Nurses' Practice of Documentation in Critical Care Units: An observation from Egypt

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Abstract

Background: Critical care nurses' are involved in many activities in critical care units from patient admission to discharge. Each nursing activities should be completely and accurately documented. **Aim**: This study aimed to assess critical care nurses' practice of documentation in the critical care units. **Setting:** The study was carried out in three critical care units affiliated to a university hospital in Egypt. **Method:** A descriptive research design was utilized to conduct this study. **Tool of the study:** One tool was developed by the researcher after strength review of the relevant literature to assess critical care nurses' practice regarding the documentation and consisted of two parts as follows: **Part I: Nurses' socio-demographic characteristics, Part II: Critical Care Nurses' Observational Checklist regarding Documentation:** This tool was used to assess critical care nurses' practice in critical care units during providing care for patients. **Results**: Revealed that most nursing interventions were either not or incompletely document and there were highly statistically significant p<0.001 were found between documentation of nursing intervention in relation to routine care, changing position, range of motion exercises, and endotracheal tube care. **Conclusion**: The results of this study revealed that the practice of critical care nurses' on nursing documentation were either not or incompletely document. Poor documentation may threaten the safety of patient care and needs urgent improvement. **Recommendations:** Improving nursing documentation in the critical care units through nursing practice supervision, evidence based practice, staff development and provide continuing training programs for nurses', and the handover should take place in the intensive care unit by educating critical care nurses' to use the handovers checklists to improve the handover process.

Keywords: Critical Care Units, Documentation, Nurses' Practice

Introduction

Critical care nurses' (CCNs) are involved in many activities in critical care units (CCUs) from patient admission to discharge. They provide continuous 24-hr patient care, which is divided into several shifts. Examples of nursing care include care of invasive devices, administering enteral feeding, oral care, monitoring fluid intake and output, ambulation, measuring central venous pressure, administrating of medications, discharge planning and education **(Asmirajanti, Hamid, &Hariyati, 2019; Taiye, 2015; Wang, Hailey, & Yu, 2011).** Also, CCNs are responsible for protecting patients from bed sore, falling and infections **(Boltz, Capezuti, Wagner, Rosenberg, & Secic, 2013; Zhang et al., 2021).** Each nursing activities should be completely and accurately documented. Documentation is a vital tool of professional practice that ensures the quality of patient care and improves patient outcomes and defined as the record of nursing care that is intended and provided to patients by nurses **(Asmirajanti et al., 2019).**

Nursing documentation is a vital function of professional practice to improve the quality of nursing care **(D'Amour, Dubois, Tchouaket, Clarke, &Blais, 2014; Frigstad, Nøst & André, 2015)**. Accurate documentation encourages nurses to work effectively and appropriately **(Paans, Sermeus, Nieweg & Schans, 2010)** provide detail information about the patient assessment, nursing interventions that provided to the patients in CCUs, show patient progress, response to the intervention and provides a platform for nurses to better understand the delivery of nursing care. Also, it is an indicator of nurse performance and the quality of nursing service provided in CCUs **(Okaisu, Kalikwani,**

Wanyana, & Coetzee, 2014; Jefferies, & Langdon, 2010; Jefferies, Johnson, Nicholls & Lad, 2011).

Nursing documentation in the CCUs is very important for patients and health care provider **(Hercigonja-Szekeres, Somek, Cukljek, &Ilic, 2014)**. The documentation should be concise and clear, accurate, up-to-date to protect a nurse in a court of law **(Okaisu et al., 2014; Wong, 2009)**. The standards in writing nursing documents should include what to do and what not to do. Examples for what to do are: using blue or blacking, initialing and dating each entry data, document data in clear and readable manner, document data that was omitted and the reason of omission, and signing the first initial and last name with each entry data. Also, examples of what not to do are: overwriting, documenting data before the event occurred, using liquid correction, and skipping blank spaces **(Kumar, 2017)**.

