

Nursing Intervention for Management of Patients with Dyspnea at Emergency Units in Baghdad Hospitals

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Abstract Objective(s): The study aims are to check the nursing intervention practices by nurses for management dyspnea for patients in emergency units and to find out the relationship between the nursing intervention and the demographic characteristics that includes (age, gender, level of education, years of experience, and training session). **Methodology:** Quantitative design (a descriptive study). The study was conducted in Baghdad Hospitals (Baghdad Teaching Hospital; Al - Shaheed Sadr General Hospital Education, and Al-Kindi Teaching Hospital) Starting from July 2nd 2014 up to the 10th of September 2014. To achieve aims the study, a non-probability (purposive) samples of (50) a nurse who was consisted of all nurses who provide emergency nursing care for patients which has a dyspnea and according to special criteria. The Data were collected by check list observation as a means of data collection. Nurses were observed while they are working at the emergency unit during three time periods divided by the 24 hours. Instrument validity was determined through content validity by a panel of experts. Reliability of the instrument was determined by Pearson correlation coefficient for the researcher and co-observe reliability approach, which was (0.82). Data analysis were performed through descriptive statistics (frequency, percentage, mean of score, Relative sufficiency) and inferential statistics (Chi-square (χ^2) test). **Results:** The results of the study indicated the evaluation of relative sufficiency for nursing intervention for management dyspnea for patients at the emergency unit was low and there is no significant association between ages, gender, level of education, years of experience in emergency unit, training session of sample and nursing intervention scores. **Conclusion:** The study concluded that the most of nurses who work at emergency unit have inadequate skills to manage dyspnea. **Recommendations:** The study recommended the need to develop and carry out special training programs for nurses to enhance their skills in the field of nursing care for patients with dyspnea.

Keywords: *dyspnea, breathlessness, air hunger, labored breath*

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1. Introduction

Dyspnea (Shortness of breath), is a very common problem in the emergency department. It is a sensation of breathlessness that is both unanticipated and unpleasant [1].

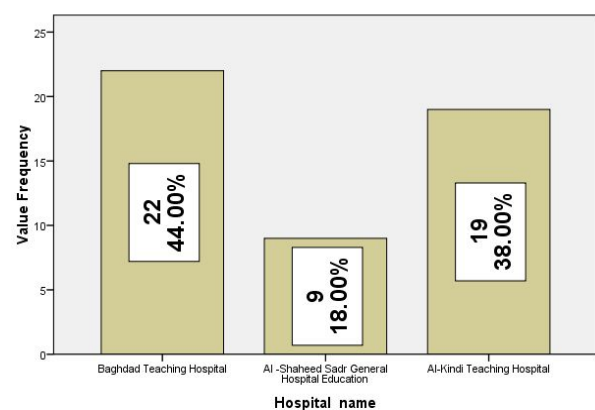
Dyspnea is a term used to characterize a subjective experience of breathing discomfort that consists of qualitatively distinct sensations that vary in intensity. The experience derives from interactions among multiple physiological, psychological, social, and environmental factors, and may induce secondary physiological and behavioral responses [2].

Dyspnea is a very important and useful warning of serious disease, and should not be ignored. On the other hand, when the disease has been diagnosed and is being controlled, persistent dyspnea can interfere greatly with quality of life. In these cases we try to relieve the symptom [3].

Prevalence of dyspnea among cancer patients has been reported to be between 21 and 90%, depending on the type

and stage of cancer. It is particularly common in patients with primary or metastatic involvement of the lung.

Distribution of the sample by the setting of the study



However, it is also reported by patients with no direct lung involvement. Dyspnea may also be due to other concurrent cardiopulmonary problems, such as chronic obstructive pulmonary disease and congestive heart failure [4].

Half of seriously ill patients admitted to tertiary care hospitals report pain, and an equal number report dyspnea. Many patients suffer from both debilitating symptoms. In the final stages of terminal illness, the problem of dyspnea often increases while pain decreases (due to effective treatment). In addition, many patients experience dyspnea with no obvious organic cause [5].

Nurses play a vital role in management of dyspnea through nursing practice, research, and patient education. However, many common nursing interventions for management of dyspnea are based on tradition or expert opinion and have not been subjected to scientific examination [6].

Nursing involves caring and supporting patients, and allows opportunities for trust to develop between the patient and the nurse. These patient-nurse interactions are an important aspect of managing patients with dyspnea. A thorough nursing assessment and measurement of systemic observations allows the nurse to gain an understanding of how patients are managing their breathlessness [7].

