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Application of modified nursing documentation system in Intensive Care Unit

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ABSTRACT

A patient's medical record (chart) is a legal document in continuity of care and may be used in court as evidence, so it is important that every chart and record must be clear, simple and an accurate language. **Methodology**: A descriptive study was conducted to apply modified nursing documentation system in intensive care unit (I.C.U.) [(7)].A purposive sample of 50 nurses was selected from intensive care unit at main teaching hospital (Special surgeries, Baghdad teaching hospital, Al-Kadymia, Ibn Al-Nafis and Al-Yarmouk hospital) in Baghdad city from 10th October 2011 to 30 August 2012.The instrument was constructed and initiated of two sections; section one includes the nurses demographic characteristic, section two was the documentation tool which consists of 8 parts, first part consist of nursing admission assessment form, part two ventilation flow sheet, part three neuro-sensory flow sheet, part four intake-output fluid flow sheet, part five medication chart, part six wound assessment flow sheet, part seven weaning assessment chart and part eight discharge and health education record sheet. Descriptive and inferential statistical methods were used to analyze the data. Reliability of the instrument was done for the tool parts and flow sheets through test and retest, also a panel of experts determined the validity of the tool.**Results;** The findings of the study demonstrated that the majority of the sample was from special surgeries and Baghdad teaching hospital, they were married, at diploma and bachelor level of education, they were demonstrated a high percentage of applications to 8 parts of documentation tool, not involved in any I.C.U. Training courses in Iraq nor in a broad. The mean age of the sample was 31.9, ±9.07 years. The mean period of sample employment in intensive care unit was 5.3 years. There was significant association between study variables such as sample hospital distribution, I.C.U. involvement training courses, level of education to application of patient admission assessment form, the study presented significant association between some of study variables and nurses response to application of documentation systems flow sheets such as ventilation, neuro-sensory, wound and weaning, while no significant associate with intake-output, medication and discharge and education record. **Recommendations:** According to these findings, the research recommended to applying the modified nursing documentation system in all Iraqi intensive care unit., Provide a training course for intensive care unit nurse to practice patient information documentation in an accurate and systemic method and Applying more documentation tools in other hospital department in an electronic method, which is a new trend in nursing settings.

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INTRODUCTION

Documentation is the method of recording and reporting information relevant to client care has developed as a response to standards of practice, legal and regulatory standards, institutional standards and policies, and societies norms. Recording and reporting are the major way's health care providers communicate, the client's medical record is a legal document of all activities regarding client care[(15)].

Also, throughout the development of modern nursing, a variety

of documentation systems have emerged in response to changes inherent in health care delivery, changes in consumer and legal expectations. Federal and state regulations, accreditation standard, and research findings direct provider accountability for the documentation of services. Systems of recording and reporting data pertinent to the care of clients have evolved primarily in response to the deem and for health care practitioners to be held accountable to societal norms, professional standards of practice ,legal and regulatory standards ,and institutional policies and standards.[5] Moreover, the medical record is a permanent legal, written document that communicate information relevant to clients healthcare management, members of all health care disciplines who deliver patient are (e.g. nurses, social workers, dietitian), physician make entries in the medical record, such as chart, after each clinic visit, and information about client health care is recorded.[11]

Besides, 24-Hour patients and acuity charting flow sheets are used after documenting routine aspects of nursing care efficiently throughout a 24-hour period. These Twenty-four-hour reports are increasing used in conjunction with acuity reports, which allow nurses to rank patients as high to low acuity in relation to both the patient's condition and need for nursing assistance or intervention. A trauma patient or critical patient whose condition changing rapidly and who requires intensive nurse monitoring and intervention will merit a higher acuity rank than stable conditional patient.[13]

Importance of the study:

