Effect of nursing intervention guidelines regarding Oncology Patient Health Outcome

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ABSTRACT

Background: Cancer-related pain is one of the greatest scared consequences of cancer and its treatment. Also, cancer patients having recurrent interaction with a variety of health providers, their pain is commonly uncontrolled. Cancer-related pain identified as vital symptoms that influence on the quality of life among cancer patients. ***Aim:*** The aim of this study is to evaluate the effect of pain nursing intervention guidelines on oncology patients' health outcome. ***Research design:*** Quasi experimental design was used in this study. ***Sample:*** A purposive sample of 94 cancer patients with a pain reported 4 or more on a 0 to 10 numeric screening scale. ***Setting:*** The study was conducted in oncology unit at Mansoura University and Port Saied General Hospitals. ***Methods:*** The study implement the National Comprehensive Cancer Network guidelines for cancer related pain, brief pain inventory and Pain management barriers were measured at baseline, one month, and three months after applying the intervention guidelines. ***Results:*** Participants experienced significant improvements in pain degrees at one-month assessment, and these improvements were continued at three-months assessment. ***Conclusion:*** The nursing intervention practice based on the National Comprehensive Cancer Network fatigue guideline was effective in reducing pain severity. ***Recommendation:*** Pain should be assessed at least twice per day for cancer patient. Also, the patients need to receive educational materials for pain management and to reduce the barriers

Key words: Cancer-, care guideline- oncology, health outcome, nursing intervention

INTRODUCTION

Cancer pain classified in different methods: according to the location (somatic, neuropathic, or visceral), and due to the pattern (continuous and incident or fast and short breakthrough pain) and related to the pain duration (acute or chronic). Cancer pain treatment is very complicated when it comes to neuropathic pain and pain with breakthrough.

Pathophysiology Cancer pain is complex by the interfering between the cancer cells, nervous system, and the immune system, it involves nociceptive and neuropathic pain. Nociceptive pain may be divided to somatic pain and visceral pain. Somatic pain results from the decrease irritability threshold in nociceptors located in superficial structures on the other hand, visceral pain results from organs located within body cavities. Pain associated with mucositis, surgical wound or muscle spasm is examples of somatic cancer pain. Several mechanisms cause cancer pain: nociceptive mediators may release by cytokines which produced by tumor and tumor necrosis factors. Indeed, tissue damage, producing sensitization and hyperalgesia lead to the proteolytic activity. (Fitzgibbon, & Loeser, 2012; Oosterling, Boveldt, Verhagen, van der Graaf, Van Ham, Van der Drift, et al., 2016).

Visceral pain described through different mechanisms, Tumor invasion, compression of visceral blood supply, distension and contraction of visceral walls, extending of the capsules of solid visceral organs, compression or traction of ligaments, vessels, or mesentery, formation of inflammatory mediators released because of tumor infiltration, compression of neural structures supplying the viscera, and stretching of serosal or mucosal surfaces. One of the chronic pain types is neuropathic pain which consequences of the somatosensory nervous system dysfunction. Neuropathic pain may be classified to peripheral and central neuropathic pain. Peripheral damage lead to peripheral neuropathic pain. on the other hand injury to the brain or spinal cord, impairing central nervous system pain processing and causing central neuropathy results from (Fitzgibbon, & Loeser, 2012; Das, 2015).

Cancer related pain management needs regularly exertions of health care providers on hospitals and home through providing pain screening, assessment. Treatment and follow up. Management of cancer pain involves harmonized multidisciplinary and biopsychosocial approach to be effective. Indeed, Appropriate assessment, pharmacological and non-pharmacological management in addition to enhance personal's physical, psychological, social and spiritual requirements.

Measuring pain still do not perform usually, excluding for study purposes. Insufficient knowledge and practice regarding cancer pain assessment were often found in both the patients and the health care providers and caused inadequate pain management(Van Den Beuken-Van Everdingen, Hochstenbach, Joosten, Tjan-Heijnen, & Janssen, 2016; Besse, Vernooij-Dassen, Vissers, & Engels, 2016; Kasasbeh, McCabe, & Payne, 2017).

The one of the most effective pharmacological management for cancer pain are the oral analgesics. World Health Organization (WHO) stated a 3-step cancer pain ladder to enhance and guide usage of oral non-opioids and opioids in treating mild, moderate and severe cancer pain. It is suggested that cancer pain can be well controlled if administering the right does of oral analgesics on an around-clock depend on the pain assessment and using combined with adjuvants to control fear and anxiety of patients (World Health Organization, 2015).