The nurse play an important role in the management of dyspnea during care of patient during his / her critical situation for these reasons the researcher has under taken this research.

2. Methodology

Design of the study: Quantitative design (a descriptive study) carried out to check of nursing intervention practices by nurses for management dyspnea for patients at emergency units. Starting from July. 2nd 2014 up to the 10th of September 2014.

The setting of the study: The study conducted at emergency units in Baghdad city (Baghdad Teaching Hospital; Al - Shaheed Sadr General Hospital Education; and Al-Kindi Teaching Hospital). These hospitals provide emergency nursing care for patients which has a dyspnea.

The sample of the study: A non-probability (purposive) samples of (50) a nurse who consisted of all nurses who provide emergency nursing care for patients which have a dyspnea and according to special criteria (nurses different level of education, both sexes, and nurses who provided emergency nursing care for adults' patients' age 18 year and above who have suffered from dyspnea. As it shown in the following figure.

Instrument construction: After extensive review of relevant literature which includes the emergency nursing care for patients which have a dyspnea. The questionnaire constructed for the purpose of the study consisted of (29) items which include two parts:

Part I: Patients' demographic characteristics, consisted of (11) items.

Part II: Questionnaire concerning nursing intervention for management of patients with dyspnea at the emergency unit consisted of (18) items.

The questionnaire ordinal according to the three level scale which scored as (never = 1, sometimes = 2, always = 3) for each level, so the cutoff point was (2).

Validity of the instrument: Content validity was determined by panel of experts.

Conducting pilot study: Before starting the data collection a pilot study was carried out to find reliability

for the questionnaire as an observation checklist, estimate the time required for the data collection, estimate the range of time required to check the nursing intervention, and get the clarity and the content adequacy for the questionnaire and observation.

Reliability of the instrument: Pilot study was conducted during the 1st to 30th of June, 2014. On [10] nurses at emergency units by the researcher and co-observe reliability performed to determine the checklist, person correlation coefficient computed to determine. The results indicated that the correlation coefficient was $r = 0.82$ at the level ($p < 0.05$) which was statistically acceptable. Internal consistency reliability employed for determination the questionnaire reliability. Interpreter reliability (inter-observer) correlation coefficient computed and indicated that the observational checklist was reliable [8].

Data collection: The data were collected from July. 2nd, 2014 up to the 10th of September, 2014 through the constructed questionnaire as an observation tool; the researcher gathered the subject's responses through an application of direct observation as a means of data collection. Nurses were observed while they are working at the emergency unit during the day. The observational checklist took about (1-2) days at three times shift, each of them observed on an individual basis. A total of 3 episodes of events were observed to each respondent's practices as a means of data collection. Three correct practices out of 3 episodes rated as always; 2-1 correct practices out of 3 episodes rated as sometime; and no correct practices out of 3 episodes rated as never.

Data analysis: The researcher used the proper statistical means in the data analysis which include the following:

1. Descriptive data analysis: This approach was performed through:

- a. Frequencies (f)
- b. Percentage (%)
- c. Mean (x)

d. Mean of score (MS): A mean of score equal to (1.5-2.5) considered (Moderate Significant), greater than (2.5) considered high (Highly significant), less than 1.5 was considered low (Not significant).

e. Relative sufficiency (R.S): Relative sufficiency assessed for nurse's practices by three grades (low, moderate, high).

The data of practices were ordinal according the three level scale which scored as (Never = 1, Sometimes = 2, Always = 3) for each level, so the cutoff point was (2) and the lowest value for acceptance was (66.67%).

(11.11) was the interval between first and last degree in the same level. Theoretical relative sufficiency based on early state facts, there were several levels for evaluating the limits of acceptance starting from low (66.67) through the, sever limit (100), so the interval ranged between (66.67-100%). Suggestion was made for classifying the early stated interval for practice into main categories as follows:

- Low level (66.67-77.78)
- Moderate level (77.79-88.89)
- High level (88.90- 100), [9]

2. Inferential data analysis:

- a. Chi-square (X^2) tests:

This statistical procedure used to find the significance. Statistical association between the demographic characteristics and the nursing intervention by the chi-square divided the nurses' practices to three scores:

Range of score = maxims – minimums = 70 - 36

Range= 34/3= 11.3

(36 - 47.3) Poor score, (47.4 - 58.7) Fair score, and (58.8 - 70) Good score.

b. The reliability

Limitations of the study: The present study has experience the following limitations (Inadequate literature and lack of relevant research studies and nurses were not specifically trained for dyspnea management at emergency units).