Nursing documentation must be logical, must make sense, must have meaning and must communicate. The researcher noticed that intensive care units lacking critical care documentation charts and flow sheets, even if it exists contains little information to cover the quality of care provided in this particular settings. Considerable attention has been given in the last few years to the documentation practices of the medical personnel. Accurate and complete documentation of nursing care improves efficiency, aids communication among member of the patient care team, and eases continuity of care. The standardized and simplification of process; such as documentation are believed to reduce the number of errors.[1] Besides, mentioned that the nursing process and documentation depend on each other for providing safe and effective client care. The nursing process lays out a plan of care that guides not only the care provided but also the accurate recording of that care. Documentation provides a legal record that all aspects of the nursing process were properly carried out and that professional standards of care, regulatory standards, and agency policies were met.[15] .Also, reporting and recording are the major communication techniques used by health care providers to direct client–based decision making and continuity of care. The medical record serves as a legal document for recording all client activities assessed and initiated by health care practitioners[5]. The investigator of this study would like To evaluate the applicability of nursing admission assessment form, ventilation flow sheet, neuro-sensory flow sheet, intake-output flow sheet, medication chart, wound assessment flow sheet weaning assessment sheet discharge and education record, by Iraqi intensive care unit nurses.

Methodology:

A descriptive study was conducted in Baghdad city, from first of April 2011 to first of August 2012.to apply a modified nursing documentation system in intensive care unit.Prior to actual collection of data, formal administration permeation was obtained to conduct the study.To obtain availed and comprehensive data, five main hospitals were selected, Baghdad teaching hospital, Special surgeries hospital, Al- Yarmok teaching hospital and Al-Kadymia teaching hospital

These hospitals are general referral hospital in Baghdad city, for treatment and outpatient clinic. They are composed of many specialized medical and surgical wards. IBN-Al-Nafise teaching

hospital specialized for medical and surgical cardiac disease.

To obtain accurate data and representative sample, a purposive sample of 100 nurses from five settings was selected. The criteria of the sample the nurses who graduated from different levels of education, both sexes (male, female), and the nurses who are working in ICU for at least 6 months.

Design of documentation tool in I.C.U:

Section one: Nurses demographic data sheet: This section includes descriptive information about the nurses ,hospital name ,age ,sex, marital status ,level of education in nursing, years of experience in hospital ,years of employment in intensive ,care unit ,and if the nurse have a previous course in intensive care unit.)

Section two: documentation tool: The modified documentation tool consists of 8 parts according to the following:-

Part one: Nursing admission assessment form.

Part two: Ventilation follow sheet.

Part three: Neuro –sensory flow sheet

Part four: intake –output fluid flow sheet

Part five: medication chart

Part Six: wound assessment flow sheet

Part Seven: weaning assessment sheet

Part eight: discharge and patient education record

The content validity was determined for the documentation tool through the use of 22 panel of experts. As a results of conducting pilot study, reliability was carried out through the reliability internal consistency (with test and retest) reliability of the 8 parts of the documentation tool was (0.88)

The following technique was used by the researcher to data collection, after obtaining permission from each of the sample.

a. Direct interviewing with participant

b. personal filling the formal.

This table shows that the majority of the sample 32% are from both hospitals, Baghdad hospital and Surgical specialist, they are married with 54% diploma level of education, 76% not involved in I.C.U. course and they share 14% only of there courses, were in Iraq.

Also the table indicated that the sample mean of age was 31.9 ± 9.07, 8.11± 7.18 was the mean of employment period and 5.3 ± 6.20 was the mean of employment in I.C.U.

Result of the study:

Table (1 a): Demographic characteristics of the sample (n= 100)

No.	Items	F	%
1.	**Hospital**		
	Surgical specialist	16	32
	Baghdad hospital	16	32
	Al-Kadymia hospital	6	12
	Ibn Al-Nafis hospital	7	14
	Al-Yarmouk hospital	5	10
2.	**Marital status**		
	Single	16	32
	Married	34	68
		Mean-Years	**SD**
7.	**Age**	31.9	9.07
8.	**Period of employment**	8.11	7.18
9.	**Employment Period in I.C.U.**	5.3	6.26

F = Frequency

(Table 1b) nurses involvement in I.C.U. course

1-	**Involvement in I.C.U. course**	**Yes F(%)**12(24)	**No F(%)**38(76)		**Total F(%)**
					50(100)
2.	**Number of courses**	1time **F(%)**5(10)	2times **F(%)**1(14)	3times **F(%)**1(14)	7(38)
3.	**Place of courses**	In Iraq **F(%)**4(57.1)	Abroad **F(%)**2(28.6)	Both 1**F(%)**(14.3)	7(38)