Non-pharmacological cancer pain management are a critical but frequently omitted element. Non-pharmacological management, for example cognitive-behavior, musical, herb therapy, superficial heating or cooling, have been stated as the effectively approaches in reducing the severity pain. Although the non-pharmacological management could not able to alteration the causal pathology or alteration the perception or sensations of pain, on the other hand its help in different methods to reduce pain severity and encourage the patients to deal positively and proactively with the pain. (Smith & Saiki, 2015; Xu, Luckett, Wang, Melanie, & Phillips, 2018).

Cancer patients around the world reported significant barriers to cancer pain management, these barriers lead to inadequate pain management. pain and pain management misconceptions among cancer patients are the vital causes of Patients' barriers to pain management. Cancer patients who suffering from pain might choose not to use resources available to manage pain because of erroneous beliefs. the studies confirmed that cancer patients are still uncomfortable with discussing many of their symptoms in the clinical setting, even when the symptoms are bothersome (Oldenmenger, Geerling, Mostovaya, Vissers, de Graeff, Reyners, & van der Linden, 2018; Penalba, Deshields & Klinkenberg, 2019).

National Comprehensive Cancer Network (NCCN) is one of the significant references for oncology nurses. The NCCN guidelines for pain and survivor ship remain the most frequently updated and widely circulated resources for multidisciplinary clinician decision making about screening, evaluating, and managing pain throughout the cancer treatment. The NCCN guidelines (2016) using classified evidence

recommend a sum of interventions for patients on active cancer treatment. These are generally classified to patient/family education, general approaches for management of pain; non-pharmacological and pharmacological management (Berger, Sandra, & Jacobsen, 2015).

Significant of the study

Cancer pain is more common in patients with advanced or metastatic cancer as about 91% of cancer patients experienced pain with varying degree of severity. Nearly 90% of cancer patients report interference in daily activity caused by pain. Pain, even when treated, is often severe enough to impair their ability to function. Therefore, this study will evaluate the impact of implementing pain nursing intervention guidelines on oncology patient health outcome and determine barriers that could affect oncology patient response to nursing intervention. This intervention demonstrates modification by translating the pain guidelines as developed by the National Comprehensive Cancer Network (NCCN) into clinical practice (NCCN, 2016; Tegegn, & Gebreyohannes, 2017).

Operational definition:

Patient health outcome: Patient health outcomes are the changes in pain severity and pain management barriers score.

AIM OF STUDY:-

This study was designed to: Evaluate the effect of nursing intervention guidelines regarding of oncology patient health outcome at the clinical oncology and nuclear medicine department at main Mansoura university hospital.

Objectives:

1. Assess level of oncology patients' pain.
2. Adapt nursing care guidelines of pain for oncology patients
3. Identify barriers of pain management in oncology patients
4. Implemented adapted nursing care guidelines of pain for oncology patients
5. Assess effect of applying nursing care guidelines for pain on oncology patient’s health outcome.

Research hypotheses

The pain nursing intervention guidelines will have a positive effect on oncology patient's health outcome.

SUBJECTS AND METHOD:-

Design: A quasi-experimental research design was utilized in the conduction of the current study to evaluate the impact of implementing pain nursing intervention guidelines on oncology patient health outcome.

Setting:

The study was conducted in oncology unit at Mansoura University and Port Saied General Hospitals.

Subjects:

A purposive sample of 94 adult cancer patients with pain that calculated according to the equation of **Dobson, (1984).**

Included criteria:

- Able to communicate verbally.
- Diagnosis of cancer at least of 1 month before study entry (to avoid patients experiencing the distress of initial diagnosis, and to restrict patients to those with solid tumors with some degree of common treatment regimens and who are being seen and treated as outpatients.

Excluded criteria:

- patients with later-stage disease who may experience rapid progression
- Patients with pain ratings of ≤4 on a 0 to 10 numeric screening scale to target those with moderate to severe symptom intensity.

Sample size:

- The sample size was determined using the following equation **(Dobson, 1984):** Since the prevalence and Pain among Oncology Patient was 94% this substituting in the following equation:

$$\text{Sample size (n)} = \frac{Z^2}{\Delta^2} P(100 - P)$$

n=sample size

p= prevalence of Fatigue among Oncology Patient was 94%

Z= a percentile of the standard normal distribution by 95% confidence level = 1.96

Δ^2 = the width of the confidence interval = 5.0

The calculated sample size is 86 patients. Due to the expected non-participating rate (10%), the final sample size will be 94 patients with pain among Oncology Patients.

