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The Relationship between Daily Sedative Interruption and Selected Patients' Outcomes among Mechanically Ventilated Patients

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Abstract

Background: Mechanically ventilated patients are a risk group whose outcomes are negatively affected by many factors. Among these factors is sedation because it is a cornerstone therapy for critically ill patients.

Aim of the Study: To investigate the relationship between daily sedation interruption and selected outcomes of critically ill mechanically ventilated patients.

Research Design: A descriptive correlational research design was utilized.

Research Questions: What is the relationship between daily sedation interruption and (frequency of organ dysfunction, length of ICU stay, and weaning from mechanical ventilation) among adult critically ill mechanically ventilated patients?

Setting: Different intensive care units of Cairo University Hospitals.

Sample: A purposive sample of 80 critically ill patients connected to mechanical ventilators for at least 12 hours.

Tools of Data Collection: Four tools were utilized to collect data pertinent to the current study:

Tool 1: Personnel characteristics & medical data sheet,

Tool 2: Daily sedative interruption outcomes assessment tool,

Tool 3: Richmond Agitation Sedation Scale (RASS),

Tool 4: Sequential Organ Failure Assessment (SOFA score) tool.

Results: The majority (72.5%) of the studied sample was males, and 43.8% were in the age group of 50-≤60. More than one third received fentanyl as sedation. A significant statistical relationship was found between sedation name and ICU length of stay, sedation dose and ICU length of stay, RASS score and mechanical ventilator days (χ^2=24.72, p-value <0.002), (χ^2=32.18, p≤0.008), (χ^2=10.63, p≤0.031) respectively. No significant statistical relationship was found between sedation name and the weaning type from mechanical ventilation (χ^2 = 7.190.15, p<0.126). No significant statistical relationship was found between sedation name and the occurrence of organ failure (χ^2=3.29, p<0.192).

Conclusion: The current study revealed a significant statistical relationship between sedative agents, doses and ICU length of stay. However, no significant relationship between sedative agents and weaning type and occurrence of organ failure.

Recommendations: Avialability of evidence base guidelines for management of pain and sedation in ICU. Enhance the work of the multidisciplinary team who can provide the optimum care for the mechanically ventilated patients.

Key Words: *Mechanical ventilation – Sedation – Outcomes of mechanically ventilated patient.*

Introduction

CRITICALLY ill mechanically ventilated patients are a vulnerable and complex patient population. They represent a large portion of ICU patients and are highly dependent on nursing care due to the nature of their illnesses, need for continuous invasive monitoring, and multiple organ system support. Consequently, nursing is the major service provided in ICUs, which is responsible or meeting the need for more intense specialized care. Multiple comorbidities, physiologic age-related changes, multiple organ failure, and complicated clinical courses place these patients at high risk for adverse outcomes [1].

So that, management of critically ill patients requires a multidisciplinary team approach consisting of intensive skilled nursing care with in depth education in the speciality field, regular physiotherapy, careful management of pain and distress, nutritional support, stress-induced ulceration, preventing venous thrombosis, constipation, and pressure ulcers [2]. Sedation refers to the administration of pharmacological agents not only designed to induce a sedative effect but also analgesics [3].

As indicated by Gradwohl-Matis, Mehta & Dünser, [4] the goals of sedation are to relieve anxiety, reduce pain discomfort, relieve dyspnea,

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promote sleep, modulate the stress response, prevent self harm, improve ventilator-patient synchrony, treat intracranial hypertension, treat refractory epileptic seizures, induce unconsciousness during muscle relaxation, prevent shivering during therapeutic hyperthermia.

In spite of requiring a multidisciplinary approach, sedation management should be one of the main reponsabilities of critical care nurses. However in most ICUs they are responsible for making the decisions about administration and adjustment of sedatives; this requires a wide range of information and the ability to assess critically ill patients for amnesia and comfort needs, need to prevent self-injury by patients [5].

Subjects and Methods

This study was conducted from March to December 2016 at different Intensive Care Units (ICUs) of Cairo University Hospitals these units are:

1- Critical Care Medicine Department (first & second units) presents in the first floor which consists of three ICUs, two Coronary Care Units (CCUs) and examination room.

