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## Effect of Implementing Nursing Guidelines About Acute Severe Asthma on Patients' Outcomes in Emergency Unit.

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### Abstract

Acute severe asthma is potentially life-threatening, and their treatment requires baseline assessment of severity, close observing, and successive reassessment. Patients at high danger of asthma-related death require specific consideration. **Aim:** Assess Impact of Implementing Nursing Guidelines about Acute Severe Asthma on Patients' Outcomes. **Design:** Quasi- experimental research design was utilized in this study. **Setting:** Emergency department at central Abnoub Hospital, at Assiut governorate. **Subjects:** convenient sample of 60 critically ill adult patients who divided into equal group (30patients') study and control group. **Methods:** Three types of tools were applied; **tool I:** Patient assessment sheet **tool II:** respiratory assessment sheet. **Tool III:** patients' outcomes sheet. **Results:** There is highly statistically significant difference between both groups regarding patients' outcomes ( respiratory status, complication, hospital staying per hours and mortality). **Conclusion:** Implementing nursing guideline about Acute Severe Asthma on patients' outcomes had positive effect on study group, despite mortality and hospital staying per hours. **Recommendations:** Reapply this research on a larger probability sample acquired from different geographical areas in Egypt for generalization.

**Keyword:** *Acute Severe Asthma & Emergency Department.*

### Introduction

Acute severe asthma is potentially life-threatening, and their treatment requires baseline assessment of severity, careful monitoring, and repeated reassessment. Patients at high danger of asthma-related death need special attention. First-line treatment consists of oxygen supplementation, recurrent administration of inhaled short-acting bronchodilators (beta-2-agonists and ipratropium bromide), and early systemic Corticosteroids (CS). The components that hastened asthma ought to be distinguished and attempts made to prevent future attacks (Lalloo, et al., 2013).

The prevalence of severe acute asthma is increasing worldwide and studies show that the majority of patients in developed and developing countries do not receive optimal care and are therefore not well controlled (GINA,2011).

Acute severe asthma was previously called status asthmaticus. It is a severe asthma that does not respond frequent cycles of beta-agonist treatment such as inhaled albuterol, levalbuterol, or subcutaneous epinephrine (Shah, 2012). Serious (asthma assaults) are scenes of expanded shortness of breath, hacking, wheezing or chest snugness associated with a decrease in airflow and requiring treatment in an emergency room or hospitalization for acute asthma, and/or systemic glucocorticosteroids for management (BTS & SIGN, 2014).

Nurses play an important role in hospice/palliative care. In addition to the traditional nursing duties of monitor and recording symptoms and treatments, they also provide emotional support to terminally ill patients and their families, through a series of roles (Nyakundi, 2013).

The nurses are responsible in monitoring the patient especially for the first 12 – 24 hours. The physical examination should assess exacerbation severity by evaluating pulse rate, respiratory rate, use of accessory muscle and the ability to complete the sentences. Assist the patient in any activity he is doing, conservation of the patients' energy is required and further exhaustion should be avoided. Healthcare delivery should be coordinated among physicians, nurses, and respiratory therapists as well as social workers and managers of emergency department cases. Effective communication should also occur between emergency department clinicians and both inpatient and outpatient providers to guarantee congruity of care and the best possible outcomes for patients with this treatable disease (Hinke & Cheever, 2014). Finally the current study aimed to evaluate impact of implementing nursing guideline about acute severe asthma on patients' outcomes.

### Aim of the study

The aim of the present study was to assess impact of implementing nursing guidelines about acute severe asthma on patients' outcomes.

### Significance of the study

Acute severe asthma is major reasons for dismalness and mortality in critically ill patients (Smeltzer, 2010) It was noticed from record of Central Abnoub Hospital in the years of (2015-2016) numbers of the patients admitted to emergency department were 1000 patient with Severe acute asthma.

### Subjects & Method

#### Research design

Quasi-experimental research design was been used in this study.

**Hypotheses:** To satisfy the point of the study the accompanying research hypothesis were formulated:- Respiratory status of patients with Acute Severe Asthma (study group) who receive nursing guidelines will be better than control group.

**Setting:** The study was conducted in Emergency department at the Central Abnoub Hospital, at Assiut governorate.

**Subjects:** The study subjects included a convenient sample of 60 critically ill adult patients who admitted to emergency department who divided to equal two groups (30patients' in each group) study and control groups.

#### Inclusion criteria

- 1.All patients admitted in emergency department who have severe acute asthma.
- 2.Adult patients (18-60 years).
- 3.Both sex (males and females).

#### Exclusion criteria

- 1.Patient under age 18 years.
- 2.Emphsya.
- 3.Patients with disturbed consciousness level attributed to other causes than respiratory disease (Hepatic or uremic encephalopathy neurological diseases).

#### Tools of data collection

Data collected by using a structured interview questionnaire. Data were collected in a period of 6 months beginning from the earliest starting point of January/2017 to the finish of June/2017. Devices were filled and finished through two days for each week from the earliest starting point of the study.