Data collection tools

Three tools were used in data collecting as the following:

1. **Tool one: The pain Intensity Rating Scale** developed by **Freyd in 1923** is an unidimensional tool consists of 11-item numeric rating scale which measures the pain subjective on a (0= 'no pain' to 10= 'worst') scale. It was reported by patients as an assessment tool to certify that patients had moderate to severe levels of pain (≥ 4–10) to be suitable for the study.

2. **Tool two: Pain assessment scale**

3. **was developed**

1. **The Brief Pain Inventory (BPI) short form:** This scale is used to measure pain severity and pain-related interference in patients diagnosed with cancer ***(Chaudakshetrin, 2009)***. it also identifies the location of pain, medications, and the amount of pain relief in the past 24 hours or the past week. The pain severity are assessed though four items which were (worst pain in last 24 hours, least pain in last 24 hours, pain on average and pain right now) .The pain related interference used to assess pain-related interference in seven areas: general activity, mood, walking ability, normal work including outside the home and housework, relations with other people, enjoyment of life, and sleep. It was translated into Arabic and verified using the back-translation approach.

Scoring: no scoring algorithm, but "worst pain" or the arithmetic mean of the four severity items used as measures of pain severity; the arithmetic means of the seven interference items used as a measure of pain interference. The potent analgesic level for each participant was determined as follows: 1, no analgesic drug; 2, non-opioid; 3, weak opioid; and 4, strong opioid, based on the WHO ladder

4. Tool three: Pain barriers questionnaire.

The Pain Barriers Questionnaire (BQ II): (BQ II) was developed by Gunnarsdottir et al. (2002) It consists of 27 questions about patients' barriers to pain management that measures four factors: the first factor, physiologic effects consists of 12 items addressing the beliefs that side effects of analgesics are inevitable and unmanageable, concern about tolerance, and concern about not being able to monitor changes in one's body when taking strong pain medications. The second factor, fatalism consist of three items addressing fatalistic beliefs about cancer pain and it's management .The third factor, Communication consists of six items addressing the concern that reports of pain distract the physician from treating the underlying disease, and the belief that 'good' patient don't complain of pain. Finally, the fourth factor, harmful effects consists of six items addressing fear of becoming addicted to pain medications and the belief that pain medications harm the immune system.

Scoring: Five-point Likert scale used to assess barriers to pain management as: 1=strongly agree, 2= agree, 3= natural, 4= disagree and 5= strongly disagree.

Patients' personal demographic characteristics as age, gender, occupation, level of education, and marital status will be added to study tools.

Operational design

The operational design, which was the second phase of the present study, it was included description of the study preparatory phase, the pilot study and the fieldwork.

Preparatory phase:

During this phase, the researcher reviewed local and international related literature using internet search, textbooks and scientific journals. This helped in increasing acquaintance with the study subject and in the preparation of the data collection tools.

Content validity:

Once the tools were prepared in their preliminary form, they were presented to a panel of 13 expertise in medical and nursing academic staff. Also from medical and nursing staff in hospital who provide the direct care for patient with NHL for content validation. The tools were then adjusted based upon the recommendations of these experts.

Reliability:

Cronbach's alpha-coefficient was calculated for Arabic translated tools which were high reliability for all tools as following:

- Pain Intensity Scale which reliability was R= 0.851,
- The Brief Pain Inventory (BPI) reliability was R=0.900
- The Pain Barriers Questionnaire (BQ II) reliability was R=0.977

Pilot study:

A pilot study was carried before starting the data collection. It conducted on (10%) of study sample (10 patient) with cancer patients with pain who fulfill the study criteria attending at Clinical Oncology and Nuclear Medicine Department at Main Mansoura University Hospital and The main Port Said Hospital. Based on the findings of the pilot study were not included in the main sample since some modifications were done in the tools in the form of rephrasing some items.

Field work: -

This study was achieved through four phases, namely assessment, planning, implementation and evaluation.

Assessment phase:

This phase involved preparation of the tools to assess cancer patient pain intensity and patient-reported barriers to pain management. After obtaining the patient consent, individual interviews were done with the cancer patients with pain in the hospitals at the time of visiting according to hospital policy. Each interview took approximately 30-45 minutes for filling out the tools. The data collected was used as base-line data that served in implementing the pain nursing intervention guidelines and later evaluation of the guidelines effectiveness at post and follow- up assessment.

