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Knowledge and Practice of Intensive Care Nurses Towards Weaning Criteria From Mechanical Ventilation at Public Hospitals in Sana'a City-Yemen

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Abstract:

Background of the study: Weaning from MV is the process of gradually withdrawing artificial ventilation to the intubated patients for short or long time in critical care setting. **Aims**: to assess the knowledge and practices of ICU nurses regarding the weaning criteria from the ventilator in public hospitals in Sana'a City– Yemen.

Methods: A descriptive, cross-sectional study was carried out at a public hospitals in Sana'a City-Yemen among ICU nurses. The sample size was 93 Yemeni nurses. A stratified random sampling was applied. Data were collected by using a close-ended questionnaire to testing knowledge and observational checklist to testing nurses practice. A pilot study was conducted and validity and reliability of the questionnaire was also tested. The data were analyzed using SPSS and measured using frequency and percent for categorical variables and Means and SD for quantitative variable. t-test was used to determine the differences between two variables and one-way ANOVA determine the differences between more than two variables. Chi-squaire test was used to determine the relationship between variables. A P-value < 0.05 was considered statistically significant.**Results:** The results showed that (54%) of the nurses had correct knowledge toward WC from MV whereas (46%) of them had incorrect knowledge. While (39%) of nurses had poor knowledge, and (50%) of them had moderate knowledge and (11%) of them had good knowledge, While (46%) of the nurses were correctly practiced to WC from MV, whereas (44%) of them were not done and (10%) need correctly practiced. As regards to level of practice, (49%) had poor practice, (36%) had a moderate practice and (15%) had a good practice. There was no significant differences in the mean knowledge scores toward WC by demographic characteristics of nurses (P>0.05). A significant differences in the mean knowledge scores toward WC according to diploma degree in respiratory therapy was found (P<0.05) but not for course training in WC and courses training in ICU (P>0.05). A statistically significant differences was found in mean practice scores toward WC from MV by demographic characteristics of nurses (P<0.05) but not for sex (P>0.05). A statistically significant differences was found in mean practice scores toward WC from MV by diploma degree in respiratory therapy, course training in WC and courses training in ICU (P< 0.05). **Conclusion:** This study conclude that (50%) of the nurses had moderate knowledge toward WC from MV and (36%) of them had moderate practice, This study recommended increasing knowledge and practice of ICU nurses through the courses training and implementation WC and protocol weaning in all ICU units.

Keywords: weaning criteria; Knowledge and practice; ICUs; Nurses; Sana'a

Introduction

Weaning from Mechanical ventilation (MV) is the process of gradually withdrawing artificial ventilation to the intubated patients for short or long time in critical care setting. Weaning patients from ventilator is complex and challenging task for nurses, knowing and practice-weaning criteria are most essential to successful patient's outcome with MV[1].

MV is applied to treat respiratory insufficiency caused by failure of oxygenation and respiratory muscles to improve gas exchange and reduce the work of breathing[2]. As soon as the clinical status is improving, the process of liberation from respiratory (weaning) can be initiated. In about 15–20% of patients the weaning process is significantly delayed. "Prolonged weaning" is defined by failure of at least 3 spontaneous breathing trials (SBT) or, if the process lasts more than 7 days, after the first SBT[3]. Consequently, weaning constitutes a major challenge for the intensive care staff. It is important to wean the patient from MV as expeditiously as possible. Several studies indicate that the implementation of nurse-led, criteria weaning reduces the amount of time spent on MV, the length of ICU stay, and associated costs[4,5].

Mechanical ventilation is often life-saving procedures, but constitutes an expensive treatment modality which is associated with iatrogenic complications such as ventilator-associated pneumonia and ventilator-induced lung injury, which can lead to the development of the acute respiratory distress syndrome and increased mortality and morbidity [6,7,8].

Critical care nurses' skill level is dependent upon their knowledge, experience of, and exposure to, critically ill patients[9]. Nurses can improve patient recovery by skilled and timely reduction of sedation as well as weaning from ventilation. The skilled critical care nursing will reduce the risk of complications, the number of critical care bed days and improve patient outcomes. Nurses' is key provider of information to patients, relatives and other members of the interdisciplinary team[10]. Moreover, successful weaning often requires a joint multidisciplinary treatment approach[11].