#### Tool I: Patient assessment tool

Which was consisting from 4parts (socio-demographic data of the patient, Medical data, Assessment of homodynamic parameters and Laboratory investigations).

**Tool II: - Respiratory assessment tool:** It includes (respiratory rate, depth, rhythm, breath sounds, tracheal secretion, cough, skin color & mucus membrane, nails color, use of accessory muscle, manifestation of hypoxia and manifestation of respiratory failure) this assessment done three times (at admission, at midtime and at discharge).

**Tool III: - Patients' outcomes tool:** It includes (Hospital staying, Complication & mortality).

#### Methods

The study where carried out through three main phases, preparatory phase, implementation phase and evaluation phase.

#### 1- Preparatory phase

- 1.An official permission to conduct the study was obtained from the hospital responsible authorities in emergency department after explaining the aim and the nature of the study.
- 2.The tools used in this study were developed be the researcher based on reviewing the relevant literature.
- 3.Revision of content validity by five panels of critical care therapeutic and nursing specialists.
- 4.The reliability was test for tool one, two and tool three.
- 5.A pilot study was conducted on 5 patients to test the possibility and applicability. Patients' who were participated in the pilot study were not included in the main study sample.

#### Ethical considerations

1. Research proposal was approved From Ethical Committee in the faculty of
2. nursing.
3. There is no hazard for study group during application of research.
4. The study was following common ethical principles in clinical research.
5. Written consent was obtained from patients' that was willing to participate in the study. After explaining the nature and purpose of the study.
6. Patients were guaranteed that the data of this research wasn't reused without second permission
7. Patients had the right to refuse to participate and/or withdraw from the study without any rational at any time.

#### 2- Implementation phase

**For The both group (study & control):** - Received the routine hospital care where assessed by researcher. Assess patient socio-demographic data, assess medical data from patients then monitor vital signs three times at admission, at midtime and at discharge, in addition to assessment respiratory assessment at admission, at mid time, at discharge. The researchers assess patients' outcomes.

**The study group:** The patients' received the developed nursing guidelines to improve acute severe asthma outcomes it included :- (patient monitoring continuously over the first 12 to 24 hours, Assess the patient's respiratory status by monitoring the severity of symptoms, breath sounds, Obtain a history of drug allergies prior to drug administration, Administer nebulizer of Ventolin /normal saline (Adkinson, 2014) & (National Heart, Lung, & Blood Institute,

2013), Administer humidified oxygen, Position the patient in semi-Fowler position, Administer IV fluids if the patient is dehydrated as prescribed, up to 3 to 4 L/day, Administer medications as prescribed and monitor the patient's responses to those drugs, Teach patients coughing and breathing technique, Provide comfort and quiet environment, Ensure patients' room is quiet and free of respiratory irritants (e.g., flowers, tobacco smoke, & odors of cleaning agents), At discharge teach patient and family about severe acute asthma (purpose and working of medicines, proper inhalation technique & when to ask for help (Smeltzer, 2010). After giving each patient three individual sessions the researcher provided health teaching about severe acute asthma through a brochure

that developed by researcher and revised by chiefs of the examination.

**3- Evaluation phase:** - Study and control group were evaluated by using patients' outcomes tool to decide the impact of nursing guidelines applied to study group.

#### Statistical design

Data were analyzed by utilizing the measurable bundle for sociology (SPSS) variant 21. Persistent information was communicated as recurrence, rate, mean and standard deviation. Discrete information was communicated as frequency, percentage, comparison between variable was done using Chi-square test. Probability (P. value) less than 0.05 was considered significant and less than 0.001 was considered highly significant.

## Result

**Table (1): Distribution of the studied groups as regard Socio-demographic attributes.**

	Study (n= 30)		Control (n= 30)		P-value
	No.	%	No.	%	
<b>Sex:</b>					0.598
Male	13	43.3	11	36.7	
Female	17	56.7	19	63.3	
<b>Age: (years)</b>					0.553
Mean $\pm$ SD	39.30 $\pm$ 14.99		41.80 $\pm$ 12.93		
Range	18.0 - 60.0		18.0 - 60.0		
<b>Occupation:</b>					
Student	5	16.7	1	3.3	0.195
Employer	10	33.3	16	53.3	0.118
Retired	2	6.7	3	10.0	1.000
Housewife	9	30.0	5	16.7	0.222
Skilled worker	4	13.3	5	16.7	1.000
<b>Level of education:</b>					
Illiterate	11	36.7	9	30.0	0.584
Read & write	8	26.7	4	13.3	0.197
Primary	1	3.3	3	10.0	0.612
Secondary	5	16.7	8	26.7	0.347
Bachelor	5	16.7	6	20.0	0.739
<b>Marital status:</b>					
Single	7	23.3	2	6.7	0.145
Married	19	63.3	23	76.7	0.260
Divorced	0	0.0	1	3.3	1.000
Widow	4	13.3	4	13.3	1.000