2- The ICU at the 185 Kasr Al-Aini Hospital for Burn and Emergency which consists of 12 rooms each room contains 4 beds. A descriptive correlational research design was utilized in the current study. Setting the current study was carried. A purposive sample of 80 adult male and female patients admitted to the ICU and connected with the mechanical ventilator for at least 12 hours with age ranges from 18-60 years.

Significance of the study:

Although sedation may provide relief of anxiety and agitation, it is associated with risks, including prolonged mechanical ventilation, and longer stays in the ICU and hospital. Furthermore, patients receiving sedative infusions can quickly become oversedated or sedated for a prolonged period even after the sedation is discontinued. To lessen the occurrence of these complications the management of sedation requires utilization of evidence-based practices guidelines, such as a Daily Interruption of Sedation (DIS) [6].

In a systemic review about effectiveness of daily interruption of sedation in sedated patients with mechanical ventilation in ICU conducted by Chen, et al., [7] the results strongly revealed that daily interruption of sedation in sedated patients with mechanical ventilation in ICU lead to shorter duration of mechanical ventilation, decrease in length of stay in ICU, and reduced tracheostomy rate. Moreover, the daily sedation interruption was not associated with an increase in the rate of unplanned extubation by the patients. Reducing the duration of mechanical ventilation and ICU stays could reduce the hospitalization expenses and save medical resources. Furthermore, daily sedation interruption could reduce the risk of complications caused by mechanical ventilation and alleviate the patient suffering. The patients could then return to the common wards as soon as possible. The daily sedation interruption under intensive care could be implemented by the trained doctors and nurses.

Some studies such as daily interruption of sedative infusions in critically ill patients undergoing mechanical ventilation done by Kress and his colleagues [8] & randomized trial of light versus deep sedation on mental health after critical illness conducted with Treggiari, et al., [9] revealed that inappropriate sedation increased the duration of mechanical ventilation and the length of ICU stay. Few studies reported that there are differences in patients' clinical outcomes who received different sedative agents and those who received different doses of sedation.

Through empirical observation, literature review and clinical experience it has been observed that, mechanically ventilated patients develop some health problems and complications, these complications are prominent to some extent among those who have continuous over sedation which include delirium, cognitive problems, Alzheimer's disease, ...etc. These complications lead to increased length of mechanical ventilation, increased length of ICU stay, increased mortality rate, worsing the patient outcomes, delaying patient's recovery and increased hospital costs.

Therefore, there is a need to evaluate the patients' outcomes of sedated mechanically ventilated patient to assess the effect of daily sedation interruption, type of sedation, dose of sedation, and level of sedation on patients' outcomes.

Aim of the study:

The aim of this study is to assess the relationship between daily sedation interruption and patients' outcomes at Cairo University Hospitals.

Research questions:

To fulfill the aim of this study, the following research question was formulated:

Q1: What is the relationship between daily sedative interruption and the outcomes of mechanically

ventilated patients at ICUs of Cairo University Hospital?

Tools:

Four tools were utilized for data collection These tools are:

Tool 1: Personnel characteristics & medical data sheet: It was developed by the investigator. It covers data such as patient's age, gender, diagnosis, co-morbidity diseases, and chief complaint.

Tool 2: Richmond Agitation Sedation Scale (RASS): It is a medical scale used to measure the agitation or sedation level of a patient. It was developed by sessler, et al. (2002) **[10]**. The RASS can be used in all hospitalized patients to describe their level of alertness or agitation. It is however mostly used in mechanically ventilated patients in order to avoid over and under-sedation. A RASS score between –2 to +1 was considered "light sedation" and a RASS score between 3 to –5 "deep sedation." a RASS score between +2 to +4 was considered "agitation (Shehabi, et al., & 2012) **[11]**.

Tool 3: Daily sedative interruption outcomes assessment tool: It was developed by the investigator. It covers data such as lengh of hospital stay, ventilator connection/disconnection date, heamodynamic parameters (temperature, heart rate, respiratory rate, and blood pressure), O_2 saturation, weaning fate (successful or not), and reflexes (biceps, triceps, gag, pattellar).