About 20% to 30% of patients are difficult to wean from invasive mechanical ventilation. The pathophysiology of difficult weaning is complex. Accordingly, determining the reason for difficult weaning[4]. Weaning the patient from mechanical ventilation can be very challenging problems in the intensive care unit, especially in patients with underlying pulmonary disease and after prolonged ventilation periods[12].

Prolonged MV leads to high resource utilization and poor outcomes. Patients that require prolonged weaning experience longer hospital stays as well as increased complications, mortality and healthcare costs[13,14,15]. Consequently, in an effort to reduce morbidity and mortality associated with MV, clinical and research attention, over the last 20 years, has been focused on reducing the duration of mechanical ventilation[16]. Weaning practice requires that bedside nurses continually make decisions about the patients" ventilation management. The ability to make clinical judgments involves a complex process using both domain-specific knowledge and decision-making methods[17, 18].

Aim of the study

To assess the Knowledge and Practice of Intensive Care Nurses Towards Weaning Criteria From Mechanical Ventilation at Public Hospitals in Sana'a City-Yemen.

Subjects and Methods

This study was conducted in four public hospitals in Sana'a City, Yemen that include (Al-Thowrah, Al-Sabeen, Al-Kuwait, and Al- Jomhury hospital). All hospitals provide primary, secondary and tertiary healthcare and referee hospitals to all Yemeni people. A descriptive, cross-sectional study carried out to determine the knowledge and practice of intensive care nurses towards weaning criteria from mechanical ventilation at public hospitals in Sana'a city - Yemen.

The sample size was determined through the use of EpiCalc program, 2000. The sample size was calculated as follows: the population of the study were all nurses working in ICUs at four public hospitals was 220 nurse, precision (3%), and 95%

confidence level. The final sample size was 93 Yemeni nurses. Calculation, the sample size from each hospital the following formula was used: $\frac{n}{N} *$ $K = sample\ size\ to\ each\ hospital$. Where: n = (sample size), N= (study population) and k= (population of each hospital). A stratified random sampling was applied to select the sample size from four major public hospitals. After official approvals obtained from the previously selected settings, the researcher obtained lists of nurses' currently working in the study settings via random sampling methods. The list was reviewed and nurses meeting the inclusion criteria were included in the study to select from the total population (N)= 220 nurses were subdivided according to hospitals (Al- Thowrah hospital n= 105, Al-Jomhury hospital n= 45, Al-Kuwait hospital n= 37 and Al-Sabeen hospital n= 33). Then a selection of nurses to be sampled from each stratum was done by probability proportional sampling in order to ensure that all nurses in public hospitals have the ICUs same probability of selection irrespective of the size of their cluster. Data were collected through the three months from 1st September to 30th November 2022. A structured questionnaire was administered to assess the knowledge of ICU nurses. A close-ended questionnaire with an information letter and consent form attached and handed to ICU nurses by the researcher. The questionnaire consisted of thirty questions. The questionnaire divided into the following parts: a) Demographic characteristics of nurses, b). knowledge of ICU nurses toward weaning criteria from mechanical ventilation, which included twenty questions. This part comprised of (Knowledge of ICU nurses about screening of respiratory and hemodynamic, Knowledge of ICU nurses about readiness weaning criteria from MV, Knowledge of ICU nurses about modes of weaning intervention from MV, Knowledge of ICU nurses about recommendation parameters of weaning intervention from MV, Knowledge of ICU nurses about tolerance criteria for weaning from MV, Knowledge of ICU nurses about extubation). c) The observation checklist: was used to assess the actual nurses' practice. During the three shifts,

each nurse cared for mechanically ventilated patients was observed by the researcher for about 1-4 hours, the time is selected randomly whereby the researcher stays around ICU. Within these hours, the nurses were occupied with patients care practice.