F=frequency. %= percentage

Table (2): Association of nurses' response to application of documentation tools in ICU with the hospitals (ICU nurses number= 50

No	**Documentation tools:**	**nurses' response to application of documentation tools according to ICU in hospitals**					**Association**
		Surgical specialist	**Baghdad hospital**	**Al-Kadymia**	**Ibn Al-Nafis**	**Al-Yarmouk**	
		F (%)	**F (%)**	**F (%)**	**F (%)**	**F (%)**	
1-	**nursing admission-assessment form**	16 (100)	16 (100)	5(83.3)	7(100)	5(100)	$X^2 = 7.4$ d.f. = 4 P = 0.17
2-	**The ventilation flow sheet.**	13(83.3)	16(100)	6(100)	6(86.7)	5(100)	$X^2 = 1.7$ d.f. = 4 P = 0.19
3-	**Neuro –sensory flow sheet**	14(87.5)	16(100)	4(66)	5(71.4)	1(20)	$X^2 = 18.6$ d.f. = 4 P = 0.002
4-	**Intake –output fluid flow sheet**	16 (100)	16 (100)	6(100)	7(100)	5(100)	$X^2 = 3.1$ d.f. = 4 P = 0.1
5-	**Medication chart**	16 (100)	16 (100)	6(100)	7(100)	5(100)	$X^2 = 7$ d.f. = 4 P = 0.1
6-	**Wound assessment flow sheet**	16 (100)	16 (100)	6(100)	5(57.)	5(100)	$X^2 = 26.6$ d.f. = 4 P = 0.01
7-	**Weaning assessment sheet**	14(87.5)	16 (100)	4(60)	4(57)	1(20)	$X^2 = 18.6$ d.f. = 4 P = 0.002
8-	**Discharge and patient education record**	15(93.7)	16 (100)	6(100)	4(57)	5(100)	$X^2 = 17.5$ d.f. = 4 P = 0.05

F= frequency

The table indicated that there is no statistical significant difference between nurses' response to application of documentation tools related nursing admission- assessment form, the ventilation flow sheet, Intake –output fluid flow sheet and medication chart. Also revealed statistically significant difference in documentation tools responses in wound assessment flow sheet and in document discharge and patient education record while highly significant differences between hospitals in nurse's documentation response related to neuro –sensory flow sheet and weaning assessment sheet

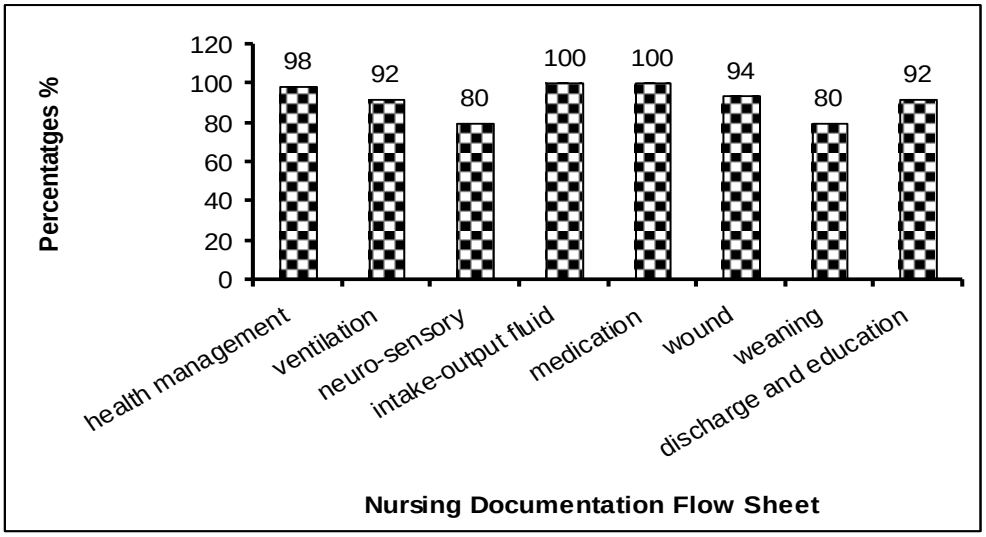

Figure (1): Distribution of application nursing documentation flow sheet according to nurses response to application of 8 parts of documentation tool.

