Awareness of Surgical Nurses Regarding Pain Assessment and Management (Suggested Nursing Guidelines)

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Abstract
Background: Pain considers a typical sign for every patient before & after surgery, nurses have an essential part in pain assessment and its management; therefore, they ought to have a solid foundation toward it. **Aims:** were to identify nurses' awareness regarding pain assessment and management and design nursing guidelines regarding pain assessment and management. **Research design**: descriptive research design was utilized to conduct this study. **Setting:** The study was conducted in the surgical departments of Assiut University Hospital & Elazhar University Hospital. **Sample**: Eighty nurses were working in the surgical departments of the above mentioned hospitals. **Tools:** Interview pain awareness questionnaire. **Results**: (93.8%) of surgical nurses had poor awareness regarding pain assessment and management. **Conclusion**: Most of the surgical nurses had poor awareness regarding pain assessment and its management for surgical patients. **Recommendation**: Nurses need for in-service training programs and refreshing courses to improve their knowledge which will reflect on their practice while working with those patients

Key Words: Awareness, Pain Assessment And Management & Surgical Nurses.

Introduction
The most serious common manifestation before and after surgery for surgical patients, mainly the surgical pain. Increase using analgesic after operation due to presence of postoperative pain, also it will lead to decrease of daily living activities, and increased health-care utilization. **(Sansone et al., 2015)**.

Previous experiences of pain, culture, anxiety, gender, age, hereditary, and expectations about pain relief, are factors affecting pain which influence a person's experience of pain. These factors may increase or decrease perception and tolerance of pain **(Racine et al., 2012)**.

For patient's pain evaluation, several tools had been established for instance visual analogue scales, numerical pain scale and Wong-baker faces. These apparatuses created to analyze the feasibility of the intervention, and to identify the need for alternative or additional administration **(Zaccagnino & Nedeljkovic, 2017)**.

Surgical pain management considers one of the greatest important aspects of patient care and is relevant to all nurses. Although medical staffs are accountable for prescribing analgesia, much of the responsibility for the patients' comfort relies on nurses. Therefore, nurses should have a strong foundation as regarding pharmacological and non-pharmacological interferences for surgical pain to deliver safe effective nursing care which speed patients' recovery during the journey of surgery.

(Omran et al., 2014), (Rutten et al., 2015) & **(Andrew et al., 2016).**

Significance of the study
From the researcher's clinical experience; it has been observed that surgical nurses are not using accurate assessment tools for pain assessment when dealing with patients.

Aim of the study
The aims of the present study were to: Identify the nurses' awareness regarding pain assessment and management and design nursing guidelines regarding pain assessment and management.
Research question
What is the surgical nurses' awareness regarding pain assessment and management?

Subjects & Method
Descriptive research design used in the existing study. Data collection started in December 2017 and finished in January 2018 at the surgical departments in Assiut University Hospital & Elazhar University Hospital.
Sample
Totally, (80) nurses were working in surgical departments; (60) nurses from surgical department of Assiut University Hospital and (20) nurses from surgical department of Elazhar University Hospital.

Who were currently assigned for giving pre & post-operative nursing care for surgical patients.

Data collection Tools

Tool I: Interview pain awareness questionnaire.

This tool was utilized to assess nurses' awareness regarding pain; this tool consisted of three parts:

Part one: Nurses' Demographic Characteristics:

This part included nurse's demographic characteristics as; sex, age, experience's years, education level and previous pain training.

Part two: Nurses Knowledge about pain assessment

The researcher established it in Arabic language to assess nurses' knowledge regarding surgical pain for patients admitted in surgical departments.

This part included fifteen open and close end questions about (definition, types, factors affecting sensation of pain, assessment tools, management, complications of untreated pain, complications of excessive analgesic uses and surgical nurses' role).

Scoring system of part two

The total score was summed; it ranged from 0 to 30 degree; each question in this part was calculated by giving "two degrees" for each correct answers and "one degree" for each incomplete complete correct answers and "0" for incorrect answers, this system translated in results into good, fair, poor. A minimum score of ≥ 70% was considered as a good level of knowledge, from 50% to less than 70% considered as a fair level of knowledge, and less than 50% considered as a poor level of knowledge of nurses regarding pain **(Onianwa et al., 2017).**

Part three: Nurses Knowledge & Attitudes Survey Regarding Pain (NKASRP) by Ferrell & McCaffery, (2008).