Observed nurses' time was conveniently selected and were not aware that they were being observed. The observation checklist include the twenty six observations. The observation checklist is divided into the following section: a). Practice of ICU nurses about (readiness for weaning criteria from MV, weaning intervention from MV, extubation). The questionnaire and observation checklist were adopted from previously validated and reliable studies by Ouellette, et al (2017)[19], Haugdahl, (2016)[20]; Burns, S. M (2012)[21], Contro, (2019)[22], J.M. Cairo (2016)[23], Robert & Kenneth (2017)[24], *David W chang, (2013)[25].* The validity of the Arabic version of the questionnaire reviewed by five experts in order to determine if all questions were clearly worded and would not be misinterpreted. The reliability of the questionnaire was tested using Cronbach's Alpha So, the tool was found to be highly reliable for data collection coefficient was (0.86). The piloted of the questionnaire was performed before data collection. A pilot study was done on 10% of nurses working in the ICU on items in a questionnaire to assess the clarity, feasibility of the study. The pretest nurses were excluded from the final study sample.

A statistical package for the social science (SPSS 21.0) was used for statistical analysis of data. Descriptive measures, including frequency, the percentage for categorical variables, and the mean and standard deviation for numerical variables. Each correct responses to the items in the questionnaire or checklist was given (1 score), and (0 score) was given to either wrong or don't know responses. The above weight was converted into percentage ranging from (0-100 %). The levels of knowledge were classified as follows: good level was assigned to nurses who got 76%- 100%, moderate 50%-75% and poor 0%-49%. To find the relationship between knowledge and demographic data was used chi-square test for

categorical data, and *P*-value <0.05 was considered significant. Approval was obtained prior to carrying out this study from the faculty of medicine and health sciences of Al-Razi University.. The purpose of the study was explained to participants. The consent was taken from all nurses in the study.

Results

Demographic characteristics of ICU nurses

Most of the nurses (75.3%) had working experience from 1-5 years, and (65.6%) of them were in age ranged from 20-30 years, About two third (64.5%) of the nurses had diploma degree, while more than half of the nurses (54.8%) were married, and (51.6%) of the nurses were male, moreover (28%) of the nurses working in general ICU. Table1.

Overall knowledge toward weaning criteria from MV

As regards to the overall knowledge of ICU nurses toward weaning criteria from MV showed that (54%) of the nurses had correct knowledge toward weaning criteria from MV, whereas (46%) of them had incorrect knowledge. Figure 1.
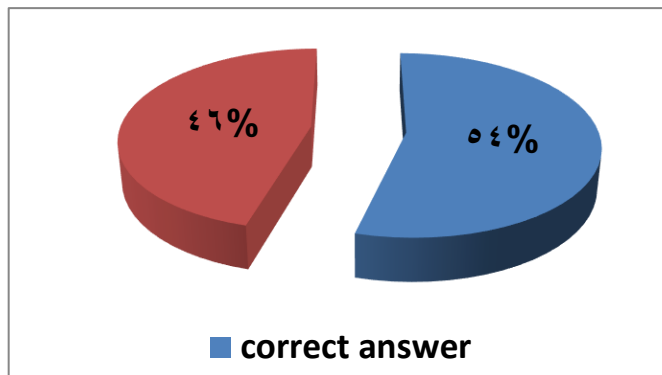

Figure 1: Overall knowledge of nurses toward weaning criteria from MV (N= 93)

Level of knowledge about weaning criteria from MV

Figure 2 shows the level of knowledge among nurses toward the weaning criteria from MV. The findings of the study showed that (39%) of the nurses had poor level of knowledge, whereas (50%) of the nurses had moderate level of knowledge, and (11%) of the nurses had good level of knowledge.
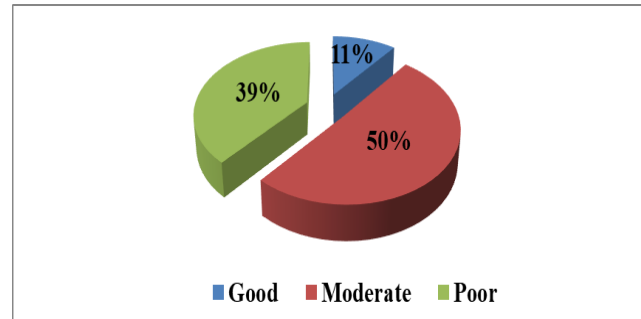

Figure 2: Level of knowledge among nurses toward WC from MV (N= 93).