Table (3) Association of nurses' response to application of documentation tools with Level of education in nursing

No	Documentation tools:	nurses' response to application of documentation tools according to nurses educational level			Association
		Secondary N.S	Diploma	Bachelorate	
		F (%)	F (%)	F (%)	
1-	**Nursing admission-assessment form**	8(100)	26(96)	15(100)	$X^2 = 0.8$ d.f. = 3 P = 0.8
2-	**The ventilation flow sheet.**	8(100)	24(88.9)	15(100)	$X^2 = 1.7$ d.f. = 3 P = 0.06
3-	**Neuro –sensory flow sheet**	4(50)	20(81.8)	13(	$X^2 = 7.4$ d.f. = 3 P = 0.05
4-	**Intake –output fluid flow sheet**	8(100)	27(100)	15(100)	$X^2 = 3.7$ d.f. = 3 P = 0.3
5-	**Medication chart**	8(100)	27(100)	15(100)	$X^2 = 0.47$ d.f. = 3 P = 0.4
6-	**Wound assessment flow sheet**	6()	25(92.5)	13(	$X^2 = 0.8$ d.f. = 3 P = 0.8
7-	**Weaning assessment sheet**	4(50)	22(81.5)	15(100)	$X^2 = 7.4$ d.f. = 3 P = 0.05
8-	**Discharge and patient education record**	8(100)	23(85.2)	15(100)	$X^2 = 2.6$ d.f. = 3 P = 0.44

N.S = Nursing School F = Frequency

The table indicated that there is no statistical significant difference between nurses' response to application of documentation tools related nursing admission- assessment form, intake – output fluid flow sheet, medication chart**,** wound assessment flow sheet and discharge and patient education record with level of nurses education, while statistically significant difference in documentation tools responses in the ventilation flow sheet, neuro –sensory flow sheet and weaning assessment sheet

Discussion:

Although several significant variables (such as age, marital status, distribution in different hospitals, educational level in nursing, period of employment in nursing , period of employment in I.C.U., involvement in I.C.U. courses, number of courses and whether in Iraq or a broad) have an impact on documenting patient information in an accurate method.

The study showed that most of the study samples, 32% were from Baghdad teaching hospital and 32% of surgical specialist hospital. Sixty eight percent were married, and 54% have gotten a diploma degree and 26% only got a bachelor degree. Regarding participation in I.C.U training course, 76% of the study samples haven't got any training courses related information of documentation in I.C.U whether in Iraq nor abroad except 24% of them have involvement in Iraq I.C.U as a general course.

The nurses in I.C.U field work are changing with the various needs of patient and new technologies, the nurse must be aware of all new trends in her field of work by sharing in training courses in her place or abroad to expand her base of knowledge in recording and documenting all types of received patient information and data.

The study showed that the mean age of nurses were 31.9, ±9.07 means of employment period were 8.11± 7.18 and in I.C.U with means period. 5.3±6.26 years

This result revealed that the documentation allows nurses and other care providers to communicate about the care provided, also documentation promotes good nursing care and supports nurses to meet professional and legal standards[14]. Also, the result of a study agreed with Al-Botany, who mentioned in her study, that in spite of the complexity and expanding nurses' responsibilities, with the importance of documentation of their professional work, the results indicated that no nurse of the sample got a training course in documenting their daily activities.[2]

The outcome of the study was that the majority of the samples with level of bachelor degrees were at Baghdad teaching hospital 14%, while 8% at surgical specialist. But as general, most of the samples 54% were with diploma level significantly at P = 0.001. This finding absolutely have an impact on the nurse performance and quality of care that presented in relation, affecting in particularly documentation accuracy and effectively, because scientifically and good documentation encourages nurses to assess client progress and determine which interventions are effective, and identify changes to plan of care.

As a result of the data analysis, it has been realized that the nurses' response about patient admission format was 100% applicable except in Al-Kadymia hospital was 83.3% and for the sample with diploma degree of education 96%. No statistical association between nurse's applicability and some variables.

