RESEARCH ARTICLE

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NURSING DOCUMENTATION IN SELECTED HOSPITALS IN KHARTOUM STATE-SUDAN

Aisha Mohammed Adam Ali[1]
Wala Ali Mustafa Albashir[2]
Abdalbasit Mariod[3]

ABSTRACT

Nurses as a front line of patient care are accountable for maintaining accurate records. In Sudan, the tendency for documentation errors which accompanied by persistent shortage of nursing staff, lack of training and resources necessitate an evaluation of the quality of nursing documentation. To evaluate the quality of nursing documentation at selected hospitals in Khartoum, Sudan. Across sectional descriptive hospital-based study done during January to February 2019 in selected hospitals in Khartoum, Sudan; 237 nurses were interviewed using a structured questionnaire to assess their level of knowledge, training, and availability of documentation format; moreover, quality of nurses records assessed using checklists, data analyzed using SPSS. This study revealed that most of the nurses had good knowledge, did not train in documentation and agree with the availability of documentation format in their hospital with percent (69.00%), (74.7%) and (68.8%) respectively; besides, the quality of their documentation is poor compered to that of developing cuntries due to rudimentary, limited, with bad handwriting nursing records and lack of training, policy-standers- procedures-guidelines.

Keywords: Quality, nursing documentation, teaching hospitals, Sudan.

A R T I C L E I N F O

[1]Faculty of Nursing Sciences, Al-Neelin University, Khartoum, Sudan.
basitmariod58@gmail.com

Orcid Number: https://orcid.org/0000-0003-3237-7948

[2]Faculty of Nursing Sciences, Al-Neelin University, Khartoum, Sudan.

Orcid Number: https://orcid.org/0000-0003-0161-2191

[3]Indigenous Knowledge and Heritage Center, Ghibaish College of Science and Technology, Ghibaish, Sudan.

Orcid Number: https://orcid.org/0000-0002-2498-4273

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1. INTRODUCTION

Nursing documentation is a fundamental part in the character of nursing profession (Karkkaninen. O., 2003), and essential for arrangement, estimate of medical interventions and ongoing patient care; consequently, nurses are responsible for maintaining correct report of that care (Potter. P., 2012), it described as a vital factor in the nursing quality improvement and promotion as well as efficient aspect in nursing practice transparency and accountability (Wang. N., 2011). It was defined by American Nursing Association as communication instrument for exchange patient information in the health care setting inter-disciplinary and with other disciplines, it asserted crucial for the patient's care decisions and safety as it guaranteeing the continuity of care through improving valuable communication, and collaboration among healthcare profisionals (Jefferies. D., 2010) (Wang. N., 2011), more over it considered as synonymous with nursing care itself. It is worth to mention that nurses produce 50% of the care information (Vafaei. S., 2018). Nursing documentation generally preserved to be paper based or electronic (Alkouri. O. A., 2016); basically there are different documentation frameworks and tools including narrative, nursing process, care plans…..etc; even though different clinical setting were found to be practiced documentation differently (Johnson. M., 2010), (Jefferies. D., 2010).

Quality of nursing documentation is that depend on the principles which include, specific, objective, clear, comprehensive, concise, complete, accurate, factual, true, honest, consistent, timely, confidential, legible, permanent and representative of professional observational assessments. Furthermore, it should be a contemporary, including date and time, with nun duplicated information, centered on the patient. On the other hand, reveal the concerns, responses, perception, identify the person who provided or documented the care. Moreover, reflects the nursing process, the real effort of nurses includes education, emotional support, the objective clinical judgment of nurses that describes findings, and reports retrievable information on a permanent base in a nursing-specific manner(Alkouri. O. A., 2016), Quality nursing document should include sufficient patient information, sequential report of measures and procedures with full description of nursing process including signature, date and time. More over it should support diagnosis, justify line and results of treatment (Wang. N., 2011). Factors which responsible of quality nursing documentation comprise competencies, empower confidence, nursing policy/standers/procedures/guidelines, resources, auditing, supervision, and human resources (Ofi. B., 2012). Education is playing an essential role in maintenance and improvement of standard and quality of nursing documentation (Kamil. H., 2018), this is confirmed with many studies which recommend continuous education to ensure adherence to the nursing documentation procedures (Kamil. H., 2018) (Noorkasiani. N., 2015). Knowledge had an observable responsibility in building nursing documents' structure (Chevakasemsook. A, 2006). More over pre and in-service training and experience has a key role in the quality of documentation. Thus, all nurses, in any clinical position and at any levels of service is obliged to be offers ample Knowledge and skills in the procedural essentials of documentation. Despite it was proved that the nature of quality nursing documentation confronted by much uncertainty and lack of knowledge, it was apparent that nursing care documentation is implemented with varying standards and models (Gunningberg. L., 2004). Many studies evedent that nurses are aware of the importance of documentation; however, their performance of documentation is still poor in quality(Vagias. A, 2006) Prideaux(P. A., 2011) consequence to many factors including lack of comprehensive nursing education, organizational support and supervision on documentation (Mutshatshi. T., 2018) (P. A., 2011), (Rhulanci. C., 2016), (Björvell. C., 2003), (Johnson. M., 2010), (Machudo. S., 2015), (Karkkaninen**.** O**.**, 2003)

