضعين للدراسة في الأسبوعين الثاني والرابع بعد تدخل بروتوكول الرعاية التلطيفية مع وجود فروق ذات دلالة إحصائية عالية في سلوكهم ورضاهم. أوصت الدراسة بتطبيق التدخل التمريضي التلطيفي المستمر بين مرضى السرطان لمساعدتهم على إدارة الألم وتقليل الأعراض.