

# Quality of Nursing Documentation Based on Standard Criteria in Coronary Care Unit

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## ABSTRACT

**Background:** Standard and comprehensive documentation is the first condition of good care of the patient. By documentation, patients' needs in different aspects can be identified and met and the effectiveness of nursing actions may be evaluated. **Aim:** This study aimed to determine the quality of nursing documentation in CCU of the hospitals affiliated to Shahid Beheshti University of Medical Sciences in Tehran, capital city of Iran. **Method:** It is a descriptive study which was carried out in June, July and August of 2017. The research sample was included 98 nurses working in the mentioned ward which had been selected by total counting method. Then, four documents of the last document of each nurse were evaluated using the researcher-made checklist based on documentation standards. The research tool consisted of three parts including demographic information, structure and content of documentation which was validated by the experts in terms of face and content validity. Tool reliability was also done by agreement between the observers with a reliability coefficient of 0.9. Descriptive statistics, independent t-test, ANOVA test and Pearson Correlation coefficient were used in SPSS 20 software. **Results:** The results showed that in the structure domain, 69.1% of documents had very good qualities. 49% of the documents in the content domain had also good qualities. In general, 28.4% had moderate, more than half (59.4%) good and only 12.2% had very good quality. There was a significant relationship between the qualities of nursing documentation with the female sex (P: 0.001), Master's degree (P=0.001), participating in the documentation training courses (P: 0.005) and weekends and holiday (P: 0.003) and also there was a significant reverse correlation with age, work experience and overtime hours (P<0.001) (r: -0.2). **Implications for practice:** According to the results, more of the nursing documents in the structure domain had very good qualities as well as moderate and good qualities in the content domain. There is still a need for planning to improve the quality of nursing documentation in some structure and content standards.

**Keywords:** Nurses, documentation, standard, quality, coronary care unit

## Introduction

Effective Communication is important in healthcare professionals for patient safety and quality care [1]. Gaps in communication can lead to serious adverse events, including medication errors, treatment and diagnostic delays, inappropriate treatment and omission of care [2]. Communication is especially important for nurses, as they have the most direct care time with patients [1]. The two main forms

of communication in nursing are verbal handover reports and written nursing documents. Documentation is any written information about a client that describes the care or services provided to that client [3]. The amount of time and effort spent on documentation is variably reported with ranges from 15%-20% to 25%- 50% [4].

Correct documentation is one of the essential components of nursing care [3]. Comprehensive and standard documentation is the first condition of good care of the patient and the nursing reports are the important tools to determine the nursing competence and evaluate the caring and treatment interventions [5]. Quality nursing care documentation helps convey the information about the care planned, patient observation, decisions taken, intervention administered and patient outcomes [6]. Nursing care documentation is a prerequisite for quality of care [7, 8]. High quality nursing documentation aims to promote standards, consistent and effective communication between caregivers and facilitate continuity and patient safety [9].

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By nursing documentations, patients' needs in different aspects can be identified and met and the effectiveness of nursing actions may be evaluated through the changes in the patient's recovery process<sup>[10]</sup>. Several areas of usefulness of nursing documentation identified: compiling legal evidences of process and outcome of care, supporting the evaluation of the quality, efficiency and effectiveness of patient care, providing evidences for research, finance and ethics and quality assurance purposes, development of nursing education and standards for clinical practice and providing a database for planning future health care<sup>[7]</sup>.

More importantly, nursing documentations play a crucial role in solving legal problems and protecting the legal rights of nurses<sup>[11]</sup>. Despite the many applications of documentation in nursing, research conducted in most countries indicates a poor quality of nursing documentation<sup>[12]</sup>. Also, the research conducted in Iran shows that the comprehensiveness and quality of nursing documentation in Iran are not satisfactory<sup>[13]</sup>. In the study of Dehghani et al., it was determined that 35% and 48% of nurse had incomplete documentation and had not recorded the essential cases, respectively and only 17% of nurses had desired documentations<sup>[5]</sup>.

In the study of Jasemi et al., 100% of nursing documentation and recording the vital signs had moderate quality and 58.1% of nurses had moderate knowledge about documentation<sup>[12]</sup>. In the study of Yousefi Roshan et al., only 60.7% of reports had acceptable quality<sup>[14]</sup>. The quality of nursing documentation in Ghana has been reported lower than the standard levels in the study of Avoca Asamani et al. and their results showed that nurses documented only 54.2% of their cares<sup>[7]</sup>.

Although nursing documents are presented by different associations with different models and standards, but the use of standards in the field of clinical documentations is still remained as a problem in the treatment team<sup>[7]</sup>. In the current situation in Iran, most of the documentation systems are traditional and narrative charting and have no specific structure and format<sup>[15]</sup>. In this case, there is the probability of dispersion of topics, repetitive documentation, loss of information as well as instability between different parts of the documentation and make the retrieving information difficult for the subsequent use<sup>[16]</sup>.