Policies, standers, procedures, guidelines, and protocols are vital for performance within acceptable standards which prevent mal practice and insure quality. In view of the fact that nursing documentation has official and dependable information, it should be compatible with working standards (Idval. E.), (Urquhart. C., 2009), (Gunningberg. L., 2004). Nursing documentation guidelines used as source of information about how to document nursing car that enhances nursing documentation practice, improve daily use of standardized nursing languages and provide sustained continuing training opportunities for nurses; consequently, every nurse must be familiar with their organizational policies or procedures related to documentation. Many nursing studies reported that nurses who had operational nursing standards in their hospitals had good documentation practice as compared to those without operational nursing standards; (Gugerty. B., 2007), (Tasew.H., 2019); in contrast, African nurses' performance of documentation is still poor in quality due to lack of principles, policies, or procedures commitment. Morover shortage of staff is stated as responsible of poor quality in developing countries (Alkouri. O. A., 2016), (Paans. W, 2010).

Recently the quality nursing documents is stressed as being of the extreme importance in health framework, (Machudo. S., 2015), (Wang. N., 2011), since they are used as basis for evaluating the excellence and suitability of health care provided, official record of patient care, evidence of practice and malpractice, means of professional accountability and liability, in addition to planning and budgeting (Amesa. A, 2017). Nursing researchers are confirmed that profession standard and patient care safety are reversed by the quality of the documentation (Blair. W, 2012), (Jefferies. D., 2010), (M., 2011). The important of the quality of nursing documentation has been addressed by nurses both locally and globally; Since it lead to gaining more information about nursing protocols, clinical procedures and practices generate, management recommendations, which improve both nursing career and documentation, (Blair. W, 2012). Furthermore, it reflects the application of nursing knowledge, skills and judgment (Jefferies. D., 2010); This supports the nurse's contribution to development of professional policies and promotes evidence informed practice which enables nurses to meet standards of practice for registered nurses every day in every client care. Quality of nursing care and nursing process can be steadily evaluated through accurate nursing documentation (Wang. N., 2011). More over evaluation of nurses' documents in patient health records can be supportive in improving the accuracy of nursing documentation (Urquhart. C., 2009). Poor quality nursing documentation is that deficit in totality and comprehensiveness of vital information, (Amesa. A, 2017), including un standardized abbreviations, erroneous use of vocabulary, poor handwriting, and misspellings (Grespan. V, 2009). Failure of the Nurses to document can result in poor patient outcomes and legal responsibility (Jefferies. D., 2010). Documentation has been associated with failure in detecting patients whose therapeutics situations were deteriorated (Amesa. A, 2017), which can place patients, staff and organizations at considerable risk of physical and legal harm. Furthermore it is stated as one of the top five reasons for nurses incurring sanctions or even being removed from the registration, and declared as associated with poor patient outcome even death, which triggering elevation of the health care expenditure (Andrews. A 2015), (Okaisu. E, 2014). In numerous countries the quality of nursing documentation including limited documentation of the nurses work, incomplete crucial related data, mistakes, insufficient documentation of significant aspects of measurement and other related nursing care remains poor. Nevertheless global trend of improper, missed, or poor documentation of nursing care is frightening, which continue to be announced (Chevakasemsook. A, 2006), (Potter. P., 2012), (Jefferies. D., 2010), (Okaisu. E, 2014), many nursing studies evidence that documents are of low quality or far from existing standards and stress on additional concern to the factors

affecting the discrepancy in perform, flaws in documentation quality as well the effects of these on nursing and patient care drawback (Jasemi. M, 2013), (Wang. N., 2011).

In Sudan the tendency to documentation errors likely consequence to huge shortage of nursing staff, which accompanied by lack of training and resources necessitate evaluation of the quality of nursing documentation (WHO., 2014). Due to the limited number of studies about this the subject, the information from this study will be a data base for farther studies which we hope to fill the gaps. In this study we interest in quality it terms of Knowledge, availability of resources (documentation format, policy, standards, procedures and guiltiness), training, quantity and quality of available nursing documents.