*N.B:* \*\*highly Statistically significant difference ( $p < 0.01$ ) \*Statistically significant difference ( $p < 0.05$ )

Table (2): Comparison between both groups in relation to vital signs

		Study (n= 30)	Control (n= 30)	P-value
Temperature:	<b>At admission:</b>			0.407
	Mean $\pm$ SD	37.58 $\pm$ 0.48	37.48 $\pm$ 0.49	
	Range	36.0 - 38.2	36.5 - 38.0	
	<b>At mid-time:</b>			0.310
	Mean $\pm$ SD	37.46 $\pm$ 0.24	37.34 $\pm$ 0.40	
	Range	36.8 - 37.8	36.5 - 38.2	
	<b>At discharge:</b>			0.333
	Mean $\pm$ SD	37.18 $\pm$ 0.31	37.25 $\pm$ 0.30	
	Range	36.5 - 37.9	36.5 - 37.7	
Pulse:	<b>At admission:</b>			0.169
	Mean $\pm$ SD	99.83 $\pm$ 3.45	100.50 $\pm$ 5.47	
	Range	95.0 - 110.0	90.0 - 120.0	
	<b>At mid-time:</b>			0.006**
	Mean $\pm$ SD	94.13 $\pm$ 4.20	97.07 $\pm$ 4.87	
	Range	87.0 - 100.0	85.0 - 115.0	
	<b>At discharge:</b>			0.788
	Mean $\pm$ SD	88.33 $\pm$ 4.33	88.80 $\pm$ 4.54	
	Range	75.0 - 98.0	78.0 - 95.0	
Systolic BP:	<b>At admission:</b>			0.180
	Mean $\pm$ SD	126.67 $\pm$ 13.98	129.67 $\pm$ 10.66	
	Range	110.0 - 160.0	110.0 - 150.0	
	<b>At mid-time:</b>			0.508
	Mean $\pm$ SD	122.67 $\pm$ 11.43	123.67 $\pm$ 8.90	
	Range	100.0 - 150.0	110.0 - 140.0	
	<b>At discharge:</b>			0.881
	Mean $\pm$ SD	118.17 $\pm$ 9.51	118.33 $\pm$ 9.86	
	Range	110.0 - 140.0	100.0 - 140.0	
Diastolic BP:	<b>At admission:</b>			0.193
	Mean $\pm$ SD	85.67 $\pm$ 11.65	88.67 $\pm$ 8.60	
	Range	70.0 - 110.0	70.0 - 110.0	
	<b>At mid-time:</b>			0.347
	Mean $\pm$ SD	83.33 $\pm$ 8.02	84.67 $\pm$ 9.00	
	Range	70.0 - 100.0	70.0 - 100.0	
	<b>At discharge:</b>			0.507
	Mean $\pm$ SD	78.00 $\pm$ 7.61	79.33 $\pm$ 7.85	
	Range	70.0 - 90.0	70.0 - 90.0	

N.B: \*\*highly statistically significant difference ( $p < 0.01$ ) \* Statistically significant difference ( $p < 0.05$ )

Table (3): Comparison between both groups in relation to respiratory assessment (respiratory rate, depth and rhythm).

		Study (n= 30)		Control (n= 30)		P-value
		No.	%	No.	%	
Respiratory rate:	<b>At admission:</b>					--
	Normal	0	0.0	0	0.0	
	Rapid	30	100.0	30	100.0	
	Slow	0	0.0	0	0.0	--
	<b>At mid-time:</b>					
	Normal	0	0.0	0	0.0	
	Rapid	30	100.0	30	100.0	0.017*
	Slow	0	0.0	0	0.0	
	<b>At discharge:</b>					
Normal	12	40.0	16	53.3	0.017*	
Rapid	7	23.2	12	40.0		
Slow	11	36.7	2	6.7		
Depth:	<b>At admission:</b>					--
	Normal	0	0.0	0	0.0	
	Shallow	30	100.0	30	100.0	
	Deep	0	0.0	0	0.0	--
	<b>At mid-time:</b>					
	Normal	0	0.0	0	0.0	
	Shallow	30	100.0	30	100.0	0.043*
	Deep	0	0.0	0	0.0	
	<b>At discharge:</b>					
Normal	18	60.0	12	40.0	0.043*	
Shallow	5	16.7	14	46.7		
Deep	7	23.3	4	13.3		
Rhythm:	<b>At admission:</b>					--
	Regular	0	0.0	0	0.0	
	Irregular	30	100.0	30	100.0	1.000
	<b>At mid-time:</b>					
	Regular	0	0.0	1	3.3	
	Irregular	30	100.0	29	96.7	0.000**
	<b>At discharge:</b>					
Regular	10	33.3	17	56.7		
Irregular	20	66.7	13	43.3		

N.B: \*\*highly statistically significant difference ( $p < 0.01$ ) \* statistically significant difference ( $p < 0.05$ ).

Table (4): Comparison between both groups in relation to Respiratory assessment (Breath sounds).