Type of the ward is one of the effective factors on the quality of nursing documentation. In many cases, factors such as type of recording forms specific to each ward, the working conditions and the number of patients are effective on quality of nursing documentation<sup>[12]</sup>. The quality of documentation in CCU is important because of patients with acute conditions, critical situations and using special treatments and high mortality rates<sup>[17]</sup>. On time documentation and report in special wards leads to timely and principled designing and decision-making and reduce the events and cardiac emergencies<sup>[18]</sup>, but studies showed that nursing care services, documentation and reporting processes in CCU are still carried out in a narrative and non-standard method<sup>[17]</sup>.

According to the research conducted by the researchers, the studies in the field of nursing documentation in Coronary Care Unit are very limited in Iran and the studies have often qualitatively reviewed the requirements for documentation in CCU. Also, according to the importance of nursing documentation in caring patient and the presence of defect in the quality of nursing documentation based on the studies as well as the importance of Coronary Care Unit; this study was conducted with the aim of determining the quality of nursing documentation based on the standard criteria in the evaluation

of two structure and content domains of CCU nursing documentation of the selected hospitals affiliated to Shahid Beheshti University of Medical Sciences of Tehran capital city of Iran in June to August 2017.

## Methods

The present study was a cross-sectional descriptive study which was carried out in the CCU of eight educational hospitals affiliated to Shahid Beheshti University of Medical Sciences of Tehran in June to August 2017. Ethical permission was obtained from the ethics committee of Nursing and Midwifery Faculty of Shahid Beheshti University in Tehran (IR.SBMU.PHNM.1395.702). After providing sufficient information about the research goals, providing confidence regarding the confidentiality of information and obtaining the written consent letter from the research units, the research team collected data in CCU wards of the relevant hospitals.

The present study was carried out on all nurses working at CCU of the mentioned hospitals with at least six months of work experience in CCU by total counting method. A total of 126 nurses were present in these wards that 28 nurses were excluded from the study because of working experiences less than 6 months in CCU, leave or being sick at the time of research or unwillingness to complete the demographic information questionnaire. The quality of the nursing documentations of 98 remaining nurses was reviewed.

From each of 98 nurses under the study, four nursing documentations recorded in CCU flow sheet were evaluated with the provided checklist so the qualities of a total of 392 nursing documentation were determined. three of four documentations of each nurse were related to non-holidays and one documentations was related to holidays. Also, nurses who had work shifts, three documentations of non-holidays related to three different shifts (morning, afternoon and night) and nurses who had the fixed shifts, three documentations of non-holidays were related to one fixed shift (morning, afternoon or night). So in bedside of patients, the quality of the last nursing documentation of each nurse was determined and continued until the completion of four intended documents. Research tools included a demographic information questionnaire and a standard checklist of nursing documentation. The demographic information questionnaire was completed by nurses and it had nine questions about "sex, age, education level, type of working shift, overall work experiences, working experiences in CCU, overtime and its average hours and history of participating in the documentation training courses". The checklist made by the research team according to the standard principles of documentation in nursing, resources and textbooks. This checklist had two structure and content domains.

The structure domain has 14 items including "recording the date and time of record and readability" and so on. The content domain has 113 items in 17 parts of "how to admit the patient, state of consciousness, respiratory status, cardiovascular status, skin-motor status, thermal condition, nutritional and digestive status, urination status, status of stool excretion, sleep and behavior status, paraclinical measures, pain status, educational needs, medication, cardiac resuscitation and patient death, patient transfer to the other part and patient discharge". Also, at the beginning of checklist, the shift of related to nursing documentation (morning, afternoon or night), its day (non-

holiday or holiday) and the type of documentation (routine, admission, transfer, death or discharge) were determined.

At the structure domain of nursing documentation, three options of "is done, is not done and doesn't applicable" were considered for each item which have "one point, zero point and no points", respectively. In the content domain of nursing documentation, four options of "complete recorded, incomplete recorded or unclear, lack of record and doesn't applicable" were considered for each item, which have "two, one, zero and no points", respectively. Finally, the item "doesn't applicable" was removed of every checklist and the total score for each nursing documentation was calculated. Then, it divided by the potential maximum score of each nursing documentation, a score between "zero to one" was assigned to each nursing documentation. In the same way, the scores of structure and content domains of each nursing documentation were calculated, separately. Finally, the quality of each nursing documentation was determined as poor (0-0.25), moderate (0.26-0.50), good (0.51-0.75) and very good (0.76-1) in structure and content domains and in general.

To determine the validity of the tool, two methods of face and content validity were used, qualitatively. For this purpose, the tool was given to 10 members of faculty of nursing of Shahid Beheshti University of Medical Sciences and three nurses working at Coronary Care Units of the mentioned hospitals. For face validity, the items were judged in terms of comprehensibility of phrases, the appearance of the tool and considering grammatical order and in order to qualitative validity in terms of being relative. To determine the reliability of the tool, the agreement of observers was used. The tool was given to the second observer who was like the first writer in terms of accuracy, knowledge and awareness and two observers completed the checklist simultaneously for 10 nursing documents in the same research environment. The reliability coefficients were obtained as 0.9, 0.85 and 0.9 for the structure and content domains and the total checklist, respectively. All documents were reviewed by the first author. Descriptive statistics were used for data analysis and the relationship between the demographic variables and the quality of nursing documentation were analyzed by the use of independent t-test and ANOVA and Pearson correlation coefficient in SPSS 20 software.