There are many studies were conducted that the most of CCNs inadequately practice regarding nursing documentation either incomplete documentation of nursing assessments or missing documentation the relevant information of patient care thus produces excessive problems and affect the quality and coordination of patients' care **(Hector, 2010; Hercigonja-Szekereset al., 2014, Obioma, 2017)**. Moreover, in Egypt two studies investigated nurses' practice of documentation in different areas in CCUs **(Ahmed & Kandeel, 2017; Kandeel & Attia, 2013)**. These studies reported poor nurses' practice regarding nursing documentation in CCUs in Egyptian hospitals and recommended continuous evaluation of nurses' practice**.** Poor documentation can negatively impact on the health care providers, affecting patient outcomes, quality of nursing care and associated with the problem such as forgetting of medications, or double medication administrations and risk of legal harm **(Asmirajanti et al., 2019; Hailu, 2017; Kebede, Endris, & Zegeye, 2017; Taiye, 2015)**.

Documentation in CCUs remains problematic due to lack of training, lack of supplies, lack of comprehensive nursing education, high workloads of nurses', shortage of time and CCUs overcrowded **(Jasemi, Zamanzadeh, Rahmani, Mohajjel, & Alsadathoseini, 2012; Nakate, Dahl, Drake, & Petrucka, 2015; Taiye, 2015)**. Failure to documenting any patient data, may affect the quality of nursing care and patients' outcomes in the CCUs. Hence, this study will accomplish to assess CCNs practice of documentation in the CCNs.

Aim of the study:

This study aimed to assess critical care nurses' practice of documentation in the CCUs.

Materials and Method

Materials

Design

A descriptive research design was utilized in this study. This type of research enables the researcher to observe and describe what is occurring accurately and systematically in more details without any intervention, filling in the missed parts and expanding the understanding. It also provide more in-depth understanding of the participant behaviors, attitudes, perception and experiences **(Nassaji, 2015; Polit & Beck, 2018).**

Setting

The current study was carried out in three trauma CCUs affiliated to a university hospital in Egypt. The three units includes 24 beds and are well equipped with advanced technology and manpower needed for patients' care such as mechanical ventilator, cardiac monitors and suction machines. These units are responsible for providing services to trauma patients. The nurse-patient ratio in these units is approximately 1:2.

Subjects

A convenience sample of 62 nurses working in the selected CCUs was enrolled in the study according to the following selection criteria; adult $\geq$ 20 years old, males and females, involved in direct patients' care and willing to participate in this study.

Sample Size Calculation

The sample size was calculated by EPI INFO TM (version 7.2.2.6). Based on an expected frequency of 50%, an acceptable margin of error of 5% and a confidence level of 90%, the sample size was 62 nurses divided into 3 clusters according to availability; 35 Diploma nurses, 20, bachelor nurses and 7 technical institute nurses.

Data Collection Tools

Data were collected using one tool **"Critical Care Nurses' Practice of Documentation Tool"** which was developed by the researcher after strength review of the relevant literature **(Akhu-Zaheya, Al-Maaitah, & Bany Hani, 2018**; **Dehghan, Dehghan, Sheikhrabori, Sadeghi, &Jalalian, 2013; Ho, 2016**; **Obioma, 2017; Rosdahl& Kowalski, 2012; Tumby, 2013)** to assess critical care nurses' practice of documentation. It encompassed two parts as follows:

Part I: Participant Nurses' Socio-demographic Characteristics

It involved participants' nurses' characteristics including the age, gender, marital status, level of education, occupation, years of work experience in the CCU, and attended training courses/workshops regarding documentation.

Part II: Critical Care Nurses' Observational Checklist Regarding Documentation

This part was used to assess critical care nurses' documentation of care. The researchers developed the instrument based on evidence-based clinical guidelines, documentation principles, and the foundation of the nursing care researched literature. This part includes 62 interventions categorized under seven main domains including: documentation of nursing care activities (Patients' assessment data and nursing interventions); documentation of handover data; documentation of doctor's orders; documentation of time; writing formatting & style; accountability of documentation; and information security. The interventions were rated on a 3- point Likert Scale; document completely = 2 marks, document incompletely = 1 mark, and not document = zero. The scores ≥80 % were considered as a satisfactory practice level and the scores <80 % were considered as unsatisfactory practice level.

Validity and Reliability of the Tool

The tool was tested for its content validity by a panel of 5 experts from critical care and emergency nursing. The recommended modifications were made accordingly. The Cronbach alpha test was used to test the reliability of the data collection tool and it was 0.90 which indicates a highly reliable tool.

Pilot Study

A pilot study was carried out before starting data collection on 10% of the studied nurses to evaluate the clarity, feasibility, comprehensiveness and applicability of the data collection tool. Nurses who were involved in the pilot study were excluded from the study sample.The structure of the nurses' working schedule included three shifts that cover the day, morning shift (8.00 am to 2.00 pm), afternoon shift (2.00 pm to 8.00 pm), and night (8.00 pm to 8.00 am).