3. Results

This table shows that distribution of age indicated that majority of nurses' ages were (20-29) years old that accounted for (48%). The most of them (78%) were male. The level of education represents that most of them (52%) were from nursing institute. The most of them (72%) (38%) for (1-5) years were employment in nursing, Majority of them (34%) were employee (1 – 5 years) at the emergency units. (58%) of them have training sessions for management of dyspnea for patients at the emergency units. (62%) of them have continue education inside hospital, and finally the most of nurses had (60%) have pursue education by continuing education.

Table 1. Distribution the nurses by their characteristics

No.	Variables	F.	%
1.	Age (years)	F.	%
1.1.	Less than 20 year	3	6
1.2.	20- 29 year	24	48
1.3.	30- 39 year	19	38
1.4.	40- 49 year	4	8
	Total	50	100
2.	Gender	F.	%
2.1.	Male	39	78
2.2.	Female	11	22
	Total	50	100
3.	Level of education	F.	%
3.1.	Nursing Intermediate School graduate	1	2
3.2.	Nursing High School graduate	9	18
3.3.	Nursing Institute graduate	26	52
3.4.	Nursing college graduate	14	28
	Total	50	100
4.	Marital status	F.	%
4.1.	Married	36	72
4.2.	Single	14	28
	Total	50	100
5.	Years of employment in Nursing (years)	F.	%
5.1.	Less than 1 year	5	10
5.2.	1 – 5	19	38
5.3.	6 – 10	8	16
5.4.	11 -15	12	24
5.5.	16- 20	2	4
5.6.	21 and more	4	8
	Total	50	100
6.	Number of years of experience at the emergency units (years)	F.	%
6.1.	Less than 1 year	13	26
6.2.	1 – 5	17	34
6.3.	6 – 10	14	28
6.4.	11 -15	6	12
	Total	50	100
7.	Training Sessions in the management of chest pain for patients in the emergency unit	F.	%
7.1.	No	29	58
7.2.	Yes	21	42
	Total	50	100
8.	Continue education inside hospital	F.	%
8.1.	Yes	31	62
8.2.	No	19	38
	Total	50	100
9.	Pursue education by continuing education	F.	%
9.1.	Yes	30	60
9.2.	No	20	40
	Total	50	100

This figure shows that sources of experience for management of dyspnea for patients at the emergency units was (28%) from each Reviewing literature which

related for management the chest pain and work with these patients.

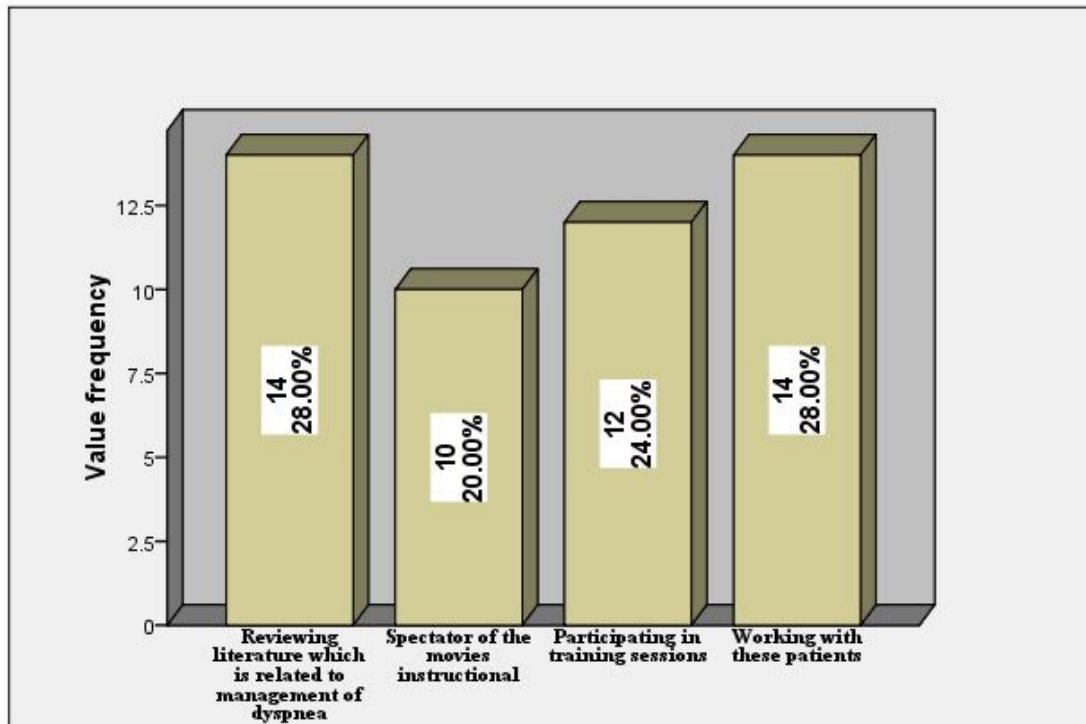


Figure 1. Sources of experience to management of dyspnea for patients in the emergency unit