Tool 4: Sequential organ failure assessment (SOFA score) sheet: This tool was developed by Vincent (1996). It is a scoring system used to determine the extent of a patient's organ function or rate of dysfunction during their stay in the Intensive Care Unit (Acharya, Pradhan, & Marhatta, 2006) **[12]**. It is completed through assessment of the function of six different body systems (respiratory, cardiovascular, renal, hepatic, neurological and heamatological system).

Tool validity and reliability:

Content validity was done to identify the degree to which the used tools measure what was supposed to be measured. Developed tools were examined by a panel of five critical care nursing experts to determine whether the included items were clear and suitable to achieve the aim of the current study. As well, tools reliability calculated using SPSS with Cronbach's alpha value of 0.641 for the daily sedative interruption outcomes assessment tool. Concerning adopted tools reliability the (RASS) has high reliability and validity in medical and surgical, ventilated and nonventilated, and sedated and nonsedated adult ICU patients. (r=0.956, lower 90% confidence limit=0.948; κ=0.73, 95% confidence interval=0.71, 0.75) (Sessler, et al., 2002) **[10]**. SOFA score is valid, reliable, and effective method to describe organ dysfunction/failure in critically ill patients evidenced by many researches. As regards to Taghizadeh Karati, Asadzandi, Tadrisi, & Ebadi (2011) **[13]** the SOFA core Intra class Correlation Coefficient (ICC) rate=0.889, and the Kappa score level (cooperation of the tool's items for measuring what will be predicted) was 0.552 for the nervous system, 0.634 for the respiratory systems and more than 0.8 for other systems of the human body.

Pilot study:

A pilot study was carried out on 8 patients to test the feasibility, objectivity, and the applicability of the study tools. Carrying out the pilot study gave the investigator experience to deal with the included subjects, and use the data collection tools. Based on results of the pilot study, needed refinements and modifications were done and the pilot study subjects were not included in the current study sample.

Protection of human rights:

An official permission to conduct the study was obtained from the Research Ethical Committee and directors of Intensive Care Units at a Cairo University Hospital. Then written consents were obtained from patients to be included in the study after explanation of the nature and purpose of the study. Participation in the study was voluntary; each subject had the right to withdraw from the study. Moreover, confidentiality and anonymity of the subjects were assured through coding the study subjects in assessment tool.

Procedure:

The current study was started with obtaining the primary approval from the Research Ethical Committee at Faculty of Nursing, Cairo University, approvals from heads of Intensive Care Unit, then reviewing the related literature to develop different data collection tools. Written consents were obtained from the patients' relatives, then the investigator filled out patients' characteristics, and medical data utilizing Tool (1). This tool required 10-15 minutes to be fulfilled. Then, the investigator assess patient's sedation and agitation level utilizing (Tool 2) by observing the patient behavior toward the connections and staff.

Then, the investigator utilized the daily sedative interruption assessment sheet (Tool 3) to assess the sedation that patient was had (name & dose

ml/hr) to determine the patient should regain his conscious level after how many minutes approxiemately and the investigator checked that the daily sedation interruption was started (stop of sedation) and total dose of sedation per one hour was calculated & total dose of sedation per 24 hours was calculated, then the investigator took patient vital signs (temperature, heart rate, respiratory rate, and blood pressure) and oxygen saturation. Then the investigator observed if the weaning was successful or not. The investigator assessed for the occurrence of neurological disorders as indicated by reflexes (Biceps, Triceps, Pattelar, Gag reflex). Then, the investigator assessed for the occurrence of organ dysfunction utilizing the SOFA score (Tool 4). This sheet was filled out through repeated visits to each included patient: on admission, and every 48 hours until discharge from the ICU.

Statistical data analysis:

The collected data were scored, tabulated and analyzed by personal computer utilizing Statistical Package for the Social Science (SPSS) program Version 20. Descriptive as well as inferential statistics were utilized to analyze data pertinent to the study. The level of significance was set at $p \leq 0.05$.

Results

Socio demographic characteristics of the sample:

Table (1) shows that most patients were males, their age ranged between 50-≥60 years with a mean age of 42.28± 13.07, and most of the studied sample had respiratory distress.