Planning phase:

The researcher demonstrates innovation by translating the evidence-based guidelines for pain as developed by the National Comprehensive Cancer Network (NCCN) into clinical practice. The guideline general aim was to improve patient outcome about pain. A teaching material packet was also provided, and it included the National Comprehensive Cancer Network (NCCN) guidelines for patients on pain and

"booklet," which provide educational materials definition, signs &symptoms, predisposing factors, and management for cancer related pain.

Intervention Phase:

Implementation of the guideline was carried out at inpatient and outpatient chemotherapy clinics in the study setting, was done through individual teaching. Each patient received four educational sessions. At each session, information about pain assessment and pain management, was provided each session range from 30-45 minute. At beginning of the first session of the intervention the patients were oriented about the guidelines' objectives, contents, purpose and its impact. The intervention was implemented four days per week (Sunday, Monday, Wednesday and Thursday) during a period from August 2018 to August 2019.

The researcher adapted nursing intervention of NCCN guidelines after assessing the participants individually for fatigue and it include the following: -

- Provide nonpharmacological comfort measures (as massage for effective area with baby oil, hot compression by bottles filled with warm water, demonstrate deep breathing and relaxation techniques or destructive the patient by listening to Quran or music or watching TV).
- Give health education about cancer pain, pain management and pain management barriers

Following the intervention and beginning at one-month post-accrual, all patients were retained and supported through bi-weekly phone contacts.

Evaluation Phase:

After the guideline implementation, Outcome measures as pain assessment and pain management barriers were collected at baseline and repeated later at one- and three-months post-accrual to evaluate the effect of the guideline on the patient outcome.

Administrative design

Official letters from the faculty of nursing, Port- Said University, were addressed to the General Directors of the Oncology institute, and permission was obtained to conduct the study after explanation of the study objectives.

Ethical Considerations:

The research and research committee in the Faculty of Nursing approved the study protocol. The purpose and procedures of the study was explained clearly and simply to

every patient invited to participate in the study to obtain her/his consent. The researcher assured the patient that the information will be used only for the purpose of the study and will be strictly confidential. They were informed about their right to refuse to participate or withdraw at any time without giving reason and with no consequences on the care.

Statistical design:

Data entry and statistical analysis were done using SPSS version 20.0 statistical software packages. Data were presented using descriptive statistics in the form of number, percentages, &standard division for quantitative variables.

RESULT:

Table (1) : shows that about third of studied patients (34%) in age group from 51 to 56 years old. Female were (55.3%) of the participants, (28.7%) were not educated, most of the participants (71.3%) were married, and house wife were (42.6%) from them.

Table(2): showed that there were statistically significant differences between pain intensity at baseline assessment and both at one month and at three months from applying the guidelines P< 0.001.

Table (3): present that at the baseline assessment, the total mean ±SD of the pain intensity was 7.54±1.15 and it decrease immediately after one month which was total mean ±SD 5.74±0.95. In addition, after three months of applying the guidelines total mean ±SD slightly elevated to be 6.49±0.94. There were statistically significant differences between pain intensity at the three assessment phases P< 0.001.

Table (4): were compared with pain severity: age, gender, education level, Marital status, occupation income and residence among the different assessment phases of the program. None of the test results showed a significant difference when compared by pain severity at the three assessment phases of the study. whoever result indicated that pain severity score was the higher in the age from 20 to 35 years old, among female, illiterate subjects and housewives.

Table (5): showed the second part (sub-scale) of the BPI. At baseline assessment, it was found that the means ±SD for the seven sub-scales scores were 7.07±0.33, which may

be a high level of interference. whoever at one-month assessment, the seven sub-scales mean ±SD decreased to be 5.34±0.23. the high level of interference were life enjoyments and sleep with Mean ±SD 5.72, while it elevated slightly at 3 months assessment phase which was 5.86±0.24. There were statistically significant differences between pain interference at the three assessment phases P< 0.001.

Table (6): were compared with pain interference: age, gender, education level, Marital status, occupation income and residence among the different phases of the program. None of the test results showed a significant difference except for occupation (p = <0.05) when compared by pain interference in three assessment phases.

Table (7): showed that at baseline assessment the communication aspects were the higher barriers with the highest mean score ± SD 3.17±0.05. while at the one-month assessment and after three months assessment the fatalism aspect was the higher barrier with the highest mean ± SD 2.65±0.15, 2.24±0.05 respectively.

The table showed that the all barriers aspects mean were lowest score in the Follow up program and the post program less than pre-program barriers aspect. Also, the tabled showed highly significant between all aspects at all assessment phases.

Table (1): distribution of personnel characteristics of the studied patients (n=94).