This result also agreed with Graven and Hirnle, stated that when a client enters the health care system, a nursing history is completed, nutrition, activity, sleep and coping patterns are assessed and documented, as are pertinent medical history and history relating to the reason for current care. A complete physical assessment is performed and fully documented. This information may be entered on nursing admission history.[6]

Documentation of ventilation flow sheet is of priority practice in monitoring the intubated and ventilated. Patient in I.C.U. to be readily and systematically accessible by the medical team as a results shows in present study

The nurses' response to ventilation flow sheet was 100% applicable by all Baghdad teaching hospital included in the study except 86.7% by Ibn Al-Nafis and 83.3% by surgical specialist, the educational levels of nursing 50% was applicable for intermediate level in nursing. 100% applicable by nurses who involved in I.C.U. training courses, also their was no significant association of nurses response to applicable with hospital distribution and the nurses involvement in I.C.U. training course and significant with level of education.

Monitoring in the I.C.U. because respiratory and circulatory failure occur in critically ill patients, monitoring and recording data of the respiratory and cardiovascular system is undertaken frequently in the I.C.U. evaluation of respiratory gas exchange is routine in critical illness, the "gold standard" remains arterial blood gas include analysis, where pH, partial pressure of oxygen and carbon dioxide and oxygen saturation are measured directly and systematically recorded.[9]

As a result of the data analysis, it has been presented that nurses' response toward neuro-sensory flow sheet was 100% applicable only by Baghdad teaching hospital with highest level of bachelor degree. Besides, the findings showed significantly association between variables and nurses' response with P=0.002, P=0.05, P=0.06.

The documentation of routine nursing procedures such as intake-output fluid charting was 100% applicable by the sample this was the nurse response toward the intake-output fluid flow sheet. Besides, the finding of the table showed no significant association between the nurses' responses and variables hospital P=0.1, level of education and involvement in I.C.U. courses P=0.3.This findings presented that intake and output fluid flow sheets, with vertical or horizontal columns for recording date, time, and assessment data and intervention information, make it easy to track the client's change in condition. Special equipment used in client teaching and I.V therapy are other parts of flow sheet. These forms usually contain legends identifying the approved abbreviations for charting data because they have small space for recording, and must completely filled out any blank space means something was not recognized.[15]

Documentation of medication in time and according policy is so essential in patient care, this factor revealed that the nurses' response toward medication flow sheet 100% applicable and easy to record, while no significant association between hospitals level of education in nursing and raining courses in I.C.U. with applicable of medication flow sheet.

The patient's medication record must include documentation of all the medication administration to the patient (drug, dose, route, time) the nurse administering the drug, and for some medication (e.g. analgesics) the reason the drug was given and its effectiveness.[13]

Critical ill patient in I.C.U. with mechanical ventilation is mostly bed redden for a long period, which causing him a high risk of infection or a bed sores. This tool guide the nurse to assess the patient skin for any lesion before occurrences, and if it is occurred how to assess the wound, the nurses' response to wound assessment flows sheet was 100% applicable at Baghdad teaching hospital included in the study, except Ibn AL-Nafis hospital was 57.1% only, concerning educational level the nurses response to wound assessment flow sheet was 92.5 for diploma and 92.3 for bachelor applicable.

The wound assessment forms is a through and accurate documentation, practice guidelines have been developed for the management of wounds and pressure ulcer. This flow sheet is a separate one which allows adequate space to document wound assessment and patient progress in one place.[8]

Long time ago, weaning the patient from mechanical ventilator was a serious medical task only, now a days the nurse got a lot of scientific knowledge and practice, which enable her to share in making the decision of the readiness of

ventilator patient to wear, this finding revealed by the nurses response 100% applicable by Baghdad hospital and 87.5% by surgical specialist while 20% of nurses can applicable in Al-Yarmouk hospital, 100% of nurses can be applied by bachelor level of education, and it was 100% applicable by same group who involve in training course in I.C.U. The successful wearing involves collaboration among the physician, respiratory therapist, and nurse. Each health care provider must understand the scope and function of other team members in relation to patient weaning to conserve the patient strength.(12)

This study explored that the nurses response to the discharge and education flow sheet according to their distribution in different Baghdad teaching hospitals was 100% applicable and easy to document, while 57.1% of nurses response in Ibn Al-Nafis hospital. (Table 9), also the result showed the need of nurses to have a guide to offer for the discharged patient to follow at home.(10)