Overall knowledge scores by demographic characteristics of nurses

Table 2 presents the relationship between the demographic characteristics and the overall knowledge scores toward weaning criteria from MV. The result showed that there was no statistically significant differences between the mean knowledge scores toward weaning criteria from MV and all demographic characteristics the (*P*-value >0.05).

Association between level of knowledge toward WC from MV and workplace

Table 3 shows the relationship between the level of knowledge toward weaning criteria from MV and workplace. There was no a statistically significant the relationship between the level of knowledge toward weaning criteria from MV and hospital name and type of ICU (*P*-value= 0.180 and 0.063) respectively.

Table 1: Demographic characteristics of ICU nurses (N= 93).

Demographic characteristics	F	%
Sex		
• Male	**48**	**51.6**
• Female	45	48.4
Age group		
• 20-30	**61**	**65.6**
• 31-40	30	32.3
• >40	2	2.2
Marital status		
• Single	42	45.2
• Married	**51**	**54.8**
Level of education		
• Diploma degree	**60**	**64.5**
• Bachelor degree	29	31.2
• Master degree	4	4.3
Type of ICU		
• General ICU	**26**	**28.0**
• Pediatric ICU	15	16.1
• Emergency ICU	13	14.0
• Surgical ICU	7	7.5
• Medical ICU	13	14.0
• Other (Neuro, Nephro, Cardio, burn,) ICU	19	20.4
Work experience (years)		
• 1 - 5 years	**70**	**75.3**
• 6 - 10 years	16	17.2
• >10 years	7	7.5

Table 2: Overall knowledge scores toward WC from MV by demographic characteristics of nurses (N= 93)

Workplace	Level of knowledge			p-value[*]
	Good	**Moderate**	**Poor**	
Hospital Name				
• Al-Thowrah hospital	4	26	14	0.180
• Al-Jomhury hospital	4	5	10	
• Al-Kuwait hospital	0	10	6	
• Al-Sabeen hospital	2	6	6	
Type of ICU				
• General ICU	1	11	14	0.063
• Pediatric ICU	0	8	7	
• Emergency ICU	1	6	6	
• Surgical ICU	1	5	1	
• Medical ICU	1	9	3	
• Other (Neuro, nephron and cardio)	10	47	36	

*t-test; **One way ANOVA*

Table 3: Association between level of knowledge toward WC from MV and workplace of nurses (N= 93)

| Demographic characteristics	Total knowledge scores	p-value
	Mean $\pm$ SD	
Age group		
• 20- 30	43.1±13.1	0.235**
• 31- 40	44.9±12.5	
• >40	29±1.4	
Sex		
• Male	42.1±12.3	0.307*
• Female	44.8 ± 13.6	
Marital status		
• Single	40.7±13.1	0.072*
• Married	45.6 ± 12.5	
Educational level		
• Diploma degree	43.7 ± 13.7	0.682**
• Bachelor degree	42.1±11.2	
• Master degree	47.7±14.3	
Work experiences		
• 1 to 5 years	43.98±13.3	0.705**
• 6 to 10 years	42.25±10.6	
• ≥10 years	40.14±15.6	

x^2 -test

Overall knowledge scores toward WC from MV by training among nurses

Table 4 presents the differences in the overall knowledge scores toward weaning criteria from MV and training among nurses. There was statistical significant differences between the mean knowledge scores toward weaning criteria from MV and diploma degree in respiratory therapy (*P*-value=0.004) while there was no statistically significant differences in mean knowledge scores toward weaning criteria from MV by course training in ICU and course training in weaning criteria (*P*-value= 0.309 and 0.086) respectively.