Sedation name and mechanical ventilator days:

Table (2) reveals that no significant statistical relationship between sedation name and mechanical ventilator days among the studied sample, (χ^2 = 6.29, p-value ≤0.614).

Sedation name and ICU length of stay:

Table (3) showes that a highly significant statistical relationship between sedation name and ICU length of stay among the studied sample, (χ^2 = 24.72, p-value ≤0.002).

Sedation name and SOFA score:

Table (4) illustrates that most of the studied sample (93.8%) developed mild organ dysfunction during their stay in the ICU. No significant statistical relationship was found between sedation name and occurrence of organ dysfunction (SOFA) score, (χ^2 =3.29, p-value ≤0.192).

Sedation name and weaning:

Table (5) clarifies that there is no significant statistical relationship between sedation name and the weaning from mechanical ventilation among the studied sample, (χ^2 =7.190, p-value <0.126).

Sedation dose and mechanical ventilator days:

Table (6) reveals that no significant statistical relationship between sedation dose and mechanical ventilator days among the studied sample, (χ^2 = 17.18, p-value ≤0.374).

Sedation dose and ICU length of stay:

Table (7) shows that there is a highly significant statistical relationship between sedation dose and ICU length of stay among the studied sample, (χ^2 = 32.18, p-value ≤0.008).

Level of sedation and mechanical ventilator Days:

Table (8) clarifies that there is significant statistical relationship between RASS score and mechanical ventilator days among the studied sample, (χ^2 =10.63, p-value ≤0.031).

Table (1): Frequency distribution of the studied sample in relation to age, gender, medical diagnosis (N=80).

Variables	Study sample N=80	
	No	%
Age:		
20-<30	14	17.5
30-<40	23	28.8
40-<50	8	10
50-≤60	35	43.8
Mean ± SD	42.8± 13.07	
Gender:		
Male	58	72.5
Female	22	27.5
Medical diagnosis:		
Respiratory distress	48	60
MI	20	25
Bronchpeumonia	12	15

Table (2): Relationship between sedation name and mechanical ventilator days among the studied sample, (N=80).

Sedation name / MV days	Fentanyl n=35		Dormicum n=23		Deprivan n=22		Total		χ^2	p-value
	No	%	No	%	No	%	No	%		
1- >3 days	1	2.9	1	4.3	0	0	2	2	6.29	0.614
2- 3->6 days	18	51.4	10	43.5	15	68.2	43	43		NS
3- 6-<9 days	10	28.5	7	30.4	3	13.6	20	20		
4- 9-<12 days	6	17	4	17.5	4	18.2	14	14		
5- ≥12 days	0	0	1	4.3	0	0	1	1		
Total	35	100	23	100	22	100	80	80		

NS: No Significant statistical relationship.

Table (3): Relationship between sedation name and length of ICU stay among the studied sample, (N=80).

Sedation name / Length of ICU stay	Sedation name: Fentanyl n=35		Dormicum n=23		Deprivan n=22		Total		χ^2	*p*-value
	No	%	No	%	No	%	No	%		
1- <5 days	0	0	1	4.4	7	32	8	10	24.72	0.002
2- 5-<10 days	11	31.4	4	17.4	2	9	17	21.4		S
3- 10-<15 days	10	28.6	5	21.7	8	36.4	23	28.6		
4- 15-<20 days	7	20	10	43.5	3	13.6	20	25		
5- ≥20 days	7	20	3	13	2	9	12	15		
Total	35	100	23	100	22	100	80	100		

S: Significant at $p \leq 0.05$.

Table (4): Relationship sedation name and occurrence of organ dysfunction (SOFA) score among the studied sample, (N=80).

Sedation name / Degree of organ dysfunction	Sedation name: Fentanyl n=35		Dormicum n=23		Deprivan n=22		Total		χ^2	*p*-value
	No	%	No	%	No	%	No	%		
1- Mild organ dysfunction	33	94.3	20	87	22	100	75	93.8	3.29	0.192
2- Moderate organ dysfunction	2	5.7	3	13	0	0	5	6.2		NS
3- Severe organ dysfunction	0	0	0	0	0	0	0	0		
Total	35	100	23	100	22	100	80	100		

NS: No Significant statistical relationship.