Variable	No	%
Age		
20-35 years	23	24.5
36-50 years	22	23.4
51-65 years in years	32	34.0
> 65 years	17	18.1
Gender		
Male	42	44.7
Female	52	55.3
Level of education		
Illiterate	27	28.7
Read and write	10	10.6
Essential education	8	8.5
Secondary education	26	27.7
University graduate	21	22.4
Post graduate study	2	2.1
Marital status		
Single	16	17.0
Divorced	3	3.2
Married	67	71.3
Widow/widower	8	8.5
Occupation		
Officer work	21	22.3
Manual work	20	21.3
House wife	40	42.6
not working	13	13.8

Table (2): Pain intensity scale among the studied patient at different study phases of the program.

Scale	baseline	after 1 month	Paired t test (1)	P value	baseline	after 3 months	Paired t test (2)	P value
	Mean ±SD	Mean ±SD			Mean ±SD	Mean ±SD		
Pain Intensity Scale	7.45±1.66	5.56±2.01	14.34	<0.001**	7.45±1.66	6.05±2.12	9.85	<0.001**

Table (3): pain intensity among the studied subjects through the study phases.

variable	baseline	after 1 month	Paired t test (1)	P value	baseline	after 3 months	Paired t test (2)	P value
	Mean ±SD	Mean ±SD			Mean ±SD	Mean ±SD		
Worst pain	8.83±0.99	6.86±1.66	14.502	<0.001**	8.83±0.99	7.67±1.51	8.696	<0.001**
Lowest pain	6.08±1.75	4.56±1.84	8.393	<0.001**	6.07±1.75	5.47±1.90	3.521	<0.001**
Average pain	7.90±1.17	5.99±1.70	16.074	<0.001**	7.90±1.17	6.78±1.60	10.061	<0.001**
Pain now	7.35±1.7	5.56±2.01	11.655	<0.001**	7.35±1.70	6.05±2.12	7.499	<0.001**
Total (mean)	7.54±1.15	5.74±0.95	15.26	<0.001**	7.54±1.15	6.49±0.94	9.66	<0.001**

Table (4): Correlation between personal's characteristics and pain severity in the studied subjects.

Variable	pain severity		
	Baseline	**After 1 month**	**After 3 months**
	Mean ±SD	**Mean ±SD**	**Mean ±SD**
Age			
20-35 years	30.78±5.10	24.00±6.59	26.91±7.50
36-50 years	30.32±5.95	23.00±7.43	26.59±6.28
51-65 years in years	29.31±4.60	22.25±7.10	25.03±6.75
> 65 years	30.75±4.46	22.75±6.63	25.69±5.44
F test p value	0.997 >0.05	0.286 >0.05	0.442 >0.05
Gender			
Male	29.45±5.10	22.76±6.51	26.09±6.55
Female	30.75±4.91	23.10±7.26	25.88±6.67
Independent t test	1.23 >0.05	0.235 >0.05	1.55 >0.05
Level of education			
Illiterate	30.89±5.17	24.07±7.40	27.52±5.91
Read and write	29.30±3.74	20.60±6.67	23.70±5.58
Basic education	29.75±5.55	21.62±6.59	24.13±6.83
Secondary education	30.50±4.62	22.81±6.51	25.58±6.46
Bachelor	29.41±5.77	23.27±7.19	26.27±7.79
F test p value	0.373 >0.05	0.549 >0.05	0.858 >0.05
Marital status			
Single	30.44±5.55	23.56±6.14	26.50±6.94
Divorced	30.00±4.24	19.50±7.78	22.00±8.49
Married	30.07±5.12	23.01±7.26	26.09±6.72
Widow/widower	30.38±3.70	22.00±5.81	25.00±4.78
F test p value	0.028 >0.05	0.255 >0.05	0.335 >0.05
Occupation			
Officer work	29.81±5.36	22.90±6.67	25.57±7.201
Manual work	29.75±4.64	21.20±6.24	25.00±5.96
House wife	31.38±4.72	24.18±7.23	27.18±6.29
not working	27.70±5.28	22.00±7.23	24.54±7.40
F test p value	1.96 >0.05	0.922 >0.05	0.810 >0.05

Table (5): Pain interference among the studied subjects at different study phases.