Table 2. The mean of scores and relative sufficiency of nursing intervention for management of dyspnea for patients at the emergency units

No.	Items	Never		Sometime		Always		MS	RS	E.
		F	%	F	%	F	%			
	Explain how to incorporate pacing and planning	16.0	32.0	20.0	40.0	14.0	28.0	1.96	65.3	O.C
	Teach relaxation training and breath control	10.0	20.0	17.0	34.0	23.0	46.0	2.26	75.3	L
	Encourage activity to tolerance and assist with energy conservation	5.0	10.0	26.0	52.0	19.0	38.0	2.28	75.9	L
	Open windows and air movement, such as a fan	8.0	16.0	21.0	42.0	21.0	42.0	2.26	75.3	L
	Cool and humidify dry air, eliminate irritants in air	6.0	12.0	21.0	42.0	23.0	46.0	2.34	77.9	M
	Avoid compression of abdomen or chest when position	9.0	18.0	24.0	48.0	17.0	34.0	2.16	72.0	L
	Offer psychosocial support	10.0	20.0	19.0	38.0	21.0	42.0	2.22	74.0	L
	Elevate the head of bed 30°	7.0	14.0	25.0	50.0	18.0	36.0	2.22	74.0	L
	Airway patency and protection	7.0	14.0	23.0	46.0	20.0	40.0	2.26	75.3	L
	Initiate oxygen via nasal cannula at 2 liters/minute.	6.0	12.0	25.0	50.0	19.0	38.0	2.26	75.3	L
	Maintenance on mechanical ventilation (invasive or non-invasive)	8.0	16.0	17.0	34.0	25.0	50.0	2.34	77.9	M
	Start saline lock IV (18-gauge or larger) and draw tubes	10.0	20.0	21.0	42.0	19.0	38.0	2.18	72.6	L
	Administer nebulized albuterol sulfate 2.5 mg/3 ml saline and ipratropium bromide 0.5 mg x2 doses, then albuterol sulfate 2.5 mg/3 ml saline x1 dose (over one hour).	9.0	18.0	28.0	56.0	13.0	26.0	2.08	69.3	L
	Draw and hold first set of blood cultures if fever > 38°C	6.0	12.0	31.0	62.0	13.0	26.0	2.14	71.3	L
	Educate the patient and family the use of these medications	1.0	2.0	23.0	46.0	26.0	52.0	2.5	83.3	M
	Educate the patient and family about side effect of medications	3.0	6.0	23.0	46.0	24.0	48.0	2.42	80.6	M
	Fluids encouraged, along with regular mouth care.	4.0	8.0	27.0	54.0	19.0	38.0	2.3	76.6	L
	Unless contraindicated, patients encourage to drink up to two liters of fluids daily	2.0	4.0	26.0	52.0	22.0	44.0	2.4	80.0	M

The findings of this table indicates that evaluation of relative sufficiency was low on items (2,3,4,6,7,8,9,10,12,13,14,and 17), items (5,11,15,16,and 18) was moderate , while item (1) was out of comparison.

Table 3. Association between nursing intervention scores and the demographic characteristics (age, gender, level of education, years of experience in emergency unit, and training session)

Age	Scores	Good	Fair	Poor	Total	χ^2 obs.	Sig.
		F	F	F	F		
Less than 20 year		2	1	0	3	14.690	NS
20- 29 year		4	15	5	24		
30- 39 year		0	17	2	19		
40- 49 year		0	4	0	4		
Total		6	37	7	50		
P = 0.023 df = 6							
Gender	Scores	Good	Fair	Poor	Total	χ^2 obs.	Sig.
		F	F	F	F		
Male		5	29	5	39	0.279	NS
Female		1	8	2	11		
Total		6	37	7	50		
P = 0.870 df = 2							
Level of Education	Scores	Good	Fair	Poor	Total	χ^2 obs.	Sig.
		F	F	F	F		
Nursing Intermediate School graduate		0	1	0	1	8.012	NS
Nursing High School graduate		1	6	2	9		
Nursing Institute graduate		1	20	5	26		
Nursing college graduate		4	10	0	14		
Total		6	37	7	50		
P = 0.237 df = 6							
Years of Experience in emergency unit	Scores	Good	Fair	Poor	Total	χ^2 obs.	Sig.
		F	F	F	F		
Less than 1		4	7	2	13	11.593	NS
1 – 5		1	16	0	17		
6 – 10		1	10	3	14		
16 – 20		0	4	2	6		
Total		6	37	7	50		
P = 0.072 df = 6							
Training Sessions	Scores	Good	Fair	Poor	Total	χ^2 obs.	Sig.
		F	F	F	F		
No		4	21	4		0.211	NS
Yes		2	16	3			
Total		6	37	7			
P = 0.900 df = 2							