Breath sounds	Study (n= 30)		Control (n= 30)		P-value
	No.	%	No.	%	
<b>At admission:</b>					0.492
Normal	0	0.0	0	0.0	
Presence of crackles	2	6.7	0	0.0	
Presence of wheezes	28	93.3	30	100.0	0.211
<b>At mid-time:</b>					
Normal	1	3.3	0	0.0	
Presence of crackles	7	23.3	3	10.0	
Presence of wheezes	22	73.3	27	90.0	

Breath sounds	Study (n= 30)		Control (n= 30)		P-value
	No.	%	No.	%	
<b>At discharge:</b>					
Normal	29	96.7	22	73.3	0.026*
Presence of crackles	1	3.3	8	26.7	
Presence of wheezes	0	0.0	0	0.0	

N. B: \*\*highly statistically significant difference ( $p < 0.01$ ) \* statistically significant difference ( $p < 0.05$ )

Table (5): Percentage distribution of both groups in relation to dyspnea at discharge.

Dyspnea	Study (n= 30)		Control (n= 30)		P-value
	No.	%	No.	%	
Absence of dyspnea	17	56.7	5	16.7	0.001*
Mild shortness	11	36.7	13	43.3	0.598
Moderate	2	6.7	11	36.7	0.005*
Severe	0	0.0	1	3.3	1.000
The worst	0	0.0	0	0.0	--

N. B: \*\*highly statistically significant difference ( $p < 0.01$ ) \* statistically significant difference ( $p < 0.05$ ).

Table (6): Comparison between both groups in relation to Patients' outcomes

	Study (n= 30)		Control (n= 30)		P-value
	No.	%	No.	%	
<b>Respiratory rate at discharge:</b>					
Normal	30	100.0	22	73.3	0.004**
Rapid	0	0.0	8	26.7	
Slow	0	0.0	0	0.0	
<b>Signs &amp; symptoms of hypoxia at discharge:</b>					
Normal	30	100.0	23	76.7	0.011*
Other	0	0.0	7	23.3	
<b>Cough</b>	21	70.0	30	100.0	0.002**
<b>Referral</b>	0	0.0	1	3.3	1.000
<b>Complications:</b>					
Cardiac arrest	0	0.0	1	3.3	1.000
Respiratory failure	0	0.0	1	3.3	1.000
<b>Morbidity &amp; mortality</b>	0	0.0	0	0.0	--
<b>Hospital staying per hours</b>					
Mean $\pm$ SD	2.3 $\pm$ 0.5		4.13 $\pm$ 0.5		0.00*

N. B: \*\*highly statistically significant difference ( $p < 0.01$ ) \* statistically significant difference ( $p < 0.05$ )

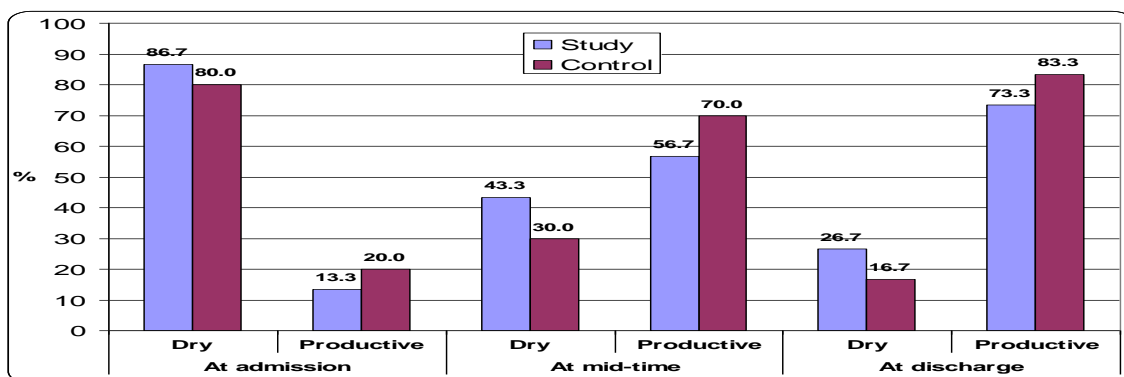


Figure (1): Comparison between both groups in relation to Cough



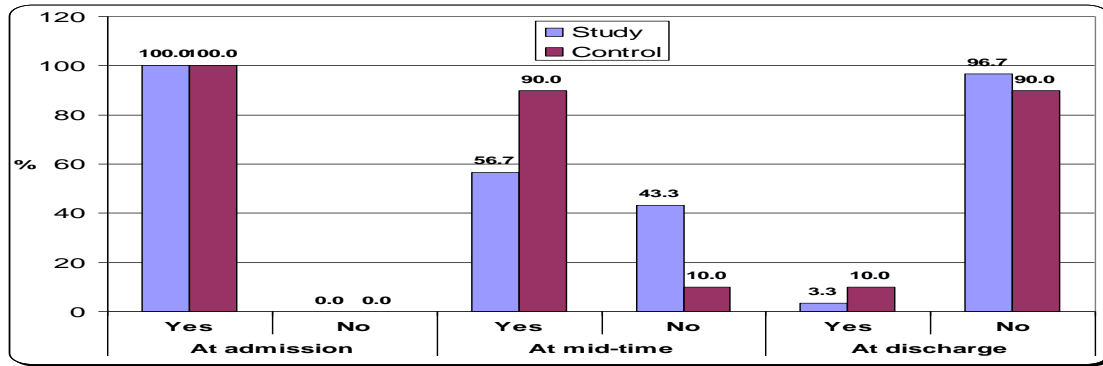


Figure (2): Percentage distribution of both groups in relation to utilize.