2. MATERIALS AND METHODS

Cross sectional hospital base study was conducted during the period of January to February 2019 in two big hospitals in Khartoum state -Sudan, which are main public greatest teaching and referral hospitals in Sudan. The hospitals were selected purposefully to represent the Khartoum state; One of this hospitals located at Khartoum north town, it is the oldest hospital in the town, with 600 bed capacity, employ 322 nursing staff at the time of study with their different categories and type of enrolment in the clinical service provide health care for public with varied groups and with different levels- primary, secondary and tertiary levels; For local patient and patient referred from other towns and states. More over provide training for all types of health professional's with their different level of qualification from different educational institutes and achieve researches covering the flied related to the different specialties. The other selected hospital located at southern of Khartoum town; with the same criteria of the first hospital and it employ 294 nurses with their different categories and type of enrolment in the clinical service and provides health care for an area of high density of population.

The study population was the nursing staff works at selected hospitals with their different categories and qualification works at selected hospitals, employ in permanent or temporal job, and nurses spend national service works at least one year and directly involved in patient care; In addition to and their evedent documentation. The total number of nurses in the two selected hospitals were 619 nurses and the available were 19 document most of them are shift report
The sample size was c alculate by using the equation N: N×P (1-P)/ [{N-1× (d 2÷z2) +P (1-P)]. N is sample size , P =0.5, d = 5% and z =1.96 in confidence level 95%

A total of two hundred and thirty-seven bed side nurses were chosen as a representative sample selected according to their population percent. The percent of nurses from the hospital which represent Khartoum north town public hospitals equal 53.2% of the sample size (126nurses), and the percent nurses from the hospital which represent Khartoum town public hospitals equal 46.8%of the sample size (111nurses); The total sample is 237 nurse.
The Sample selected using multi stage sampling for hospitals, clinical area and participants:
Stage one is hospital selections: Hospital was selected purposefully census because they are main biggest referral public hospital from each locality situated in area of high density of population, provide health service for vast majority of the population in the state and they have all types and levels of health care service so the result can be representative.
Stage two is selections of the clinical area (words and high dependency units, for adult male/femal and pediatric) are selected simple randomly.
Stage three is selection of nurses' sample: Sample was selected by first available participates in each selected clinical area that fulfills the criterion and complete the sample size as

convenience (126 nurses from the first hospital and 111 nurses from the second hospital) according to their proportional representation.
Total coverage is adopted for selection of the available documents because nursing documents were so limited (only 19 decument were available most of them were shift report in nun formal sheets).

Data was collected using two instroments: **Structured questionnaire** which formed in English and translated to Arabic to insure equal understanding. Background characteristics of the respondents were assessed by the questions of the firest Part while knowledge regarding documentation, training of staff, availability of policy/standers/procedures/ protocols/guidelines, and formats of nursing documentation were assessed by the questions of the second part. And **Check list**A which dopted and modified of The Nursing and Midwifery Content Audit Tool (NMCAT) from Walden University used to asse the quality of the available documents (Obioma., 2017)
Data was collected through face to face interview using the Arabic translated questioner which filled during the participants' break time with in 15-20minutes by the researcher and assistant who trained on how to ask and how to fill the questioner. Data was collected in 7 days to meet nurses in different working shifts. Wile available document (nineteen documents represent the different clinical areas) were asssesset using the (NMCAT) by the research teem.
Questioner and check list were revised sevral time by the researchers and coleages fore sutability and copleetness. On the other hand a pioloted study using 10 of nurses and 5 of documents from ahosptal other than the studied hosptals was carried out to teast the data collection tools validity and reliability.
Likert scale was used to evaluate the level of knowledge; Each variable,s question evaluated in five parameters as followed:

Excellent level: referred to score of (80%-100%)
Very good level: referred to score of (70%-79%)
Good level: referred to score of (60%-69%)
Fair level: referred to score of (50%-59%)
Poor level: referred to score of less than 50%

The aggregate data was checked for completeness then coded, entered in a computer and analyzed by statistical packed for social sciences SPSS (version 18.). Person Chi-square was used to find the association between background charcteristics and dependent variable with setting confidanvce interval in 95%.
Ethical Approval obtained from Al Neelien University Committee, ethical clearness from ministry of health, Khartoum, Sudan. Moreover agreement letter from the hospital manneger wre gained, and informed consent were taken from participants. Confidentiality assured by no name disclosure.