	baseline and after 1 month		**Paired t test (1)**	**P value**	**baseline and after 3 months**		**Paired t test (2)**	**P value**
	Mean ±SD	**Mean ±SD**			**Mean ±SD**	**Mean ±SD**		
General activities	7.10±2.25	5.39±2.22	16.563	<0.001**	7.10±2.25	5.53±1.99	9.206	<0.001**
Mood	7.02±2.32	5.25±2.28	17.878	<0.001**	7.02±2.31	5.56±2.25	10.402	<0.001**
Walking ability	7.10±2.37	5.27±2.25	17.701	<0.001**	7.097±2.37	5.95±2.53	8.693	<0.001**
Normal work	7.31±2.31	5.31±2.14	14.908	<0.001**	7.31±2.31	6.08±2.41	9.377	<0.001**
Relation with other	6.35±2.33	4.98±2.23	12.260	<0.001**	6.35±2.33	5.77±2.20	4.238	<0.001**
Sleep	7.33±2.25	5.47±2.02	15.023	<0.001**	7.33±2.25	6.03±2.39	11.099	<0.001**
Life enjoyments	7.29±2.35	5.72±2.21	14.322	<0.001**	7.29±2.35	6.13±2.423	10.309	<0.001**
Total	7.07±0.33	5.34±0.23	22.33	<0.001**	7.07±0.34	5.86±0.24	10.08	<0.001**

Table (6): Correlation between personal's characteristics and pain interference among the studied subjects.

Variable	Pain interface		
	Baseline	After 1 month	After 3 months
Age			
20-35 years	48.87±13.60	38.61±12.70	39.65±12.39
36-50 years	49.91±14.97	36.82±14.46	39.91±14.75
51-65 years in years	46.56±16.49	33.78±14.71	38.72±14.65
> 65 years	55.75±11.40	43.63±12.22	49.25±11.96
F test p value	**1.41 >0.05**	**1.89 >0.05**	**2.34 >0.05**
Gender			
Male	47.07±15.23	35.26±13.41	38.17±13.30
Female	51.51±14.21	39.14±14.31	43.41±14.26
Independent t test	**1.44 >0.05**	**1.34 >0.05**	**1.83 >0.05**
Level of education			
Illiterate	54.81±12.48	42.81±13.71	47.00±13.46
Read and write	51.00±15.23	37.40±15.28	42.00±13.65
Essential education	43.00±18.24	32.38±13.45	35.38±13.93
Secondary education	48.08±14.97	35.88±13.54	39.27±15.06
University graduate	46.36±14.83	34.31±13.57	37.45±12.06
F test p value	**1.63 >0.05**	**1.66 >0.05**	**2.12 >0.05**
Marital status			
Single	47.75±15.08	37.56±14.71	37.50±14.96
Divorced	46.00±15.56	32.50±14.85	36.00±15.56
Married	49.03±15.18	36.64±14.23	41.03±13.91
Widow/widower	57.88±9.05	44.50±9.53	49.50±11.14
F test p value	**0.992 >0.05**	**0.823 >0.05**	**1.41 >0.05**
Occupation			
Officer work	46.48±15.53	33.67±13.28	37.14±13.64
Manual work	42.05±12.95	30.25±11.30	33.25±10.91
House wife	54.10±13.89	41.95±13.98	45.82±13.85
not working	52.08±14.50	40.69±13.91	45.00±13.42
F test p value	**3.67 <0.05***	**4.27 <0.05***	**5.05<0.05***

Table (7): distribution of mean score of pain management barriers questionnaire subscales different assessment phases among the studied subjects.

Variable	baseline	after 1 month	Paired t test (1)	P value	baseline	after 3 months	Paired t test (2)	P value
	Mean ±SD	Mean ±SD			Mean ±SD	Mean ±SD		
Fatalism	3.15±0.08	2.65±0.15	8.876	<0.001**	3.15±0.08	2.24±0.05	11.216	<0.001**
Communication	3.17±0.05	2.62±0.07	13.246	<0.001**	3.17±0.05	2.15±0.13	15.879	<0.001**
Physiological effect	3.09±0.15	2.53±0.11	13.461	<0.001**	3.09±0.15	2.14±0.18	15.044	<0.001**
Harmful effect	2.99±0.12	2.55±0.14	8.192	<0.001**	2.99±0.12	2.17±0.16	11.140	<0.001**

Table (8): Correlation between personal's characteristics and pain management barriers