This table indicates that there is no significant association between ages, gender, level of education, years of experience in emergency unit, training session of sample and nurses' practices scores.

4. Discussion of the Results

Through the data analysis distribution of demographic variables (Table 1), according to the present study the most of age is (20-29) years old which accounted for 24 (48%). The most of the sample are males 39 (78%), 26 (52%) from nursing institute. 36 (72%) of the nurses were married.

These results agree with study done by Wasserman and Cassaburi, (2008) that reveals the most of age is (20-29) years old. The most of the sample are males and graduated from nursing institute [10].

The majority of the nurses work at Baghdad Teaching Hospital. 19 (38%) for (1-5) years were employment in nursing and majority of them 17 (34%) were employee for (1 – 5 years) at the emergency units.

Concerning training sessions 29 (58%) of them did not have training sessions to dyspnea for patients at the emergency units. 31 (62%) of them have continue education inside hospital, and finally the most of the nurses 30 (60%) have pursue education by continuing education.

These results agree with study done by Brooker, (2004) that indicates the most of nurses have not training sessions for management of dyspnea for patients at the emergency units and have continue education inside hospital, and finally most of the nurses have pursued education by continuing education [7].

Figure 1 show that sources of experience for management a dyspnea for patients at the emergency units was (28%) obtained by nurses from each reviewing literature related for management dyspnea and working with these patients.

These results disagree with study done by Yusuf, et al., (2004) that indicates the most of nurses obtained experience for management a dyspnea for patients at the emergency units from reviewing literature only [11].

The results of the present study reveals that evaluation of relative sufficiency was low on items (Teach relaxation training and breath control, Encourage activity to tolerance and aid with energy conservation, Open windows and air movement, such as a fan, Avoid compression of abdomen or chest when positioning, Offer psychosocial support, Elevate the head of bed 30°, Airway patency and protection, Initiate oxygen via nasal cannula at 2 liters/minute, Start saline lock IV (18-gauge or larger) and draw tubes, Administer nebulized albuterol sulfate 2.5 mg/3 ml saline and ipratropium bromide 0.5 mg x2 doses, then albuterol sulfate 2.5 mg/3 ml saline x1 dose (over one hour), Draw and hold first set of blood cultures if fever >

38°C, and Fluids encourage, along with regular mouth care).

Items (Cool and humidify dry air, eliminate irritants in air, Maintenance on mechanical ventilation (invasive or non-invasive), Educating the patient and family on the use of these medications, Educating the patient and family about side effect of medication, and Unless contraindicated, patients encourage to drink up to two liters of fluid daily) was moderate. While item (Explain how to merge pacing and planning) was out of comparison. [Table 2](#).

This result disagrees with results obtained from study done by Shiber and Santana (2006) which indicated that the most of the items related for management of dyspnea for patients at the emergency units was moderate level mean of score [\[12\]](#).

[Table 3](#) indicates that there is no significant association between ages, gender, level of education, years of experience at emergency unit, training session of sample and nurses' practices scores.

This result disagrees with results obtained from study done by Loeb, (2004) which indicated that there is significant association between training session of sample and nurses' practices scores and high significant association between level of education, years of experience at emergency units and nurses' practices scores [\[13\]](#).

5. Conclusion

The study concluded that the most of the nurses who work in emergency units have inadequate skills to manage a dyspnea.

Recommendations

1. Release handbook for Nurses' Practices concerning with management a dyspnea for patients at the emergency units, it included brief explain with text and pictures.

2. Special training programs designed and constructed for nurses in this area to reinforce their skill and promote their experiences.

3. Provide opportunity for nurses at emergency units to continuing updating their education to support knowledge and skills.

4. Refresh courses for nurses according to teach advance to dyspnea.

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