This part was a scale adopted in our study to assess nurses' awareness regarding pain. It contained (38) questions in three distinct sections.

Section one: compromised from 21 sentences about assessment of pain & its management. Answering it by true or false answer.

Section two: compromised from fourteen MCQ questions, each question has four choices and the nurse must choose the correct choice for each question

Section three: Compromised from two patient cases.

(NKASRP) Scoring system

The total scale score was 38 degree, each item in the NKASRP calculated by giving "1" for each correct answer and "0" for each incorrect answer, adding the total score for total pain scale. The percentages of correct answers for the total scores received and for each item also calculated. A minimum score of ≥ 70% was considered as a good awareness, from 50% to 70% was considered as a fair awareness and less

than 50% was considered as a poor awareness of nurses regarding surgical pain. **(Yava et al., 2013).**

Suggested nursing guidelines.

These guidelines were developed by the researcher in simple Arabic language after reviewing current national and international literature review, as suggested guidelines to guide and help nurses in improving their knowledge and facilitate nursing care given to surgical patients.

Statistical analysis

Collection and analyzation of data was done by computer program SPSS. Using necessary statistical manipulations as; number &percentages (%), or using chi-square test to decide an implication for non-parametric parameters. In addition to using the suitable T. test to outline significance for numerical variables where (P. value ≤0.05) considered statistically significant.

Method

1. After appraisal of the protocol of the study by ethical and scientific committee an official letter from the Dean of the Faculty of Nursing, Assiut University directed to the head of the surgical departments at Assiut University Hospital and Elazhar University Hospital in order to get permission to conduct the study.

2. A pilot study was conducted on 10% (8 nurses) of the sample to evaluate the applicability and clarity of the tools.

3. Tools' validity was tested through a jury of (5) experts {3 specialists in the field of medical - surgical nursing and 2 specialists in the field of general surgery} from Assiut University; Their opinions were formulated as regards to the tool format layout, consistency, knowledge accuracy, relevance and competence. Tool's reliability refers to the degree of consistency with which the instrument measures the thing it is supposed to be measuring. Reliability of the tool was confirmed by using Cronbach Alpha test. It was (0.95).

4. Collection of data for this study began in December (2017) & end in January (2018) during the suitable time for nurses in the morning, afternoon and the evening shifts. Oral consent for participation in the study was obtained from every nurse for ethical issues. The questionnaire filled by nurse in the presence of the researcher after explanation of its content.

5. Nurses were informed that participation in the study is voluntary and that they could withdraw at any time of the study and confidentiality of the nurse's data was ascertained.

Result

Table (1): Frequency distribution of demographic characteristics of studied nurses.

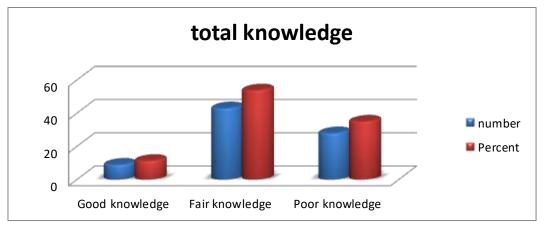| Demographic data	(N=80)	%
Setting		
Assuit university	60	75%
El-Azhar university	20	25%
Age groups		
Less than 20 years.	6	7.5 %
20-30 years.	36	45.0 %
More than 30 years.	38	47.5 %
Sex		
Male♂	19	23.8 %
Female♀	61	76.3 %
Education level		
Diploma	70	87.5 %
Bachelor	10	12.5 %
Experience years		
< 5	14	17.5 %
5 to10	21	26.3 %
> 10	45	56.3 %
Year of experience in surgical unit		
< 5 years	24	30.0 %
From 5 to10 years	25	31.3 %
>10 years	31	38.8 %
Previous training regarding pain assessment and management.		
Yes	6	7.5 %
No	74	92.5 %
Total	**80**	**100%**

Figure (1): Frequency distribution of total nurses' knowledge regarding pain assessment and its management.

Table (2) Frequency distribution of nurses' correct answer regarding (NKASRP) scale.