Variable	Total pain management barriers		
	Baseline	After 1 month	After 3 months
	Mean ±SD	Mean ±SD	Mean ±SD
Age			
20-35 years	76.22±21.02	53.78±17.92	44.70±15.71
36-50 years	82.91±24.68	71.91±21.17	61.68±21.46
51-65 years in years	82.78±20.75	67.91±15.04	57.41±11.84
> 65 years	96.81±17.78	77.13±18.62	61.19±19.59
F test p value	**2.98 -- p <0.05***	**3.57 ----p<0.05***	**4.32 ---- p<0.05***
Gender			
Male	81.88±21.11	67.74±16.39	56.98±14.82
Female	85.02±22.88	70.80±19.67	59.57±18.31
Independent t test	**0.682 ---> 0.05**	**0.806 ---> 0.05**	**0.755 ---> 0.05**
Level of education			
Illiterate	92.74±18.93	77.11±18.15	63.59±17.35
Read and write	82.90±23.29	66.30±16.21	54.20±11.07
Essential education	71.50±26.90	67.13±21.73	60.38±20.52
Secondary education	79.88±24.05	66.62±18.08	56.85±18.36
University graduate	81.50±18.35	65.55±16.76	55.05±14.40
F test p value	**2.09 ---> 0.05**	**1.76 ---> 0.05**	**1.11 ---> 0.05**

Variable	Total pain management barriers cont.		
	Baseline	**After 1 month**	**After 3 months**
	Mean ±SD	Mean ±SD	Mean ±SD
Marital status			
Single	72.94±17.37	61.94±14.64	54.00±11.36
Divorced	76.50±26.16	68.00±15.56	56.50±10.61
Married	85.12±22.84	71.33±19.50	60.01±18.55
Widow/widower	94.00±17.37	68.75±11.13	54.13±8.68
F test p value	**2.08 ---> 0.05**	**1.15 ---> 0.05**	**0.749 ---> 0.05**
Occupation			
Officer work	83.81±18.29	66.52±14.71	56.24±14.25
Manual work	80.60±22.77	68.85±15.77	55.80±12.47
House wife	86.87±24.32	73.44±21.16	61.87±19.75
not working	78.08±19.75	62.92±16.20	55.46±16.48

DISCUSSION:

Pain is a common symptom related cancer and its treatment. Pain management is a vital part of oncologic care, similarly unrelieved pain significantly influences on the quality of life. NCCN Guidelines list the concepts of management and acknowledge the range of complex choices challenged within the management most cancers related pain. As well these recommendations provide control of adverse effects, and safe handling of pharmacologic therapies (Romero, Jones, Bauml, Li, Cohen, & Mao, 2018). So, the aim of this study was to evaluate the impact of implementing pain nursing intervention guidelines on oncology patient health outcome.

Concerning pain intensity, data revealed that the mean of its decreased at the one-month assessment than at the baseline assessment and elevated again at the three-months assessment, even the mean at the three-months assessment still less than the baseline assessment. This is consistence with Mearis, Shega, and Knoebel, (2014) who reported that average pain scores for cancer patient across the 24-hour period were lower in the adherent to NCCN pain guidelines. A significant difference was obtained between baseline assessment and at the one-months assessment and between the baseline assessment and at the three-months assessment regarding pain.

Regarding pain analysis, the patients recognized two factors: first due to severity of pain, and the second due to pain interference with life activity. The study didn't find any statistically significant relationship between pain intensity and patient characteristics as (age, gender, level of education, marital status, occupation, household income and residence). This finding is consistent with (2016) who mentioned that there was no significant relationship between pain intensity and sociodemographic data in cancer patient. on another hand the finding not in the same line with Kenzik, Ganz, Martin, Petersen, Hays, Arora et al. (2015) who motioned that there highly significant relationship between pain severity and age, sex, income and education. Hashemi, Rohanifar, Azarfarin, Razavi, & Momenzadeh Concerning the impact of pain on the daily activities the current study found that pain interfered with all activities almost equally in each study phase, pain interfered with sleep and normal work was highest interfere at baseline assessment and at one-month life enjoyment was the higher even the interfere with general activities was higher after three-months assessment. This finding is not congruent with who Ferreira**,** Dibai-Filho, Kelly de Oliveira, Gomes, Melo, & Maria de Almeida (2015) who find that the highest scores were found for "mood". Some of expectations regarding pain in Egyptian cultures. Pain is probably considered due to God's will and hence need to be believed.

Regarding pain interference with daily activity, highly significant relationship was found between the baseline assessment and at the one-months assessment and between the baseline assessment and at the three-months assessment. Also, the total mean of the daily activity interference decreased in at the one-months assessment and at the three-months assessment than the before applying the guideline, these finding is corresponding with **Wood,** Mitra, de Courcy, & Iyer. (2017) who found significant relation between pain and health status, as increased pain severity and pain interference according to worse health utility and general health status. This may be attributed to pain severity correlation with pain interference with daily activities.