3. RESULTS

Two hundred seventy-three nurses in selected hospital in Khartoum were interviewed to assess the quality including the availability of resources, knowledge and practice concerning nursing documentation, more over available documents were investigated; so as clear the picture about the quality of nursing documentation. The results have been explained objectively in four main themes; background characteristics, resources, knowledge, and practicing of documentation process respectively.

The only available nursing documents during the period of the study are 19 documents most of them are nursing report of shift change that founded in nun-formal formats which reflect the poor practice of respondents' nursing documentation.

Table 1. Background characteristics of the nurses in selected hospitals (n=237)

Age group	**Frequency**	**Percentage**
(20-29) yrs.	165	69.6
(30-39) yrs.	56	23.6
(40-49) yrs.	7	3.0
More than50 yrs.	9	3.8
Professional Qualification		
Nurse school certificate	49	20.7
Diploma degree	68	28.7
Bachelor degree	118	49.8
Master degree	2	0.8
Years of working experience		
Less than 3 years.	122	51.5
3 years and more.	115	48.

Table 2. Availability of resources that facilitate nursing documentation in the selected hospitals

	ANSWERS	**Yes**		**No**		**Level**
		No.	**%**	**No.**	**%**	
	Taught documentation how to document clearly **in the university study**	178	75.1	59	24.9	Good
3	Through your hospital employment there are training program/ programs about nursing documentation.	60	25.3	177	74.7	Poor
1	There is clear standers, procedures, guidelines or protocol for nursing documentation in your hospital	95	40.1	142	59.9	Poor
2	Availability of documentation formats in your hospital (vital signs, drug, fluid, GCS (Glasgow coma scale), nursing note and etc. …….).	163	68.8	74	31.2	Good
	Mean percent	49.9				Poor

(80% -100%) ***Excellen****t (70%-79%)* ***very good*** *(60%-69%)* ***good*** *(50%-59%)* ***fair*** *less than 50% (****poor****)(Vagias. A, 2006)*

Table 3. Nurses knowledge regarding essential information of nursing documentation the selected hospital in Khartoum state (*n=237*)

	ANSWERS	Yes		No		Knowledge level
		No.	%	No.	%	
	Purpose of documentation					
1.	For communication among health professional	183	77.2	54	22.8	Excellent
2.	For research and evidence base practice	115	48.5	122	51.5	Poor
3.	Allocation of resource and quality assurance	83	35.0	154	65.0	Poor
4.	Reimbursement and Credentialing	47	19.8	190	80.2	Poor
	Mean percent	45.13				Poor
	Principles and Characteristics of nursing documentation					
1.	You know principles for documentation (tool, frame, characteristic)	227	95.8	10	4.2	Excellent
2.	Is it important to follow documentation principles	231	97.5	6	2.5	Excellent
3.	Proper documentation is important evidence in legal matter.	226	95.4	11	4.6	Excellent
4.	Nursing documentation is important, not optional and integral part from nursing process.	217	91.6	20	8.4	Excellent
5.	Nursing documentation is necessary to improve the quality of nursing care.	230	97.1	7	2.9	Excellent
6.	Nursing documentation is necessary for continuity of nursing care	226	95.4	11	4.6	Excellent
7.	Characteristics of nursing documentation are complete, clear, timely, and chronological	219	92.4	18	7.6	Excellent
	Mean percent	94.9				Excellent
	Data that should be documented					
1.	Patient information about admission, transfer, and discharge.	216	91.1	21	8.9	Excellent
2.	Changes in patient status and nurse's action.	214	90.3	23	9.7	Excellent
3.	Patient education and counseling	195	82.3	42	17.7	Excellent
	Mean percent	87.9				Very good
The overall level of knowledge		75.98				Very good

(80% -100%) ***Excellen****t (70%-79%)* ***very good*** *(60%-69%)* ***good*** *(50%-59%)* ***fair*** *less than 50% (****poor****).(Vagias. A, 2006)*

4. DISCUSSION

Nursing documentation is tremendously critical and vital part of nursing practice or intervention process. Its contribution to the patient's health is unquestionable. Appropriate documentation demonstrates a nurse's knowledge and judgment skills. The importance of proper documentation in nursing cannot be overrated since failure to document can result in poor outcomes for patients and liability issues. Limited studies are available on nursing documentation in developing countries, Sudan is not exception so the current study is unique in several ways and the results can be considered a database toward nursing documentation in Sudan. In this study we interested in quality it terms of knowledge, availability of resources (documentation format, policy/ procedures and guiltiness), training, quantity and quality of available nursing documents.