Table (5): Relationship sedation name and weaning from mechanical ventilation, (N=80).

Sedation name / Weaning from M. V	Sedation name: Fentanyl		Dormicum		Deprivan		Total		χ^2	*p*-value
	No	%	No	%	No	%	No	%		
1- Successful	19	54.3	14	60.7	14	63.6	47	58.6	7.190	0.126
2- Difficult	4	11.4	7	30.4	3	13.6	14	17.6		NS
3- No Weaning	12	34.3	2	8.9	5	22.8	19	23.8		
Total	35	100	23	100	22	100	80	100		

NS: No Significant statistical relationship.

Table (6): Relationship between sedation dose and mechanical ventilator days among the studied sample, (N=80).

Sedation dose / MV days	Sedation dose categrey: RD Dormicum n=11		HD Dormicum N=15		HD Deprivan n=20		RD Fentanyl n=12		HD Fentanyl n=22		Total		χ^2	*p*-value
	No	%	No	%	No	%	No	%	No	%	No	%		
>3 days	0	0	1	6.6	0	0	0	0	1	4.5	2	2.5	17.18	0.374
3->6 days	9	81.8	3	20	13	65	6	50	12	54.6	43	53.7		NS
6-<9 days	1	9.1	6	40	3	15	4	33.3	6	27.3	20	25		
9-<12 days	1	9.1	4	26.8	4	20	2	16.7	3	13.6	14	17.5		
≥12 days	0	0	1	6.6	0	0	0	0	0	0	1	1.3		
Total	11	100	15	100	20	100	12	100	22	100	80	100		

NS: No Significant statistical relationship.

Table (7): Relationship between sedation dose and length of ICU stay among the studied sample, (N=80).

Sedation dose / Length of ICU	Sedation dose categrey: RD Dormicum n=11		HD Dormicum N=15		HD Deprivan n=20		RD Fentanyl n=12		HD Fentanyl n=22		Total		χ^2	*p* value
	No	%	No	%	No	%	No	%	No	%	No	%		
>5 days	0	0	1	6.7	7	35	0	0	0	0	8	10	32.18	0.008*
5->10 days	3	27.3	1	6.7	2	10	6	50	5	22.7	17	21.3		
10-<15 days	2	18.2	4	26.6	7	35	4	33.4	6	27.3	23	28.7		
15-<20 days	4	36.3	6	40	2	10	1	8.3	7	31.8	20	25		
≥20 days	2	18.2	3	20	2	10	1	8.3	4	18.2	12	15		
Total	11	100	15	100	20	100	12	100	22	100	80	100		

*: Significance at $p \leq 0.05$.

Table (8): Relationship between RASS score and mechanical ventilator days among the studied sample, (N=80).

Agitation & sedation level / MV days	RASS categrey: Light sedation n=69		Agitation n=11		Total		χ^2	*p*-value
	No	%	No	%	No	%		
<3 days	2	2.9	0	0	2	2.5	10.63	0.031*
3-<6 days	38	55.1	5	45.5	43	53.8		
6-<9 days	19	27.5	1	9.1	20	25		
9-<12 days	10	14.5	4	36.4	14	17.5		
≥12 days	0	0	1	9.1	1	1.2		
Total	69	100	11	100	80	100		

*: Significance at $p \leq 0.05$.

Discussion

Socio demographic characteristics of the subjects:

The present study delineated the dominance of males, especially in the age group reflecting young and middle adulthood. This finding is merely in agreement with that of, Grap et al., [14] who conducted a published study entitled as "sedation in adults receiving mechanical ventilation: Physiological and comfort outcomes" and found that more than two thirds of the studied sample were men and old adults.

Sedation name and MV days:

The present study revealed no significant statistical relationship between sedative agent and mechanical ventilator days. This finding is inconsistent with a published study done by Klompas, et al., [15] entitled as "associations between different sedatives and ventilator-associated events, length-of-stay, and mortality in mechanically ventilated patients" and indicated association between type of sedation and time of extubation. Propofol and dexmedetomidine were associated with less time to extubation compared with benzodiazepines, but dexmedetomidine was also associated with less time to extubation versus propofol.