The discharge criteria are the behaviors that are desired in order to maintain or achieve maximum functioning after discharge. There are two types of nursing action; teaching the client and family to manage the situation at home, and referring the patient to special agencies for continuing care, so teaching points should be recorded in teaching flow record or a discharge summary record.(4)

Conclusion:

Nurses' response to application of nursing admission assessment form management of health aspect was 98% applicable, application of ventilation flow sheet was 92% applicable with no significance in association with the study variables, application of neuro-sensory flow sheet was 80% applicable significantly in association with the study variables, application of intake-output flow sheet was 100% applicable with no significant association to study variables, application to medication chart was 100% applicable with significantly association with the study variables such as hospital distribute, age and employment in I.C.U, response to wound assessment flow sheet was 94% applicable with significant association with all the study variables except with level of education, response to weaning assessment sheet was 80% applicable with significant association with the study variables such as hospital distribute, level of education and involvement in I.C.U. training course ,response to discharge and education record was 92% applicable with no significant association with all study variables except with hospital distribution significantly associated.

Recommendations:

For the advancement of nursing researcher recommends as following:

Applying the modified documentation system on all Iraqi intensive care unit.

A training course in intensive care unit to enhance the nurses' practice in documentation patient information completely and systematically.

The nursing staff working in intensive care unit must be of bachelor or diploma level of education to apply care provided to critical resuscitated patient completely and systematically.

References:

1. Akhtar, S. and Rubenfeld, G.: Practice variation in respiratory therapy documentation during mechanical ventilator, **Chest**, 2003, 124, 2275-2282.
2. Al Botany, and Gorges, S.: **Construction of a Documentation Tool for Nurses Recording System in Coronary Care Unit**, Baghdad, Iraq. vol. 20, No. 1-2, 2007, PP. 75-78
3. Altman, G.: **Delmar's Fundamentals and Advanced Nursing Skills**, Delmar, Thomson Learning Comp., Colombia, 2004, 2E, P. XV.
4. Carpenito, L.: **Nursing care plan and documentation, nursing diagnosis and collaborative problem**, Lippincott Comp., Philadelphia, 2009, 5th ed., P. 1-54.

5. Daniels, R.: **Nursing Fundamentals Caring and Clinical Decision Making**, Thomson Comp., Australia, 2004, P. 294-314.
6. Graven, R. and Hirnle, C.: **Fundamentals of Nursing-Human and Function**, Lippincott comp., Philadelphia, 7th ed., 2012, PP. 150-245.
7. Hegner, B. and Esther, C.: **Nursing Assessment, A Nursing Process Approach Thomson**, Delmar learning Comp., Australian, 2004, 9th ed. P. 89-108.
8. Iyer, P. and Camp, N.: **Nursing Documentation, A Nursing Process Approach**, Mosby Comp., 1999, 3nd ed., P. 1-234.
9. Kasper, D. and Faucl, A.: **Harrison's Principles of Internal Medicine**, McGraw-Hill Comp., vol. 11, 2006, 16th ed., P. 1581-1600.
10. Berman, A. Frandsen, G. and Snyder, S.: **Kozier and Erb's Fundamentals of Nursing Concepts, Process, and Practice**, Pearson prentice Hall Com., 10th ed, 2018.
11. Perry, A. and Potter, P.: **Clinical nursing skill and techniques,** Elsevier, St. Louis, Missouri., 2014, 8th ed, p. 39-84.
12. Smeltzer, S. and Bare, B.: **Medical Surgical Nursing Text Book**, Lippincott Williams and Wilkins Comp., 2004, 10th ed., P. 600-628.
13. Taylor, C.; Lillis, C.; LeMone, P.; and Lynn, P.: **Fundamentals of Nursing, the Art and Science of Nursing Care**, Lippincott and Wilkins comp. Philadelphia, 6th ed., 2008, PP. 353-385.
14. Vancouver, B.: **Nursing Documentation, Requirements to Nurses Practice, CRNBC**, college of registered nurse of British Columbia, 2003, March, Pub. Med. No. 151.
15. White, L.: **Foundation of Nursing**, Thomson Comp., Australia, 2005, 2nd ed., P. 128 - 416.