Ethical Considerations

The current study was approved by the local research ethics committee. Selected nurses were informed about the details of the study and were invited to participate in the study. They were assured that participation in the study was voluntary and that if they choose not to participate, this not affect them in any way. Additionally, they were also informed their personal information would be kept confidential and would not be linked with their observed performance. Nurses who accepted to take part in this study were asked to give an informed consent.

Data Collection

Data were collected between February 2019 and August 2019. Official permission was taken before conducting the current study from the selected university hospital and the CCUs. The researcher used two methods for data collection, including direct observation of nurses' practice during documentation of care, and a review of

patients' records for nurses' documentation. Participant nurses' socio-demographic data such as age, sex, marital status, experience, type of unit, educational degree of the documenter, participation in training workshop and work shift (morning, afternoon, night) were obtained once using **part 1 of the tool**. Each participant nurses' was continuously observed by the researcher without any interference from 8.00 am to 8.00 pm until termination of patient care activities. Each observed nurse was documented directly in the structured observation checklist using **(part two of the tool).** Also, patients' records were reviewed for nurses' documentation of all nursing activities. Data were collected secretly and coded to facilitate data analysis.

Data Analysis

Data were entered and analyzed using IBM-SPSS software (IBM Corp. Released 2017. IBM SPSS Statistics for Windows, Version 25.0. Armonk, NY: IBM Corp.). Qualitative data were presented as N (%). One-Sample Chi-Square test (= Chi-square goodness-of-fit test) was used to determine whether the distribution of participants in a single categorical variable, e.g., gender, follows a hypothesized distribution. Our null hypothesis is that the categories of each variable occur with equal probabilities. Fisher's exact test was used to compare a categorical variable between two groups for small sample size (< 5 per at least one cell). Kendall's tau_b test was used to assess the correlation between two ordinal variables. For any of the used tests, results were considered as statistically significant if p value ≤ 0.050. Appropriate charts were used to graphically present the results whenever needed.

Results

Table (1): illustrates the percentage distribution of studied nurses regarding personal characteristics. The current study enrolled 62 nurses. The most frequent age group of studied nurses were from 20- 30 years old (51.6%) and the majority were female (87.1%). Regarding years of experience, it was found that the most (51.6%) of studied nurses had 1-10 years of nursing experience in CCUs and the most frequent level was a secondary school (56.5%). In relation to the training workshop, it can also be found that all of the study nurses' did not attend training courses regarding nursing documentation of critically ill patients.

Table (2): This table showed the low frequencies of completely document items. Allergic status, activity level and pain level were not document at all by any of the study nurses. And there were highly statistically significant p<0.001 were found regarding documentation of assessment data.

Table (3): This table showed that most nursing interventions were either not or incompletely document and there were highly statistically significant p<0.001 were found between documentation of nursing intervention in relation to routine care, changing position, range of motion exercises, endotracheal and tracheostomy tube care, administering enteral feeding, and measuring central venous pressure.

Table (4): This table showed performance of handover items by studied nurses'. Most items were either not or incompletely done. Devices attached to the patients was completely document by 4.8% of participating nurses. Both vital signs and intake & output were completely document by 3.2% of participating nurses.

Table (5): This table showed that most items related to quality of nursing documentation were either not or incompletely document and there were highly statistically significant p<0.001 were found between quality of nursing documentation in relation to time and style of nursing care.

Table (6): This table showed correlation between documentation quality & socio demographic data by study nurses'. Regarding *age* as well as years of experience, there was statistically significant positive correlation with documenting in blue or black ink (r=0.636) and following the hospital's policy for patient's record (r=0.582) and there was statistically significant negative

correlation with documenting care that was omitted (r=-0.458), recording any error that occurred (r=-0.379), recording patient's name on each page (r=-0.601), maintaining confidentiality of patient's data (r =-0.607) and maintaining confidentiality during telephone conversations (r =-0.635).

Regarding **education level**, there was statistically significant positive correlation with documenting care that was omitted (r=0.631), recording any error that occurred (r=0.570), recording patient's name on each page (r=0.359), ensuring that patient's record is complete (r=0.501), maintaining confidentiality of patient's data (r=0.478) and maintaining confidentiality during telephone conversations (r=0.635)and there was statistically significant negative correlation with following the hospital's policy for patient's record (r=-0.537), recording the time by am or pm (r=-0.282), using correct forms of charting (r=-.279), and documenting in blue or black ink (r=-0.515).