Item no	Items content	Correct response	
	First section (T&F)	**N**	**%**
1	Vital signs are always reliable indicators of the intensity of a patient's pain.	16	20.0
2	Because their nervous system is underdeveloped, children under two years of age have decreased pain sensitivity and limited memory of painful experiences.	40	50.0
3	Patients who can be distracted from pain usually do not have severe pain.	18	22.5
4	Patients may sleep in spite of severe pain	0	0.0
5	Aspirin and other nonsteroidal anti-inflammatory agents are NOT effective analgesics for painful bone metastases	35	43.8
6	Respiratory depression rarely occurs in patients who have been receiving stable doses of opioids over a period of months	0	0.0
7	Combining analgesics that work by different mechanisms (e.g., combining an NSAID with an opioid) may result in better pain control with fewer side effects than using a single analgesic agent.	0	0.0
8	The usual duration of analgesia of 1-2 mg morphine IV is 4-5 hours.	39	48.8
9	Research shows that promethazine (Phenergan) and hydroxyzine (Vistaril) are reliable potentiators of opioid analgesics.	0	0.0
10	Opioids should not be used in patients with a history of substance abuse.	23	28.8
11	Elderly patients cannot tolerate opioids for pain relief.	24	30.0
12	Patients should be encouraged to endure as much pain as possible before using an opioid.	22	27.5
13	Children less than 11 years old cannot reliably report pain so clinicians should rely solely on the parent's assessment of the child's pain intensity.	30	37.5
14	Patients' spiritual beliefs may lead them to think pain and suffering are necessary.	0	0.0
15	After an initial dose of opioid analgesic is given, subsequent doses Should be adjusted in accordance with the individual patient's response.	0	0.0
16	Giving patients sterile water by injection (placebo) is a useful test to determine if the pain is real.	17	21.3
17	Vicodin (hydrocodone 5 mg + acetaminophen 500 mg) PO is approximately equal to 5-10 mg of morphine PO.	0	0.0
18	If the source of the patient's pain is unknown, opioids should not be used during the pain evaluation period, as this could mask the ability to correctly diagnose the cause of pain.	23	28.8
19	Anticonvulsant drugs such as gabapentin (Neurontin) produce optimal pain relief after a single dose.	29	36.3
20	Benzodiazepines are not effective pain relievers unless the pain is due to muscle spasm.	0	0.0
21	Narcotic or opioid obsession reflects as a chronic neurobiological disease.	0	0.0
	Second section (MCQ)		
22	The suggested way of opioid analgesics injection for obstinate cancer pain is……	80	100
23	The commended technique of opioid analgesics for severe pain of hasty onset like trauma or post-operative pain is…	33	41.3
24	Which analgesic medications considered the best for the management of each level of pain?	36	45.0
25	Which IV doses of morphine over a 4 hour would be equal to 30 mg of PO morphine given q 4 hours?	39	48.8
26	Analgesics should initiate postoperatively to manage pain?	48	60.0
27	The persistent cancer pain patient should receive opioid analgesics daily for twice months. The patient developing clinically significant respiratory depression in the absence of new comorbidity is …….	56	70.0
28	The most goals the patient with pain to request expanded measurements of medication pain is …….	44	55.0
29	What are the most suitable for cancer pain therapy?	0	0

Item no	Items content	Correct response	
	First section (T&F)	**N**	**%**
30	The best correct reasonableness of the strength of the patient's pain is	27	33.8
31	Which ways are best for cultural respects in cancer pain maintenance?	43	53.8
32	How likely is it that; alcoholic or drug misuse problem patients with pain?	0	0
33	The time to develop the consequence of IV morphine is	28	35.0
34	The time to improve the outcome of oral morphine is ……	33	41.3
35	Impulsive opioid stop, the manifestation of physical addiction is ………	54	67.5
	Third section(case study)		
	Case study (1):		
36	Assessment of pain level	31	38.8
37	Morphine IV 1-3 mg q1h PRN pain relief this ia the physician's order for analgesia is" Form the action you will take in this time.	25	31.3
	Case study (2):		
38	Assessment of pain level	54	67.5

MCQ: multiple- choice questions

Table (3): Frequency distribution of total nurses' awareness regarding pain as measured by NKASRP scale.

Total nurses awareness	N	%
Good awareness ≥70%	5	6.3 %
Fair awareness 50 - <70%	40	50.0 %
Poor awareness <50%	35	43.8 %

Table (4): Relationship between nurses' demographic characteristics and NKASRP scale.