Sedation name and ICU length of stay:

The current study revealed a significant statistical relationship between sedation name and ICU length of stay among the studied sample where patients sedated with deprivan had less days in ICU. This finding is incongruence with that Lonardo of et al., [16] who conducted a published study entitled as "propofol is associated with favorable outcomes compared with benzodiazepines in ventilated intensive care unit patients" and revealed a significant differences in length of ICU stay in relation to sedation type of the studied sample. As they found hospital mortality was statistically lower in propofol-treated patients as compared with midazolam-or lorazepam-treated patients. Competing risk analysis for 28-day ICU time period showed that propofol-treated patients had a statistically higher probability for ICU discharge.

On the other hand, Klompas et al., [15] conducted a study entitled as "associations between different sedatives and ventilator-associated events, length-of-stay, and mortality in mechanically ventilated patients , Klompas and colleagues examined three commonly used sedatives and they found no differences between any sedative agents in hours for ICU discharge or mortality.

Sedation name and frequency of organ dysfunction:

The current study revealed no significant statistical relationship between sedation name and the occurrence of organ failure among the studied sample. In spite of having the the majority of studied sample had mild organ failure, one cannot neglect the minority of the studied sample who developed moderate organ failure. In this regards, Strøm, Johansen, & Toft, [17] revealed that no sedation strategy to patients undergoing mechanical ventilation increases the urine output and decreases the number of patients with renal impairments, where they published a study about "sedation and

renal impairment in critically ill patients: A post hoc analysis of a randomized trial". Also in a clinical study about sedation and analgesia in intensive care: A comparison of fentanyl and remifentanil one by Cevik, Celik, Clark, and Macit, **[18]** they revealed that there is no significant differences between the fentanyl group and remifentanil group in relation to kidney and liver functions.

Sedation name and weaning from MV:

Although about two thirds of the studied sample had successful weaning, the current study revealed no significant statistical relationship between sedation name and the weaning from mechanical ventilation. This finding is in congruence with the results of a published study conducted by Khalil, et al., **[19]** entitled as "assessment of risk factors responsible for difficult weaning from mechanical ventilation in adults" and found more than half of the studied sample had successful weaning. Also, Peñuelas, et al., **[20]** conducted a study about characteristics and outcomes of ventilated patients according to time of weaning from mechanical ventilation and found more than half of the studied sample had successful weaning from mechanical ventilation.

While Jiang, et al., **[21]** conducted a study about "predicting weaning and extubation outcomes in long-term mechanically ventilated patients using the modified Burns Wean Assessment Program scores" and revealed difficult weaning among the majority of the studied sample. Also, Perren, Brochard, **[22]** conducted a published study about "managing the apparent and hidden difficulties of weaning from mechanical ventilation" and revealed difficult weaning from mechanical ventilator among more than one third of the studied sample.

From the investigator's point of view, weaning from mechanical ventilation is a process in which the intensive care nurse participates in both planning and implementation, the weaning from mechanical ventilator mainly is affected by many factors such as the lung condition and the ability of the respiratory muscles to initiate spontaneous breathing. In this regards, Rose, Dainty, Jordan & Blackwood, **[23]** reported that; weaning from mechanical ventilation is a time-sensitive and complex intervention influenced by patient, clinician, and organizational factors and by clinical interventions such as sedation management, delirium prevention, and early mobilization.

Sedation dose and ICU length of stay:

The current study revealed a significant statistical relationship between dose of sedation and ICU length of stay among the studied sample where patients who received recommended dose of different sedatives had less days in ICU than patients who received high dose of sedatives. This finding is inconsistent with a published clinical study about sedation and analgesia in intensive care: A comparison of fentanyl and remifentanil where Celik, Clark, and Macit, **[18]** found no statistical relationship between fentanyl and remifentanil groups in relation to days of ICU. Doses of midazolam, fentanyl, and remifentanil were titrated according to patients' requirements and hemodynamics.

To support researcher's finding guidelines for sedation, pain, and delirium management by Barr, et al. **[24]** recommended that sedative medications should be titrated to maintain a light rather than a deep level of sedation in adult ICU patients, unless clinically contraindicated.