Table 4: Differences in mean knowledge scores toward WC from MV by training among nurses (N=93)

Training	Overall score toward WCFMV		p-value*
	Yes	No	
Courses training in ICU			
• Mean ± SD	45.1 ± 14.1	42.3 ± 12.2	0.309*
Course training in weaning criteria			
• Mean ± SD	43.1± 15.9	43.5 ± 12.4	0.086*
Diploma in respiratory therapy			
• Mean ± SD	51.8± 8.8	41.6± 12.7	**0.004***

*t-test
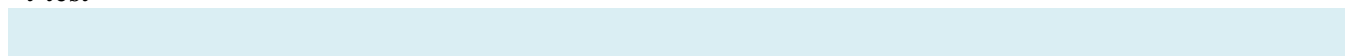
Overall practice of ICU nurses toward WC from MV

Figure 3 describes the overall practice of ICU nurses toward weaning criteria from MV. The findings of this study showed that less than half of the nurses (46%) correctly practiced, whereas (44%) of the nurses didn't performed, on the other hand the nurses who do these but need correction practices (10%).
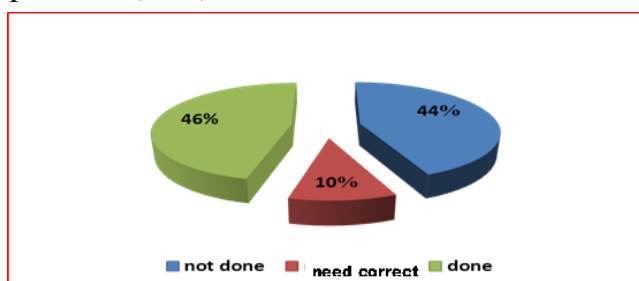

Figure 3: Overall practice toward WC from MV among nurses (N= 93)

Level of practice among ICU nurses toward WC from MV

Figure 4 reveals that the level of practice toward weaning criteria from MV among nurses. There was (49%) of the nurses had poor level of practices toward weaning criteria from MV.

Whereas (36%) of them had a moderate level of practices and (15%) of them had a good level of practices.
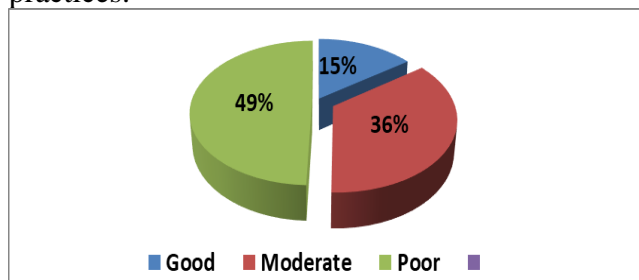

Figure 4: Level of practice among nurses toward WC from MV (N= 93)

Overall practice scores in relation to demographic characteristics of nurses

A statistically significant differences was found in the mean practice scores by age (P-value=0.004). Furthermore there was a significant differences in mean practice scores by marital status of nurses (P-value=0.031), level of educational (P-value=0.016) and work experiences (P-value=0.048). While there was no statistically significant differences in mean practice scores toward weaning criteria from MV by sex.

Table 5: Differences in mean practices scores toward WC from MV by nurses training (N= 93)

Demographic characteristics	Overall practices toward WCFMV	p-value
	Mean ± SD	
Age group		
• 20- 30	24.5±8.6	
• 31- 40	31.1± 9.16	**0.002****
• >40	26±8.5	
Sex		
• Male	26.1 ±9.3	0.554*
• Female	27.2 ± 9.2	
Marital status		
• Single	24.4 ±9.7	**0.031***
• Married	28.6 ± 8.4	
Educational level		
• Diploma degree	24.8±8.5	
• Bachelor degree	29.4±9.8	**0.016****
• Master degree	34.7±8.1	
Work experiences		
• 1 to 5 years	25.6±9.3	
• 6 to 10 years	27.7±7.9	**0.048****
• ≥10 years	34.1±9.0	

*t-test; **One way ANOVA

Overall practice scores by nurses training

Table 6 shows a statistically significant differences in the mean practice scores toward weaning criteria from MV by course training in ICU (P-value=0.033). Also, there is statistically significant differences in mean practice scores by course training in weaning criteria was found (P-value= 0.034). Furthermore there is statistically significant differences in mean practice scores by diploma in respiratory therapy (P-value= 0.026).