Demographic characteristics	Good awareness ≥70%		Fair awareness <70-50%		Poor awareness <50%		Total 80	P.value
Age group								
Less than20 years	1	1.3	3	3.8	2	2.5	6(7.5)	
From 21-30 years	2	2.5	19	23.8	15	18.8	36(45.0)	**0.82** ns
More than30 years	2	2.5	18	22.5	18	22.5	38(47.5)	
Sex								
Male	1	1.3	14	17.5	4	5.0	19(23.8)	**0.05***
Female	4	5.0	26	32.5	31	38.8	61(76.3)	
Level of education								
Nursing Diploma	3	3.8	23	28.8	20	25.0	46(57.5)	**0.99** ns
Bachelor of Nursing	2	2.5	17	21.3	15	18.8	34(42.5)	
Years of experience								
Less than5 years	2	2.5	7	8.8	5	6.3	14(17.5)	
From 5to10years	1	1.3	9	11.3	11	13.8	21(26.3)	**0.61** ns
More than10 years	2	2.5	24	30.0	19	23.8	45(56.3)	
Year of experience in surgical unit								
Less than5years	2	2.5	10	12.5	12	15.0	24(30.0)	
From 5to10years	3	3.8	11	13.8	11	13.8	25(31.2)	**0.27** ns
More than10years	0	0.00	19	23.8	12	15.0	31(38.8)	
Previous training								
Yes	0	0.0	3	3.8	3	3.8	6(7.5)	
No	5	6.3	38	46.3	32	40.0	74(92.5)	**0.79** ns
Total	5	5.0	40	50.0	35	43.8	**80(100)**	

Use Pearson chi-square (cross tabs test).   **=Significant relation, *p≤0.05*

Table (1): Eighty nurses shared in this study, more than two thirds of them worked in Assiut University Hospital and less than one third in El- Azhar University Hospital. The majority of sample was female and more than twenty years old. According to education & experience; the highest percentage of nurses (87.5%) had a diploma degree, more than half of studied nurses their total experience was more than 10 years during the work period. Regarding the experience in surgical department; about one third of nurses had an experience less than 5 years and more than 10 years (30.0%, 38.8% respectively), although this table revealed that few number of nurses (7.5%) had training courses regarding pain assessment and management.

Figure (1): Clarifies that a few numbers of nurses have a good knowledge regarding pain assessment and management for surgical patients.

Table (2) Reveals that, as regard to first section around half of nurses had correct responses regarding questions about age factor and pain, mechanism of action of NSAIDs, and onset of analgesia (50.0%, 48.8%, 43.8% respectively). As regard to the second and third sections, the only question that all nurses answered it correctly was regarding to route of administration of opioid analgesics for cancer patient. Also this table showed that more than half of nurses had correct response regarding question about onset of action regarding analgesia for post-operative pain, complication of drug over dose, abrupt discontinuation of pain medication, and assessment of pain level (60.0%, 70.0%, 69.5%, and 67.5% respectively).

Table (3) Reveals that a few number (6.3%) of nurses had good awareness regarding NKASRP scale.

Table (4) Shows that; there were no statistical significant relations between nurses' demographic data and their awareness regarding pain as measured by NKASRP scale except for sex.

Discussion
This discussion will cover the main result finding as follow

I- Demographic characteristics of studied nurses
Based on the results of the present study, majority of studied nurses were females and their age was more than twenty years old, These study findings were in the same line with a study conducted by **Youssef et al., (2013), Abozeid et al., (2015) & Ahmed** & **Hani, (2017)** who explicated that large number of participants were females but they differed in their ages that were between eighteen up to twenty eight years old.

As regard to education& experience; our study revealed that the highest percentage of nurses had a diploma degree, more than half of studied nurses their total experience years was more than ten years during the work period, because the current hospital system holds nursing diploma nurses, and the bachelors' nurses degree were a few number (twelve and half percent) to supervise diploma nurses. This study result was disagreeing with **Hennessee,(2012) & Abo Elmagd et al., (2018)** in which large proportion of nurses had associate's degrees, less than quarter had bachelor's degrees, and few number (six percent)had diploma degrees and his Participants' years of experience with a mean of 12 years.

Regarding pain-training courses, a few number of studied sample in this study achieved past courses, this may be attributed to lake of organization facilities and budget. This finding was to some extent supported by **El-Rahman, (2013), Omran et al., (2014) Kaddourah et al., (2016)** who found that there was no pain training courses received previously by their participants.

II-Surgical nurses' knowledge about pain assessment and management.
This study found that a few number of nurses had good knowledge regarding pain evaluation and its management, this is may be due to that most of nurses in the surgical units are not highly qualified and unskilled and also the hospital did not provide them with an educational and training program to understand and properly spread over assessment of pain & its management.