**Table (1):** Shows the sociodemographic attributes of the studied groups (study group and control group). Regarding to age, it was discovered that the mean  $\pm$  S.D of the study group was  $(39.30 \pm 14.99)$  and the Mean  $\pm$  SD of control assemble was  $(41.80 \pm 12.93)$ . For the information the most astounding rates of the control group was (53.3%), contrasted with think about gathering (33.3%). The majority of both groups were illiterate. For marital status the highest percentage were married it was (76.7%) in the control group and (63.3%) in the study group.

**Table (2):** Show that there was highly statistically significant difference ( $p=0.006$ ) in the both groups in connection to pulse at midtime.

**Table (3):** Shows comparison between both groups in connection to respiratory rate (RR). The comes about uncovered that the fast RR was equivalent in both group (100%) at admission. At discharge the outcomes uncovered that the normal RR of control group was more than half (53.3%) comparing with study group (40%). As regard to depth, it was found shallow depth equal in both groups (100%) at admission, while at discharge it noticed that there normal depth more than half (60%) of study assemble contrasting and control gathering (40%). As to the importance, there were factual significances contrast in the two gatherings in connection to respiratory rate and profundity.

While, there were exceedingly factual significances distinction in the two gatherings in connection respiratory beat.

**Table (4):** Demonstrate that there was measurably critical contrast in the two gatherings in connection to breath sounds at discharge.

**Table (5):** Demonstrated that more than half (56.7%) of study group don't experience any manifestation of dyspnea contrasted with control gathering (16.7%). There was profoundly measurably huge distinction ( $p=0.001$ ) between both groups related to absence of dyspnea. Regarding to statistical significance in relation to moderate of dyspnea, it was found highly

statistical significant difference ( $p=0.005$ ) in both groups.

**Table (6):** Indicate that the Total cases (100%) of study group had normal respiratory rate comparing with control group and found statistical significances difference in the both groups regarding to signs & symptoms of hypoxia and hospital staying per hours, while we found highly statistical significances contrast in the two gatherings with respect to hack and respiratory rate at discharge.

**Figure (1):** Shows comparison between two in connection to cough. It was noticed that the majority of study group (86.7%) had dry cough at admission, contrasting and control group (80%). While larger part of control group (83.3%) had productive cough comparing with study group (73.3%) at dis charged.

**Figure (2):** Indicate that there equal of use accessory muscle between both groups at admission, while majority (90%) of control group use accessory muscle comparing with study group (56.7%). As regard to use accessory muscle at discharge, it was found that the high majority (96.7%) of study groups no use accessory muscle comparing with control group (90%) and there were highly statistical significances distinction in the two gatherings at mid time.

## Discussion

Acute severe asthma is one of the most common causes of visits to hospital emergency departments worldwide and accounts for the greater part of the economic and healthcare burden of the disease. Failure to appreciate the severity, inadequate emergency treatment, and delay in referral may lead to increased mortality and morbidity. Asthma is the most common respiratory emergency in clinical practice and is usually a failure of long-term control therapy. Acute severe asthma is an asthmatic exacerbation characterized by persistent dyspnea that is not relieved by the usual standard therapy with bronchodilators within 30 mins to 1hour (Adeniyi et al., 2014).

Therefore, this study aim to assess impact of implementing nursing guidelines about acute severe asthma on patients' outcomes

The discoveries of the present study uncovered that the greater part of both groups were female, these might to ladies for the most part have an unbalanced more prominent offer of minding and family unit duties than men, for example, local cleaning, have hoisted rates of asthma. Thus, they have a tendency to be more presented to asthma triggers like allergens (tidy, growth, shape, and yeasts) and sharpening operators (cleaning materials and family sprays). The same findings reported by (Mourad et al., 2012) who carried out a study on evaluation of the impact of usage of worldwide activities for asthma (GINA) rules in the result of asthma fuel in the crisis office who showed that, asthma assaults were found in 54% of female patients and 46% of male patients, while extreme to perilous attacks were found in 65% of female patients and 35% of male patients. These result agreed also by (Bennani et al., 2009) who found that the incidence was higher in female than male. The current results were disagreed by (Shaikh et al., 2009) who found that male constitutes (51.14%) and female (48.86%). Also disagree with (Raheison et al., 2009) who found that there was no distinction in asthma seriousness amongst people as respect the age, the present investigation uncovered that there was no measurable significances distinction in the two gatherings this might be expected to the age of the studied patient from both groups were nearly equal in their age. This result was in accordance with (Marques et al.2016) who revealed that there was no measurably critical contrast amongst exploratory and control gatherings with respect to age. This disagree with (Mourad et al., 2012) who showed relation between severity of current attack and age of the patients, it that, more established patients were fundamentally experiencing extreme to perilous assaults than more youthful patients ( $P = 0.004$ ). In the current study, concerning their marital status about two thirds of the both groups were married. This is nearly similar to the result of the (Marques, et al., 2016) who found that examined test was married.