Table (1): Frequency Distribution of the CCNs' According to their Socio-Demographic Data

Personal data	N=(62)		Significance test	
	Frequency	%	X2	p
Age group (years):				
- 20-30	32	51.6		
- 31-40	10	16.1	11.742	**0.003**
- 41-50	20	32.3		
Sex:				
- Male	8	12.9	34.129	**<0.001**
- Female	54	87.1		
Marital status:				
- Single	12	19.4		
- Married	48	77.4	56.645	**<0.001**
- Widow	2	3.2		
Education level:				
- Secondary school	35	56.5		
- Technical institute	7	11.3	19.000	**<0.001**
- Bachelor	20	32.3		
Experience (years):				
- 1-10	32	51.6		
- 11-20	10	16.1	11.742	**0.003**
- >20	20	32.3		
Shift:				
- Morning	34	54.8	0.581	0.446
- Afternoon	28	45.2		
Training workshop	0	0.0	0.0	0.0

Data are presented as frequency and percentage. P value: One-Sample Chi-Square test.

Table (2): Illustrates Data Assessment Documentation

Items	Nurses' performance (N=62)			Significance test	
	Complete document	**Incompletely document**	**Not document**	**X2**	**p**
1. **Level of consciousness**	1 (1.6)	59 (95.2)	2 (3.2)	58.065	**<0.001**
2. **Vital signs**	11 (17.7)	50 (80.6)	1 (1.6)	25.806	**<0.001**
3. **Allergic status**	0 (0.0)	0 (0.0)	62 (100)	-	-
4. **Intake and output**	3 (4.8)	59 (95.2)	0 (0.0)	50.581	**<0.001**
5. **Activity level**	0 (0.0)	0 (0.0)	62 (100)	-	-
6. **Nutritional status**	14 (22.6)	46 (74.2)	2 (3.2)	18.645	**<0.001**
7. **Elimination pattern**	5 (8.1)	54 (87.1)	3 (4.8)	43.613	**<0.001**
8. **Pain level**	0 (0.0)	0 (0.0)	62 (100)	-	-
9. **Laboratory results**	0 (0.0)	1 (1.6)	61 (98.4)	58.065	**<0.001**

Data are presented as frequency and percentage. P value: One-Sample Chi-Square test.

Table (3): Illustrates Nursing Intervention Documentation

Domain	Nurses' performance (N=62)			Significance test	
	Complete document	**Incompletely document**	**Not document**	**X2**	**p**
General: Routine care					
1. Oral care	2 (3.2)	51 (82.3)	9 (14.5)	67.968	**<0.001**
2. Eye care	2 (3.2)	51 (82.3)	9 (14.5)	67.968	**<0.001**
3. Nail care	2 (3.2)	51 (82.3)	9 (14.5)	67.968	**<0.001**
4. Perineal care	2 (3.2)	51 (82.3)	9 (14.5)	67.968	**<0.001**
5. Bed bath	2 (3.2)	50 (80.6)	10 (16.1)	64.000	**<0.001**
General: Safety measures					
1. Use of safety measures	0 (0.0)	0 (0.0)	62 (100)	---	----
2. Monitoring restraint	0 (0.0)	0 (0.0)	62 (100)	----	-----
General: Physiotherapy					
1. Change position	3 (4.8)	42 (67.7)	17 (27.4)	37.774	**<0.001**
2. Breathing &coughing exercises	0 (0.0)	38 (61.3)	24 (38.7)	3.161	0.075
3. Range of motion exercises	0 (0.0)	3 (4.8)	59 (95.2)	50.581	**<0.001**
4. Percussion & vibration	0 (0.0)	30 (48.4)	32 (51.6)	0.065	0.799
General: Invasive device care					
1. Mechanical ventilation tube	0 (0.0)	19 (30.6)	43 (69.4)	9.290	**0.002**
2. Oropharngeal airway	0 (0.0)	11 (17.7)	51 (82.3)	25.806	**<0.001**
3. Endotracheal tube	2 (3.2)	38 (61.3)	22 (35.5)	31.484	**<0.001**
4. Tracheostomy tube	0 (0.0)	8 (12.9)	54 (87.1)	34.129	**<0.001**
5. Nasogastric tube	0 (0.0)	30 (48.4)	32 (51.6)	0.065	0.799
6. Central venous catheter	0 (0.0)	37 (59.7)	25 (40.3)	2.323	0.128
7. Intercostal tube	1 (1.6)	13 (21.0)	48 (77.4)	57.710	**<0.001**
8. Urinary catheter	0 (0.0)	17 (27.4)	45 (72.6)	12.645	**<0.001**
9. Peripheral catheter	0 (0.0)	21 (33.9)	41 (66.1)	6.452	0.011
Specific:					
1. Administering enteral feeding	0 (0.0)	53 (85.5)	9 (14.5)	31.226	**<0.001**
2. Performing tracheal suction	0 (0.0)	35 (56.5)	27 (43.5)	1.032	0.310
3. Measuring CVP	6 (9.7)	48 (77.4)	8 (12.9)	54.323	**<0.001**
4. Administering medication	1 (1.6)	55 (88.7)	6 (9.7)	86.161	**<0.001**
5. Inserting a urinary catheter	0 (0.0)	19 (30.6)	43 (69.4)	9.290	**0.002**
6. Inserting nasogastric tube	0 (0.0)	21 (33.9)	41 (66.1)	6.452	0.011
7. Withdrawing arterial blood sample	1 (1.6)	37 (59.7)	24 (38.7)	32.161	**<0.001**
8. Performing wound care	0 (0.0)	22 (35.5)	40 (64.5)	5.226	0.022