Table 6: Differences in mean practice scores toward WC from MV by nurses training

Training	Overall score toward WCFMV		p-value*
	Yes	**No**	
Courses training in ICU			
• Mean ± SD	29.1 ± 10.29	24.96 ± 8.1	0.033
Course training in weaning criteria			
• Mean ± SD	31.26± 10.1	25.76 ± 8.85	0.034
Diploma in respiratory therapy			
• Mean ± SD	31.31± 8.11	25.68 ± 9.1	0.026

t-test

Association between level of practice and workplace toward WC from MV

Table 7 shows the association between level of practice toward weaning criteria from MV and workplace of nurses. There is statistically significant association between level of practice toward weaning criteria from MV and hospital name was found (P-value= 0.009), on other hand a statistically significant association between level of practice toward weaning criteria from MV and type of ICU was observed (P-value= 0.04).

Table 7: Association between level of practice toward WC from MV and workplace

Workplace	Level of practices			p-value[*]
	Good	**Moderate**	**Poor**	
Hospital Name				
• Al-Thowrah hospital	11	17	16	**0.009**
• Al-Jomhury hospital	2	10	7	
• Al-Kuwait hospital	1	2	13	
• Al-Sabeen hospital	0	4	10	
Type of ICU				
• General ICU	1	9	16	**0.04**
• Pediatric ICU	2	3	10	
• Emergency ICU	2	4	7	
• Surgical ICU	4	3	0	
• Medical ICU	1	6	6	
• Other (Neuro, nephron and cardio)	4	8	7	

x^2- test

Discussion

Demographical data of ICU nurses

Ninety-three ICU nurses were recruited and all completed the questionnaire, about (51.6%) of ICU nurses were males. The mean age± SD, 29.7± 4.5 years with (65.6%) aged ranged from 20-30 years. (64.5%) had a diploma in nursing, less than half of ICU nurses (40.9%) had courses training in ICU and the majority of nurses (83.9%) had not received on training weaning criteria from MV, and (70%) were working in ICU for 1-5 years. The findings of the present study agreed with the study conducted in university of norway by Haugdahl (2016)[20]. also our results are in an agreement with the study conducted by Allen and Mcgrattan (2013)[5]. (61.4%) had qualification diploma degree in nursing and (78.9%) working in general intensive care unit.

This results were disagreement with results reported by Markle (2014)[11]. A study to assess the knowledge regarding weaning the critically ill patient from MV among ICU nurses at selected hospital in Bangalore, (80%) had no training program on the weaning criteria from MV.

Overall knowledge toward weaning criteria from MV:

The present study showed that the overall knowledge of ICU nurses toward WC from MV showed that (54%) of the nurses had correct knowledge toward weaning criteria from MV, whereas (46%) of them had incorrect knowledge, also our results are an disagreement with the study was conducted by Allen and Mcgrattan (2013)[5]. in Bangalore, Indian that. The results of the study showed that the overall knowledge of ICU nurses toward WC from MV showed that (43.6%) of the nurses had correct knowledge toward weaning criteria from MV, whereas (56.4%) of them had incorrect knowledge.

Level of knowledge toward weaning criteria from MV:

In the light of the current study results. The study reveal that half of studied nurses (50%) had moderate knowledge level and (39%) had poor knowledge level of total score knowledge of nurses regarding weaning criteria from MV. In the

same line Pradhan C, Shrestha R (2017)[25]. who study nurses' knowledge regarding weaning criteria of mechanical ventilation in a teaching hospital, Chitwan, found that 54.4% of nurses had inadequate knowledge regarding weaning criteria. This finding is relative agrees with the study was conducted in Uttar Pradesh, India by[3]. Weaning from MV in chronic obstructive pulmonary disease care nursing regarding evidence-based guidelines for weaning criteria from MV, who found there was (48.8%) of ICU nurses had a satisfactory knowledge regarding guidelines for weaning criteria from MV.