As regard to temperature the current discovered that there was no measurable critical contrast between temperature and attack of sever acute asthma for both groups. This is similar to (Mourad et al., 2012) who reported that there were no statistical significant contrasts between studied groups with respect to and the grouping of seriousness of current assault ( $p = 0.064$ ), This results need to be supported by more other studies as there are deficient studies related to these variables and the severity of asthma exacerbation. The increase in temperature was mainly

due to infection (respiratory infection). This exacerbated asthma attack but we could not determine its effect on the severity of it. This disagree with (Abd-Elbaky et al., 2010) who demonstrated the mean score of body temperature in the investigation bunch ran between (37.28 to 37.89) while the mean score of body temperature in the control gathering ranged between (37.64 to 38.21) in all days of the study, there were statistical significant differences between both groups in the most of days of study.

Regarding to pulse it was discovered that there exceedingly factual centrality distinction ( $p=0.006$ ) between the two gatherings at midtime. This discovering study was in a similar line with (Rick et al., 2010) who conducted a study about management of acute asthma in adult in emergency department: proved that increasing heart rate is closely correlated with increasing severity of asthma and furthermore, it is off base to expect that tachycardia is caused by use of B2 adrenergic bronchodilators.

The present study found that the vast majority of the participated patient

presented with rapid respiratory rate at admission and at midtime At discharge there were statistical significant differences between studied groups with respect to respiratory rate these might ascribed to positive effect of nursing guidelines in the study group (administer Nebulizer, administer humidified oxygen and cough technique). This result agreed with a study conducted by (Mourad et al., 2012) who proved that patient presented with respiratory rate  $>25/\text{min}$  should be assessed quickly to determine whether the patient had any signs or symptoms of potentially fatal asthma and should be immediately triaged to a closely monitored setting with the emergency department. Moreover, this is matching with what was found by (Rick et al., 2010) as the effective and efficient treatment of acute asthma in emergency department requires prompt recognition of signs and symptoms that indicate a potentially fatal asthma attack. One of these signs is increasing in respiratory rate  $>25-30/\text{min}$  and patients meeting these criteria should be monitored in emergency department for at least 1–2 h after arrival. The target of the short physical examination was to survey both the severity of the exacerbation and over all patient status, so in our study we focused on signs and symptoms that indicate a potentially fatal asthma.

Regarding to breathing sound, The present study noticed that high majority of study group had normal breath sound comparing with control group was more than three quarter, there were statistical significances difference in the both groups in related to breath sounds at discharge these might attributed to following nursing guidelines in the study group not

applying it for control group. Similar finding were reported by (Abd-Elhafez et al., 2014) that the majority of study group had normal breath sound comparing with control group & the result revealed that a statistical highly significant difference was found between both groups, ( $p=0.001$ ). The result was supported by (Wiegand, 2010) who mentioned that abnormal breath sounds might indicate presence of chest infection need more assessment and intervention. This result is also agreed with a study conducted by (Abd-Elbaky et al., 2010) who reported that (63.3%) of the study groups had normal breath while (13.3%) of control group had normal breath sound.

Regarding wheezes, the current study revealed that the vast majority of patients had wheezes breath sound of both groups at admission. At mid time that there majority of patients still wheezes breath sound of control group comparing with study group who declined to three quarter these might attributed to following nursing guidelines in the study group not applying it for control group. This result is in disagreement with a study conducted by (Mourad et al., 2012) which reported the clinical and physiological parameters helped us to assess the severity of current attack although no signs or symptoms were uniformly present as wheezing was absent in about 5% of patients. Wheezing is a poor indicator of functional impairment; it often increases as the obstruction resolves and the patient's ability to move air improve. In addition, clinical experience indicates that the combination of high-pitched wheezing with poor air movement is associated with marked bronchial narrowing.

As regards to the after effects of the present examination uncovered that the dominant part of both group had dry cough at admission, while decline to nearly one third at discharge may attributed to the application of multiple emergency care in form of frequent or continuous nebulizer (breathing) treatments and cough exercise. This finding disagree with (Terraneo et al., 2014) who revealed that there was no factual importance contrast between the two gatherings according to cough and asthma presence, ( $p=0.62$ ).

In the present study, the use of accessory muscles was observed in all patients' at admission which increase inability to communicate in full sentences and the degree of the breathlessness were associated with the airway narrowing, there were highly statistical significance difference between both groups at midtime, while at discharge the use of accessory muscles was observed in the vast majority of control group versus study group. Incongruity (Mourad et al., 2012) who reported that the use of

accessory muscles was observed in 30% of cases at introduction.