Data are presented as frequency and percentage. P value: One-Sample Chi-Square test.

Table (4): Illustrates Handover Documentation

Item	Nurses' performance (N=62)			Significance test	
	Complete document	Incompletely document	Not document	X2	p
1. Client's name, age and bed number	0 (0.0)	35 (56.5)	27 (43.5)	1.032	0.310
2. Name of assigned physician	0 (0.0)	1(1.6)	61(98.4)	58.065	**<0.001**
3. Medical diagnosis	0 (0.0)	4(6.5)	58(93.5)	47.032	**<0.001**
4. Devices attached to the patient	3(4.8)	58(93.5)	1(1.6)	101.258	**<0.001**
5. Changes in ventilation modalities	0 (0.0)	37(59.7)	25(40.3)	2.323	0.128
6. Vital signs	2(3.2)	17(27.4)	43(69.4)	41.645	**<0.001**
7. Abnormal assessment data	0 (0.0)	1(1.6)	61(98.4)	58.065	**<0.001**
8. Type of diet	0 (0.0)	3(4.8)	59(95.2)	50.581	**<0.001**
9. Special body position	0 (0.0)	1(1.6)	61(98.4)	58.065	**<0.001**
10. Scheduled diagnostic tests	0 (0.0)	1(1.6)	61(98.4)	58.065	**<0.001**
11. Test results	0 (0.0)	0 (0.0)	62(100)	---	-----
12. Changes in medical orders	0 (0.0)	2(3.2)	60(96.8)	54.258	**<0.001**
13. Intake and output	2(3.2)	26(41.9)	34(54.8)	26.839	**<0.001**
14. Amount of fluid remains	0 (0.0)	20(32.3)	42(67.7)	7.806	0.005

Data are presented as frequency and percentage. P value: One-Sample Chi-Square test.