Overall knowledge toward weaning criteria from MV:

The current study has found that there was no significant differences in the overall knowledge scores toward weaning criteria from MV according to demographic characteristics (P-value>0.05). This is similar to the results of the study was conducted on knowledge and practice of intensive care nurses on weaning criteria from MV by Carter, S. L. (2012)[8]. in Muncie, Indiana, this has indicated that there is no differences according demographic characteristics. Furthermore, this is similar to the findings by Pradhan C, Shrestha R (2017)[25]. in Toronto, Canada study worked, this indicated there is no statistically significant differences in the overall knowledge toward criteria weaning from MV by demographic characteristics of ICU nurses. Pradhan C, Shrestha R (2017)[25] who study nurses' knowledge regarding weaning criteria of the patients with mechanical ventilation in a teaching hospital, found association between level of knowledge regarding weaning criteria with age (p-value < 0.006), professional experience (p-value < 0.001), clinical areas (p=0.002) and professional experience in critical area (p-value <0.001). Those explanation and findings are in the opposite side with current study. Darshan K, et al., (2009)[27] who assessed the knowledge of staff nurses on mechanical ventilation and found that there is no significant association between knowledge scores of staff nurses in relation to their demographic data. This was a good supportive to the finding of the present study that revealed association between overall knowledge

with education level, and documentation with age.

Another study conducted in Egypt Medical Nursing, Port Said University, Deralakatte , Mangalore by Shehab, M, et al (2018)[28], reported that critical area is not significant of level of knowledge on weaning criteria. As well as present study findings were agree with Fathimath et al., (2013)[26] who found that there is no association between knowledge score and demographic variables such as years of experience (p-value>0.05), ICU training (0.64), and level of education(p-value >0.5).

As regards to the training of nurses, the current study has found that a there was no significant differences in the overall knowledge toward criteria weaning from MV according to training courses and diploma (P-value>0.05) but there was significant differences in regards dot diploma degree in respiratory (P-value<0.05). This is similar to the results of the study was conducted to assess knowledge and practice of intensive care nurses on weaning criteria from MV by Carter, S. L. (2012)[8]. In Muncie, Indiana, this has indicated that there was no differences according to training courses.

On other hand, this was similar to the study was done by Pradhan C, Shrestha R (2017)[25] in Toronto, Canada study worked, this indicated that there was no differences in the overall knowledge toward criteria weaning from MV by courses training of ICU nurses.

Level of practice among ICU nurses toward WC from MV

On respect of, total score of nurses' level of practice regarding weaning from mechanical ventilation in the current study. The results shows that approximately half of studied nurses had poor level of practice and (15%) of them good level practice and (36%) 0f the nurses had moderate satisfactory practice level, In the same line with Mariam et al., (2018)[29] they done a study on nurses' performance regarding weaning of patient's from mechanical ventilation, mentioned that more than half of the studied nurses had un satisfactory practices level regarding weaning of patient from MV and (34%) of them had

satisfactory practice level regarding WC from MV. This results disagree with Osman (2017)[30] who done a study on nurses' performance regarding weaning of patient's from mechanical ventilation, mentioned that (73.3%) of the studied nurses had satisfactory practice level regarding weaning of patient from mechanical ventilation.

Overall practice toward weaning criteria from MV by demographic characteristics:

The current study has found that a significant differences in the overall practice toward criteria weaning from MV and age, level of education and experiences of nurses (P-value<0.05), this is similar to the results of the study was conducted by Garriga Rodríguez, P. (2016)[7]. in Catalunya toward the overall practice toward criteria weaning from MV and age, level of education and experiences of nurses (*P*-value<0.05).

Conclusion

This study conclude that (50%) of the nurses had moderate knowledge toward WC from MV and (36%) of them had moderate practice, Updating of new information to develop knowledge and practice skills in weaning criteria from MV to provide the best care to patients.

Acknowledgements

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معارف وممارسات ممرضات العناية المركزة تجاه معايير الفطام من التهوية الميكانيكية في المستشفيات العامة بمدينة صنعاء-اليمن.