The present investigation demonstrated that the greater part of study gathering was absence of dyspnea comparing to control group, while more than one third of both group was mild shortness of dyspnea and there was highly statistically significant difference between both groups related to absence of dyspnea and moderate dyspnea at discharge. This finding was consistent with (Cazzoletti et al., 2014) who reported that the level of dyspnea perception was the most significant factor affecting asthma control in our study population. Also this finding is nearly similar to the results (Vilela & Martin et al., 2011) who noticed were the most frequent were dyspnea (41.1%).

Concerning to patients' outcomes and complications, the present study show that respiratory rate improvement in patients was highly significant in adults after implementing nursing guideline. This finding was agreed with (Shan et al., 2013) who studied 25 clinical trials, revealed that respiratory rate improvement in patients was highly significant in adults after treatment. There was statistical significances difference in the both groups regarding to Patient's outcomes and Signs & symptoms of hypoxia, while we found highly statistical significances difference in the both groups regarding to Patient's outcomes and cough, and only one case has experience complication (Cardiac arrest and Respiratory failure). This is disagree with what was found by (Sellers, 2013) study about Inhaled and intravenous treatment in acute extreme and hazardous asthma who faced some complication as nausea, vomiting, hypotension, drowsiness, and confusion. Also, a study conducted by (Goodacre, et al., 2013) on Intravenous or nebulized magnesium sulphate versus standard therapy for severe acute asthma (3Mg trial): a double-blind, randomized controlled trial, who found that muscle weakness, respiratory depression, and cardiac arrhythmias. And also agree with (Louie, 2012) who said the most common complications encountered in our patients were respiratory failure, sepsis and arrhythmias.

Regarding to hospital staying, decline in the number of hour of the study groups comparing to control group. There was statistically significant contrast between the two gatherings these might ascribed to following nursing rules in the examination gathering. This result disagrees with (Rick, 2010) stay in emergency department depends on the seriousness of current assault. In this investigation the connection between seriousness of current assault and stay in emergency department by hours showed that the mean of stay in emergency department (hours) was  $2.25 \pm 1.037$  and  $5.38 \pm 2.605$  h for mild to moderate

and extreme to dangerous gatherings separately. Serious to dangerous gathering have stay in emergency department higher than mild group ( $P=0.0001$ ). Therefore, the longer stay in emergency department, the higher indication for hospital admission.

Regarding to mortality there were no cases died this finding disagrees with (Louie, 2012) who reported that the in-hospital mortality for all asthmatics has been accounted for to be around 1% to 5% while it varies widely between 0% and 40% for patients with severe asthma requiring mechanical ventilation. So nursing guideline is essential element to ensuring adequate response to an urgent clinical situation. The goal is prevention of morbidity and mortality through rapid assessment and initiation of therapy, using the best available evidence to guide administration.

### Conclusions

In light of the consequences of this investigation, it can be reasoned that: Implementing nursing guideline about Acute severe asthma on patients' outcomes had positive effect on study group, hospital staying, despite mortality and complications remained low.

### Recommendations

In light of the examination discoveries, the accompanying proposals are suggested:

- Establishing a standardized protocol for implementing nursing guidelines
- to improve patients' outcomes of acute severe asthma.
- -Mass media and announcements such as (T.V., Radio) play an important role in conveying health information to the public about possible risk factor of sever acute asthma.
- Reapply this research on a larger probability sample acquired from different geographical areas in Egypt for generalization.