Also the nurses in our studied hospitals believe that the pain assessment and management are not their duties, but it is one of the duties of specialist doctors so they didn't care, also they are accustomed to implement doctors' orders without awareness, to reach the extent that they didn't ask the doctor about the cause of this order.

Similar to our study findings, a study conducted by **Eyob et al., (2013)** entitled as "Knowledge & Attitude towards Pain Management among Medical and Paramedical students of an Ethiopian University" which revealed that nurses had weak pain knowledge and insufficient assessment of post-operative pain and they didn't give priority to postoperative pain control.

III-Surgical nurses' awareness regarding pain
The results of the existing study exhibited that only around half of the sample had right answer regarding questions about age factor and pain, onset of analgesia, mechanism of drug interactions, assessment of the child's pain intensity, dose of medications, elderly patients can't endure opioids for relief from discomfort or pain relief, patients with a background marked by substance mishandle and persevering torment before utilizing an opioid. This

result may be due to that, all nurses didn't have enough information about it and absence of hospital standards and refreshing courses regarding pain.

Mann & Carr (2018) stated that a nurse practitioner can prescribe specific medications for pain or may insert an IV line for administration of analgesic medications. Alternatively, an anesthesiologist or nurse anesthetist may insert an epidural catheter for administration of such analgesic agents. Assesses pain medications effectiveness, and reports whether the intervention is ineffective or produces side effects.

As regard to the second section that concerned with multiple choice questions related to NKASRP scale, the results of the present study showed that only one third of nurses answered correctly route of administration of opioid analgesic for postoperative patients. This may be due to that most of the nurses had lack of awareness about route of administration although they easy to give medications via intra-venous (IV) route to the hospitalized patients because of presence of IV cannula.

Our study findings are in the same line with study conducted by **Gustafsson** & **Borglin (2013)** and **Yava et al., (2013)** which revealed that several items from NKASRP scale received a low level of right answers which were concerned with pharmacological information as dosage, route, drug interrelations, adverse effects, and action mechanism. Case study on managing medication at the right dose to maintain analgesia and the other was placebo.

Also, the results presented that; around half of nurses had correct responses regarding questions about complication of over dose of pain medications, reasons for increasing doses of pain medication, and the suitable way for social considerations in patients pain care, abrupt discontinuation of an opioid and intensity of pain. This might be as a result of all nurses believe that pain pharmacological treatment is the responsibility of medical staff, also they didn't know about the cultural as a factor affecting on pain. And our study findings are in accordance with a study conducted by **Ferrell & McCaffery, (2012) & Benimana, (2017)** entitled as "knowledge, attitudes, practices and challenges faced by nurses in pain management among surgical patients, in one referral hospital in Rwanda" which concluded that all nurses had poor knowledge regarding pharmacology or drugs used in pain management post-operatively.

As regard to the total score of NKASRP scale, the results of our study showed that a few number (six point three percent) of nurses had a good awareness regarding NKASRP scale. That might be attributable to the most number of studied nurses were old and had diploma degree also the hospital policy didn't

provide or encourage them to attend conferences or seminar regarding pain.

Relationship between nurses' demographic characteristics & (NKASRP) scale: The findings of our research exemplified that there were no statistical significant relation regarding nurses' demographic data and their awareness regarding pain as measured by NKASRP scale except sex. This result was in the same line with the study done by **Abdel-Aziz, (2014)) & Dikken et al., (2018)** who found that there were no significant relation between nurses' knowledge regarding pain and socio demographic variables such as age, experience years, ranks, and gender.

Zhang, (2008) & **Al-Quliti, & Alamri (2015)** explained that younger nurses with shorter clinical experience were more reactive with pain education compared to older nurses with longer clinical experience and suggested that nurses need to have systematic training in pain-related topics to enhance their knowledge and skills to manage pain, also they should continue educational programs which must be translated into unit policy to facilitate the knowledge transformation into unchanging care.

Conclusion
It can be concluded, that: most of the surgical nurses (93.8%) had a poor level of awareness regarding pain assessment & its management for surgical patients.

Recommendation
Nurses need for in-service training programs and refreshing courses to improve their knowledge which will reflect on their practice while working with those patients. Periodic monitoring of the nurses' knowledge and practice about pain assessment and management to evaluate their level of awareness. Replication of the study on a large probability sample acquired from different geographical areas in Egypt to figure out the main aspects of this problem.

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