Table (5): Illustrates Quality of Nursing Documentation

Domain	Nurses' performance (N=62)			Significance test	
	Complete document	Incompletely document	Not document	X2	p
Time					
1. Follow frequency of documentation	1(1.6)	58(93.5)	3 (4.8)	101.258	**<0.001**
2. Recorddate and time	0 (0.0)	61 (98.4)	1(1.6)	61.000	**<0.001**
3. Record the time by am or pm	1(1.6)	41(66.1)	20(32.3)	38.742	**<0.001**
Style					
1. Document is complete and concise	0 (0.0)	60(96.8)	2 (3.2)	60.000	**<0.001**
2. Document clear and readable manner	0 (0.0)	61(98.4)	1(1.6)	61.000	**<0.001**
3. Use correct forms of charting	9 (14.5)	53 (85.5)	0 (0.0)	53.000	**<0.001**
4. Use correct grammar and spelling	0 (0.0)	59 (95.2)	3 (4.8)	59.000	**<0.001**
5. Use approved abbreviations	0 (0.0)	34 (54.8)	28(45.2)	28.000	0.525
6. Not skipping blank spaces	1(1.6)	59 (95.2)	2 (3.2)	106.677	**<0.001**
7. Document in blue or black ink	21 (33.9)	41(66.1)	0 (0.0)	41.000	0.016
Accountability					
1. Sign the first initial and last name	0 (0.0)	57 (91.9)	5 (8.1)	57.000	**<0.001**
2. Document before the end of the shift	0 (0.0)	56 (90.3)	6 (9.7)	56.000	**<0.001**
3. Document care that was omitted	0 (0.0)	27 (43.5)	35 (56.5)	27.000	0.374
4. Record any error occurred	0 (0.0)	24 (38.7)	38 (61.3)	38.000	0.099
5. Record patient's name on each page	0 (0.0)	38 (61.3)	24 (38.7)	38.000	0.099
6.Ensure patient's record is complete	0 (0.0)	35 (56.5)	27 (43.5)	35.000	0.374
Information					
1. Maintain confidentiality of patient's data	1(1.6)	36 (58.1)	25 (40.3)	31.000	**<0.001**
2. Maintain confidentiality during telephone conversations	0 (0.0)	34 (54.8)	28 (45.2)	34.000	0.525
3. Follow the hospital's policy for patient's record	22 (35.5)	40 (64.5)	0 (0.0)	22.000	0.031

Data are presented as frequency and percentage. P value: One-Sample Chi-Square test.

Table (6): Illustrates The Correlation Between Documentation Quality & Sociodemographic Data:

Item		P value (age)	P value (education)	P value (experience)
Time				
1.	Follow frequency of documentation	0.344	0.349	0.344
2.	Record date and time	0.356	0.636	0.356
3.	Record the time by am or pm	0.619	0.021	0.060
Style				
1.	Document is complete and concise	0.693	0.787	0.693
2.	Document clear and readable manner	0.356	0.636	0.356
3.	Use correct forms of charting	0.552	0.023	0.552
4.	Use correct grammar and spelling	0.745	0.579	0.745
5.	Use approved abbreviations	0.455	0.114	0.455
6.	Not skipping blank spaces	0.588	0.129	0.588
7.	Document in blue or black ink	**<0.001**	**<0.001**	**<0.001**
Accountability				
1.	Sign the first initial and last name	0.348	0.294	0.348
2.	Document before the end of the shift	0.937	0.545	0.937
3.	Document care that was omitted	**<0.001**	**<0.001**	**<0.001**
4.	Record any error occurred	**0.002**	**<0.001**	**0.002**
5.	Record patient's name on each page	**<0.001**	**0.004**	**<0.001**
6.	Ensure patient's record is complete	**<0.001**	**<0.001**	**<0.001**
Information				
1.	Maintain confidentiality of patient's data	**<0.001**	**<0.001**	**<0.001**
2.	Maintain confidentiality during telephone conversations	**<0.001**	**<0.001**	**<0.001**
3.	Follow the hospital's policy for patient's record	**<0.001**	**<0.001**	**<0.001**

P value: Kendall's taub test.

Discussion

Nursing documentation is a powerful tool of nursing practice among healthcare professionals that must be completed to ensure the quality of care and better patient outcomes **Andualemet, et al. (2019).** Attention to effective nursing documentation is extremely important for ensuring that CCNs are providing quality of nursing care to their critically ill patients **(Obioma, 2017; Batto, 2016)**. The quality of effective nursing documentation should include actual, up-to-date, and comprehensive information about the patient assessment, nursing care provided, signature, date and evaluation of patient outcomes. Therefore, it is critical that assessments, nursing interventions, and evaluation of patient outcomes should be systematically and accurately documented **Okaisu, et al. (2014)**.

In a review of nurses' notes in the CCUs, it was found that ineffective documentation of nursing assessments and other health relevant data in patient medical records. I noted that the health-relevant data was incomplete document or omitting. Poor documentation can negatively affect the quality of patient care **(Inan&Dinc, 2013)**. Effective nursing documentation improve the evidence of care given and patients' outcomes, and evaluation of nursing care provided **Tower, Chaboyer, Green, Grer, & Wallis, (2012)**. This attracted to conduct this study to assess nurses' practice of documentation in the CCUs.