The current study found highly significant relationship between pain interference and the occupation status even there is no any significant association between the pain interference and age , gender, education and marital status, house-hold income and residence area the finding is matching with Eslami, Katz, White, Sundermann, Jiang, Ezzati, & Lipton, (2017) who found that no significant relation between age, gender and education level. on the other hand, this is not matching with Tegegn & Gebreyohannes

(2017) who mention that there are statistically significant relationship between the pain interference with daily living activity and educational level. Housewives and not-working patients had a significantly higher pain interference, Social and psychological changes associated with not-working or disability to do them role. and may increase the pain interference, and it is corresponding with the pervious finding about the higher interference with normal work.

There were significant relationship after one-month and after three-months assessment phases of the NCCN guidelines on all barriers to pain management aspects, and on the Total score. and this matching with study carried on National Cancer Institute in Southern California by Borneman, Koczywas, Sun, Piper, Smith-Idell, Laroya. (2011) who mentioned that There were significant instant and continued impact of the intervention on all aspects of barriers to pain management except for the Communication aspect, and on the Total score. this attributed that increasing patient knowledge toward pain and involving them in applying the care decrease the barriers.

One of the noticeable findings regarding pain management barriers in this study is that the fatalism and communication barriers aspect were the most higher pain management barriers toward the study subjects in all study phases. This finding is inconsistent with the study done in Texas by Kwon (2013) which reported that the physiological barriers subscale were the highest pain management barriers. The controversial in these studies may be regarding the cultural variances, alterations in the healthcare system, and cancer pain treatment as, different cultural backgrounds can influence on the patients' approach toward the disease and its treatment.

This finding is important because it suggests that patients' personal characteristics, except age differences, might not be strong determinants of their perceptions of barriers to pain management. this result is nearly corresponding with Kwon (2013) who stated that racial differences is the only approach related to high total pain management barriers score even the researcher didn't find statistically significant between age and total pain management barriers score.

CONCLUSION:

Nursing intervention guidelines was effective in reducing pain severity. Indeed, reducing patient barriers to pain management. This intervention demonstrates innovation

by translating the evidence-based guidelines for adult cancer pain as developed by the National Comprehensive Cancer Network into practice.

RECOMMENDATIONS:

Patient should encourage to use daily diary for assessing the pain severity as it helps the health care providers to determine effective management. Informing cancer patients that pain can be managed, just need to set realistic outcome. Also, health care provider should ensure that the patients and their care giver receive appropriate educational materials for symptoms management and reducing the barriers. Written booklet and learning session should provide to the patient to increase their knowledge about pain and pain management. Repeated this research on large sample to ensure generalizability of the study

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الخلاصة

يعد الألم المرتبط بالسرطان واحد من أعظم عواقب السرطان وعلاجه. وعلى الرغم من تدخلات مقدمى الرعاية الطبية، يظل الألم غير متحكم فيه. فالألم المرتبط بالسرطان يؤثر سلبا على جودة الحياة لدى مرضى السرطان. تهدف هذه الدراسة الى تقييم تأثير تطبيق الأرشادات التمريضية للتقليل الألم لدى مرضى السرطان. وأجريت هذه الدراسة فى مركز الأورام بمستشفى المنصورة الجامعى ومستشفى بورسعيد العام. وقد اشتملت عينة الدراسة على ٩٤ مريض يعانى من الألم المتوسط أو الشديد. وقد تم تقييم تأثير الإرشادات التمريضية عن طريق قياس شدة الألم ومعوقات علاجه لدى المرض قبل تطبيق الإرشادات وبعد شهر ثم بعد ثلاثة أشهر من تطبيق الإرشادات التمريضية. وقد أظهرت النتائج تحسن ملحوظ للألم لدى المرضى الخاضعين للدراسة واستمرار ذلك بعد ثلاث أشهر من بدء التدخلات التمريضيه. الخلاصة: التدخلات التمريضية المبنيه على اساس ارشادات الشبكة الوطنية الشاملة للسرطان لعلاج الإعياء أدت الى انخفاض شدة الألم لدى المشاركين. وأوصت الدراسة بتقييم الألممرتين يوميا لمرضى السرطان و تقديم وسائل تثقيفية للمرضى عن الألم وطرق علاجه وأيضا تقليل المعوقات المرتبطة بعلاجه.

الكلمات الارشادية :- الألم الناتج عن السرطان – الإرشادات التمريضية – معوقات علاج الألم