Most of our respondents are young (age range between 20 and 39 years) with mean age about 29 years, their educational backgrounds are varying, but about half of them are qualified with Bachelor Degree in nursing science (BSc), (Table 1) this finding is differ from the finding of Jasemi et al.(2013) in their study in Tbraz Hospital-Iran in which approximately all of respondent have had B.S in nursing (Jasemi. M, 2013).

Education is one of the top listed contributing factors to guarantee quality nursing reports which are aimed at improving and maintaining the standard of documentation. This is confirmed with many studies which recommend continuous educational to guarantee adherence to the nursing documentation procedure (Kamil. H., 2018). In our study, the majority of participants were taught how to document when they are nursing students (Table 2), consistent to the finding of study done in Indonesia 2005 which stated that nurses have been educated to prepare appropriate nursing records during their graduation, and study took place in Iran and Ethiopia that declared participants were obtained their knowledge about nursing documentation from their nursing schools (Andualem. A, 2019). Furthermore, in-service experience has a key role in the quality of documentation, the clinicians and nursing staff ought to be trained on the importance of proper documentation; but our study participants did not involve in any training program concerning documentation in their hospitals; this is different from that of Andualem et al. (Andualem. A, 2019) and Gunningberg. (Gunningberg. L., 2004). Every health care professional must be familiar with their organizational policies or procedures related to documentation so as to operate within what is acceptable and avoid getting into problems (Association, 2011). Yet most of our respondents are unanimous that there is no any policies, standers, procedures, guidelines, or protocols for nursing documentation in their hospital which underwrote by all nursing managers of the studies hospitals when verbal interviewed in concern to this issue; this is disagree with study done in Sweden and Amhara Ethiopia in which most of nurses reported that the documentation concurred with regulations and guidelines in their hospital (Idval. E.), (Andualem. A, 2019).

Nursing documentation requires a format that allows easy access to relevant information. Although most of respondents of this study agree with the availability of the documentation format (paper biased) in the patient file in their hospitals, they do not use them as cleared by the result of this study (they used nun formal papers for report shift).

Regarding nurses knowledge about documentation (Table 3), the respondents had poor knowledge in some aspects of nursing documentation for example purpose of documentation and they had excellent knowledge in some other aspects for example principles and characteristics of documentation however the finding of the current study represent good over-all level of knowledge for most of the respondent which along with a studies conducted in

Zambia, Iran, and Addis Ababa, (Mulugeta, 2015), (K. A., 2011), (Paans. W, 2010), (Mohajjel. A et al 2012), but lower compared with results of study done in Iran, and in Uganda ((Kizza., 2012). In contrast, the result of this study is better than the study of Ethiopia in which just half of the responded had good knowledge and in Amhara Ethiopia (Andualem. A, 2019). This result may be related to that most of our participants are well qualified since their earning BSc in nursing in addition to they gained background knowledge about documentation during their graduation; more over our clinical teaching of nursing students stress on important of documentation through all levels of graduation as a trend of nursing training in Sudan.

The quality of the documents is a mirror image of the standard of professional practice(s) and an indicator of the safe care provide (Blair. W, 2012). Although most of our respondent agree with the availability of documentation format in their hospitals; all most of them did not use this format and those who used them they did not complete the data; in the current study the available nursing documents in all study settings are so deficient in quantity (just 19 documents in all settings) this is in congruent with an Australian study by Jefferies et al which found limited documents (Jefferies. D., 2010). More over most of the available nursing documents in this study are shift report which are in nun formal sheet, rudimentary, in bad hand writing, lacking for proper reporting and with poor quality; consistent with the result of many studies, (Amesa. A, 2017) (Gunningberg. L., 2004), but in contrast with the results of study of Lee (Lee.T., 2005), whose declare that most of their respondent documentations had moderate quality. This poorness of our respondent nursing documentation in quantity and quality possibly due to lak of policy/standers/procedures/guidelines, training, supervision with auditing and shortage of nursing staff, more over lake of payment and incentive, non-conducive working invironment and poor attention for documentation by nurses (don't consider it as part of professional duties or responsibility).

5. CONCLUSIONS

Depend on the results of this study it concluded that nurses in the selected hospitals in Khartoum had good level of knowledge; but the quality of thier documentation in quantity and quality is poor comparing to that of the developing countries. The poorness of this documentation appers to be due to lack of policy-standers- procedures/guidelines, training, supervision and auditing; more over lack of empowerment due to les payment and non-conducive working surroundings as well as persistent shortage of nursing staff.

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