### References

1. **Abd-Elhafez N., Mohamed W., Mohamed M., & Abdel-Azi M., (2014):** Impact of chest physiotherapy and recruitment maneuvers mechanically ventilated patients' with acute lung Injury, No150.
2. **Abd-Elbaky M., Yossuef I., Mehany M., and Gamal L., (2010):** The effect of implementing nursing guidelines in reduce respiratory tract infection among mechanically ventilated patients No192, Pp92-93.
3. **Adkinson N., Bochner B., Burks A., (2014):** Middleton's Allergy Principles and Practice. 8th ed. Philadelphia, PA: Elsevier Saunders; chap 66.
4. **Adeniyi B., Awopeju O., & Erhabor G., (2014):** Why asthma still kills. The National Review of Asthma Deaths (NRAD) Confidential Enquiry report, acute severe asthma www.africanjournalofrespiratorymedicine.com/articles.
5. **British Thoracic Society & Scottish Intercollegiate Guidelines Network (BTS/SIGN) (2014):** "SIGN 141 • British guideline on the management of asthma". Clinical guideline: asthma. London available at <http://www.sign.ac.uk/pdf/sign101.pdf>.
6. **Bennani B., Selmani R., Mahmoud M., Nejari C., & Kanjaa N., (2009):** Nosocomial Pneumonia in Mechanically Ventilated patients: Prospective study in Intensive Care Unit of Fez University Hospital Saudi Journal of Anaesthesia, Vol.2, No2 ,Pp46-51.
7. **Cazzoletti I., Corsico A., Albicini F., Vincenzo E., Gini A., & Grosso, (2014):** The course of asthma in young adults: a population-based nine-year follow-up on asthma remission and control PLoS One, 9 (1) P. e86956.
8. **Global Initiative for Asthma, GINA Report, (2011):** Global strategy for asthma management and prevention. <http://www.ginasthma.com> (accessed 20 December 2012).
9. **Goodacre S., Cohen J., Bradburn M., Gray A., Benger J., & Coats T., (2013):** Intravenous or nebulised magnesium sulphate versus standard therapy for severe acute asthma (3Mg trial): a double-blind, randomised controlled trial, Lancet Respirat. Med. 1 (4) Pp:293–300.
10. **Hinkle J., & Cheever K., (2014):** Management of patients with Chronic Pulmonary Disease. Medical-Surgical Nursing text book, 13th edition, Wolter klumer, Lippincot Williams, chapter 24, P:648.
11. **Laloo U., Ainslie G., Abdool-Gaffar M., Awotedu A., Feldman C., (2013):** Guideline for the management of acute asthma in adults Vol.103, No3.
12. **Louie S., Morrissey B., Kenyon N., Albertson T., Avdalovic M., (2012):** The critically ill asthmatic--from ICU to discharge. Clin Rev Allergy Immunol 2012; 43: Pp. 30-44.
13. **Marques, P., Nogueira-Silva, L., Lima, M., Cunba, F., & Pereira, C., (2016):** Determinants of osa in patients of a hypertension clinic in a hypertensive population in the south. Wolters Klumer Health. Inc. All right reserved., 34 september, Pm2016.
14. **Mourad S., Elganady A., Mohamed E., Elgammal M., (2012):** Assessment of the effect of implementation of global initiatives for asthma (GINA) guidelines in the outcome of

- asthma exacerbation in the emergency department ,Egyptian Journal of Chest Diseases and Tuberculosis 61, Pp:257-273.
15. **National Heart, Lung, & Blood Institute, (2013):** National Asthma Education and Prevention Program. How to use a nebulizer. Available at [www.nhlbi.nih.gov/files/docs/public/lung/asthma\\_tipsheets.pdf](http://www.nhlbi.nih.gov/files/docs/public/lung/asthma_tipsheets.pdf). Accessed April 11, 2016.
  16. **Nyakundi A., (2013):** A nurse's role in palliative care available at <http://www.ehospice.com/kenya/tabid/10674/ArticleId/4632/language/en-GB/View.asp>
  17. **Raherison C., Janson C., & Javis. D., (2009):** Evaluation of asthma severity in a cohort of young adult: is there any gender difference? PLoS ONE 4 (9) P: 7146.
  19. **Rick H., Diane L., & Brian H., (2010):** Management of acute asthma in adult in emergency department: non-ventilatory management, Can. Med. Assoc. J. 182 (2).
  20. **Sellers W., (2013):** Inhaled and intravenous treatment in acute severe and life threatening asthma, Br. J. Anaesth. 110 (2), Pp: 183–190.
  21. **Shah R., (2012):** Acute severe asthma (status asthmaticus), Allergy Asthma Proc. 33:S47-S50; doi:10.2500/aap.33.
  22. **Shan Z., Rong Y., Yang W., Wang D., Yao P., & Xie J., (2013):** Intravenous and nebulized magnesium sulfate for treating acute asthma in adults and children.
  23. <http://www.ehospice.com/Kenya/tabid/10674/ArticleId/4632/language/en-GB/View.asp>.
  24. **Shaikh, M., Devrajani, R., Shah, A., Akhund, T., & Bibi I., (2009):** Frequency, pattern and etiology of nosocomial infection in intensive care unit: an experience at a tertiary care hospital, J Ayub Med Coll Abbottabad 20(4) pp37-40.
  25. **Smeltzer, S., Bare, B., Hinkle, J., & Cheever, K., (2010):** Brunner and Suddarth's Textbook of Medical Surgical Nursing(12<sup>th</sup>ed.) Philadelphia, PA: J.B. Lippincott Williams& Wilkins, Wolters Kluwer. Pp:551-633.
  26. **Terraneo S., Polverino E., Cilloniz C., Amaro. R., Gabarrus A., & Montull B., (2014):** Severity and outcomes of community acquired pneumonia in asthmatic patients Respiratory Medicine 108, Pp:1713-1722.
  27. **Wiegand M., & Carison K., (2010):** AACN procedure manual for critical care 5th edition chapter 5 respiratory system by Elsevier Saunders Pp:211-212.
  28. **Vilela-Martin J., Vaz-de-Melo R., Kuniyoshi C., Abdo A., & Yugar-Toledo J., (2011):** Hypertensive crisis: clinical epidemiological profile. HypertenSRes: OFFJJpnSoc Hypertens.; 34: Pp:367-71.