Based on the results of the current study, the current study revealed that the most frequent age group of CCNs who wrote nursing documentation were 20-30 years and the majority of them were female, married and attending the morning shift. Also, all of nurses' did not attend training courses regarding nursing documentation of critically ill patients. This may be due to the training workshops were scheduled during the morning shift, the nurses' shifts and their family needs prevent their remaining longer time in the hospital and lack of time to document, thus resulting in ineffective documentation and poor quality of patient care.This result was constant with **Dehghan, et al. (2013)** who reported that the majority of CCNs were in the age group of 20-30 years old, females, and married. Also, all of

nurses' not participated in the documentation workshops. This result is supported by **Obioma, (2017)** who reported that all staff nurses and administrative nurses not attend in the documentation training.

Regarding data assessment documentation, it was found that the majority of nurses' not completely documented data (nutritional status, vital signs, elimination pattern, intake & output and conscious level). This may be due to lack of nurses' knowledge about data that should be documented and lack of proper structure for recording. This result is constant with **Dehghan, et al. (2013)** who reported that the content of nursing documentation was incomplete or undocumented. This results is contradicted with **Blake Mowatt, Lindo, & Bennett, (2013)** who showed that accurate nursing documentation by nurses and the nurses familiar with the documentation guidelines. Also, allergic status, activity level and pain level were not document at all by any one of the study nurses'. This may be due to lack of a structured style of nursing documentation, lack of time to document and most nurses not obvious how to document nursing care systematically. This result is in agreement with **Batto, (2016)** who stated that the majority of nurses' not documented pain level following intervention thus affecting the quality of care provided. Also, **Nasiriani, Dehqani, & Roknabadi, (2014)** stated that the majority of nurses' not recording data during patient's hospitalization in CCUs thus affecting the immediate decision making.

Regarding documentation of nursing interventions, it was revealed that most nursing interventions were either not or incompletely document (CVP measurement, changing position, routine care & ETT, Intercostal tube, administering medications & withdrawal of arterial blood samples). This result is supported with **(Andualem et al., 2019; Dehghan et al., 2013)** who showed that the majority of nurses' not documented or incompletely document nursing care provided. Also, monitoring safety measures were not document by any one of the study nurses', this may be due to inadequate charting system and inaccessible of the record. This result was constant with **Asmirajanti et al., (2019)**.

Concerning handover documentation, it was reported that most performance of handover items were either not or incompletely document (devices attached to the patients, vital signs and intake & output). This may be due to no standardized handover process in the CCUs, staff distracts during handover because patient needs to be done urgently and lack of the time spent on the handover. This result was supported with **Jasemi et al., (2012)** who showed that some common items in vital sign and intake & output fluid flow sheets was insufficient document. Also, **(Ho, 2016; Kowitlawakulet et al., 2015; Spooner, Chaboyer, Corley, Hammond, & Fraser, 2013)** found that the documentation handover of ICU patients is insufficient or absent from clinical handovers resulting in unfortunate decision making.

Regarding the quality of nursing documentation, it was found that most items were either not or incompletely document (documenting in blue or black ink, use of correct forms of charting, following the frequency of documentation, recording the time by am or pm, not skipping blank spaces, nurses' signatures and maintaining the confidentiality of patient's data, following policy the hospital's policy for patient's record). This may be due to increasing nurses' workload and nurse shortage.This result was supported with **(Akhu Zaheya, et al., 2018; Yu, Zhang, Gong, & Zhang, 2013)** who found that the manual's documentation of data had increased the prospect of incomplete or missing information such as incorrect terms, using inappropriate acronym, incomplete records, illegal modification of record content, unclear writing, incomplete and repetitive data, leaving blank notes and missing signatures in nursing notes.

Conclusion:

Critical care units are complex area where nursing activities in the CCUs should be documented. The results of this study revealed that the practice of CCNs on nursing documentation were either not or incompletely document. Poor documentation may threat the safety of patient care and needs urgent improvement, this is alarming to assess the

practice of CCNs and effectiveness of nurses' education and in-service training programs.

Recommendations:

- Improving nursing documentation in the CCUs through nursing practice supervision, evidence based practice, staff development and in service training programs for nurses'.

- Providing nursing documentation guidelines & standards in every hospital to advance structure nursing documentation.

- The handover should take place in the ICU by educating CCNs to use the handovers checklists to improve the handover process.

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