Level of sedation and mechanical ventilator days:

The current study revealed a significant statistical relationship between level of sedation and days of mechanical ventilator in days. The investigator found patients who lightly sedated had more days of mechanical ventilator than who were agitated. This finding is consistent with that of Cevik and his colleagues, (2011) where they found that the introduction of a sedation scale led to a reduction in the duration of mechanical ventilation. Also in (2010), Jackson and his colleagues **[25]** conducted published a study entitled as "a systematic review of the impact of sedation practice in the ICU on resource use, costs and patient safety" and revealed that using of sedation protocols are associated with reduction in ICU stay and weaning time.

On the other hand Xing, et al., **[26]**, conducted a study about effect of sedation on short-term and long-term of critically ill patients with acute respiratory insufficiency, they found no significant statistical relationship between level of sedation and mechanical ventilator days, while the mortality rate was influenced more strongly by level of sedation.

Conclusion:

The present study revealed that patients who received deprivan had less days in ICU. Patients who received recommended dose of sedatives had less days of mechanical ventilator. Finally patient who were lightly sedated had more days on mechanical ventilation than patient who were agitated.

Recommendation:

- Provide updated guidelines related to weaning from mechanical ventilation to maximize the

patient's opportunity to be weaned without further complications.

- Maintain a close observation to the mechanically ventilated sedated patients to evaluate their conditions and to detect the complications early.
- Develop a comprehensive tool to facilitate the continuous assessment of the mechanically ventilated patients who receives sedation to observe the outcomes and prognosis.
- Replication of the study on a larger probability sample selected from different geographical areas in Egypt is recommended to obtain more generalizable data.

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العلاقة بين الإيقاف اليومى للمهدئات وبعض المخرجات المرضية للمرضى المتصلين بجهاز التنفس الإصطناعى

بالرغم من آن العلاج بالمهدئات يقلل من حدة التوتر لدى مرضى الحالات الحجة إلا آنه مصحوب بمضاعفات مثل زيادة مدة الإتصال بجهاز التنفس الإصطناعى ومدة الإقامة بالعناية المركزة ومدة الإقامة فى المستشفى. لذلك فإن المرضى الذين يتلقون العلاج بالمهدئات سريعا ما يكونوا نائمين فترة طويلة بعد توقف المهدئات لذلك فإن تقليل هذه المهدئات يتطلب التوقف اليومى للمهدئات لمدة حوال ٣٠ دقيقة. وقد آجريت هذه الدراسة بهدف دراسة العلاقة بين الإيقاف اليومى وبعض مخرجات المرضى المتصلين بجهاز التنفس الإصطناعى فى إطار مدة الإعتماد على جهاز التنفس الصناعى وكذلك معدل فشل آعضاء الجسم ومدة إقامة المريض داخل الرعاية المركزة لتحقيق الهدف من الدراسة آختيرت عينة هادفة إشتملت على ٨٠ مريض ومريضة من وحدات العناية المركزة بمستشفيات جامعة القاهرة وذلك بعد التآكد من موافقتهم آو موافقة من ينوب عنهم فى حالة الإغماء على الإشتراك فى الدراسة، وكان ذلك على مدى ٩ شهور بعد آن تم شرح الدراسة والهدف من إجرائها وآن المشاركة فيها تطوعية ويمكنهم الإنسحاب فى آى وقت دون التآثير على كفاءة علاج المريض آو آسراره الشخصية. وكانت آهم نتائج البحث هى: الرجال هم الغالبية العظمى (٧٢.٥٪) من عينة الدراسة، وكانت آعمار النسبة الآكبر وهى مقاربة للنصف (٤٣.٨٪) تتراوح آعمارهم من سن ٥٠–٦٠ عاما. نوع المهدئ الآكثر إستخداما هو الفنتانيل فى عينة الدراسة بنسبة (٤٣.٨٪). توجد علاقة ذات دلالة إحصائية بين إسم المهدئ المستخدم ومدة الإقامة فى وحدة الرعاية المركزة. توجد علاقة ذات دلالة إحصائية بين كمية المهدئ المستخدم وبين مدة الإقامة فى وحدة الرعاية المركزة بين عينة الدراسة.