الملخص

الخلفية: يُعتبر الفطام من التهوية الميكانيكية عملية سحب التهوية الصناعية تدريجيًا من المرضى الذين تم تنبيبهم لفترة قصيرة أو طويلة في بيئة العناية الحرجة. **الأهداف:** تقييم معرفة وممارسات ممرضات وحدة العناية المركزة فيما يتعلق بمعايير الفطام من التهوية الميكانيكية في المستشفيات العامة بمدينة صنعاء ــ اليمن. **الطريقة:** تم إجراء دراسة وصفية مقطعية في المستشفيات العامة بمدينة صنعاء-اليمن بين ممرضات وحدة العناية المركزة. بلغ حجم العينة 93 ممرضة يمنية. تم تطبيق تقنية العينة العشوائية الطبقية. تم جمع البيانات باستخدام استبيان مغلق لاختبار المعرفة وقائمة مرجعية ملاحظة لاختبار ممارسات الممرضات. تم إجراء دراسة تجريبية وتم اختبار صلاحية وموثوقية الاستبيان. تم تحليل البيانات باستخدام برنامج SPSS وتم قياسها باستخدام التكرار والنسب المئوية للمتغيرات الفئوية والوسائل والانحراف المعياري للمتغيرات الكمية. تم استخدام اختبار t لتحديد الفروقات بين متغيرين واختبار ANOVA الأحادي لتحديد الفروقات بين أكثر من متغيرين. تم استخدام اختبار كاي سكوير لتحديد العلاقة بين المتغيرات. تم اعتبار القيمة الاحتمالية P<0.05 دالة إحصائيًا. **النتائج:** أظهرت النتائج أن (54%) من الممرضات كان لديهن معرفة صحيحة تجاه معايير الفطام من التهوية الميكانيكية بينما (46%) منهن كان لديهن معرفة غير صحيحة. في حين أن (39%) من الممرضات كان لديهن معرفة ضعيفة، و(50%) منهن كان لديهن معرفة متوسطة و(11%) منهن كان لديهن معرفة جيدة. أما فيما يتعلق بالممارسة، فـ (46%) من الممرضات قمن بممارسة صحيحة تجاه معايير الفطام من التهوية الميكانيكية، بينما (44%) منهن لم يقمن بذلك و(10%) يحتجن إلى ممارسة صحيحة. أما بالنسبة لمستوى الممارسة، فـ (49%) كان لديهن ممارسة ضعيفة، و(36%) كان لديهن ممارسة متوسطة و(15%) كان لديهن ممارسة جيدة. لم تكن هناك فروقات ذات دلالة إحصائية في متوسط درجات المعرفة تجاه معايير الفطام بناءً على الخصائص الديموغرافية للممرضات (P>0.05).وُجدت فروقات ذات دلالة إحصائية في متوسط درجات المعرفة تجاه معايير الفطام حسب درجة الدبلوم في العلاج التنفسي (P<0.05) ولكن ليس للدورات التدريبية في معايير الفطام ودورات التدريب في وحدة العناية المركزة .(P>0.05) وُجدت فروقات ذات دلالة إحصائية في متوسط درجات الممارسة تجاه معايير الفطام من التهوية الميكانيكية بناءً على الخصائص الديموغرافية للممرضات (P<0.05) ولكن ليس للجنس.(P>0.05) وُجدت فروقات ذات دلالة إحصائية في متوسط درجات الممارسة تجاه معايير الفطام من التهوية الميكانيكية حسب درجة الدبلوم في العلاج التنفسي، الدورة التدريبية في معايير الفطام ودورات التدريب في وحدة العناية المركزة (P< 0.05). **الاستنتاج:** خلصت هذه الدراسة إلى أن (50%) من الممرضات كان لديهن معرفة متوسطة تجاه معايير الفطام من التهوية الميكانيكية و(36%) منهن كان لديهن ممارسة متوسطة. توصي هذه الدراسة بزيادة المعرفة والممارسة لممرضات وحدة العناية المركزة من خلال الدورات التدريبية وتطبيق معايير الفطام والبروتوكولات في جميع وحدات العناية المركزة.