## Results

74.5% of nurses who participated in the research were women. The mean age of nurses was  $35.65 \pm 7.58$  years. 83.7% had undergraduate and the rest of them had master's degree. The average of working experience in total and the average of working experience in CCU of nurses participated in the research were  $11.59 \pm 7.33$  and  $6.58 \pm 6.56$  years, respectively. 81.6% of nurses had work shifts and the rest of them had fixed shifts. 95.9% of nurses worked overtime monthly which was reported  $70.85 \pm 30.31$  hours. 82.7% of nurses mentioned that participated in training courses in nursing documentation in past.

The results showed very good in the structure domain (69.1%) and only two percent had moderate quality and the rest had good quality. In the content domain of documents, 40.3%, 49% and 10.7% of documentation had moderate, good and very good quality, respectively and in general, 59.4% of nursing documentations had good quality. There was no poor quality in any of the domains.

According to table 1, among the structural items, "recording the name and surname of the patient on the documentation flow sheet, nurse's name and surname at the end of document, writing the nursing documentation by one person and with blue or black pen" had the best frequency in terms of correct documentation. The items "recording the other characteristics of the patients in the flow sheet, closing the end of the documentation and the absence of a blank space at the end, recording the complete date and the relevant shift in the documentation without striking out and using a Polish corrector in the nursing documentation" had a least frequency for the correct documentation.

In 16 parts of content domain of nursing documentation, recording of "how to admit, paraclinic and drug actions", "cardiovascular status, thermal status, nutritional and digestive status, patient transfer to the other ward and patient discharge", "state of consciousness, respiratory status, skin-motor status, urination status, pain status and education needs" and "status of stool excretion and sleep and behavior status" had very good, good, moderate and poor qualities, which showed in table 2. Since the only available nursing documents in the ward were evaluated, there were no documents about death and resuscitation when researcher collected data, so the related items of "cardiac resuscitation and patient death" were deleted for statistical analysis.

Regarding the relationship between demographic variables and the quality of nursing documentation, the findings showed that the quality of documents in female nurses ( $P: 0.001$ ), nurses with Master's degree ( $P < 0.001$ ) and nurses who had the experience of participation in the documentation training courses, was better. Also, the mean score of nursing documentation in holidays ( $P: 0.003$ ) was better than non-holiday shifts.

Pearson correlation test showed that, there was a significant relationship between age, work experience and overtime hours with the quality of documentation ( $P < 0.001$ ), but the correlation coefficient was insignificant and negative ( $r: -0.2$ ) and shows a weak correlation. ANOVA test showed that the quality of nursing documentation in afternoon shifts is better than morning and night shifts ( $P: 0.02$ ), but there was not a significant relationship between the quality of other types of documentation than each other.

## Discussion

The present study was conducted with the aim of determining the quality of nursing documentation based on standard criteria in CCUs of eight selected hospitals affiliated to Shahid Beheshti University of Medical Sciences in Tehran from June to August of 2017. A total of 392 nursing documents were reviewed and the research findings were analyzed based on the objectives. The results showed very good in the structure domain (69.1%) and only 2 percent had moderate quality and the rest had good quality. In the content domain of documents, 40.3%, 49% and 10.7% of documentation had moderate, good and very good quality, respectively and in general, 59.4% of nursing documentations had good quality. There was no poor quality in any of the domains.

In the study of Azadi<sup>[19]</sup>, the qualities of 0%, 21.3% and 78.7% of nursing records in ICU were poor, moderate and good in structure domain, respectively and 8%, 91.5% and 0.5% of qualities in content domain were poor, moderate and good, respectively which is consistent with the present research in

structure and content domain that it can be due to similar method of research and being close in terms of critical patients in Intensive Care Unit (ICU)s as well. Also, in the study of Yousefi Roshan et al.<sup>[14]</sup>, 50.7%, 10.26% and 39.04% of nursing documents in Neonatal Intensive Care Unit (NICU) were acceptable, fairly acceptable and non-acceptable, respectively which is consistent with the present study. According to the research results, the quality of nursing documentation was good in most cases. The results of Dehghani et al. study<sup>[5]</sup> also showed that the quality of documentation in the intensive units such as NICU, ICU and CCU is better than the other wards. It seems that the presence of critical patients and the sensitivity of treatment in these wards, lower number of patients, the difference of documentation and different structures of documentation forms are the factors of more importance and better quality of nursing records in the intensive care wards.

Among the structural items, "recording the name and surname of the patient on the documentation flow sheet, nurse's name and surname at the end of documentation, writing the nursing documentation by one person and with blue or black pen, having the nurse's signature and time of recording" were the best items in terms of complete recording and the items "recording the other characteristics of the patients in the documentation flow sheet, closing the end of the documentation and the absence of a blank space at the end, recording the complete date and the relevant shift in the documentation without striking out and using a polish corrector in the nursing documentation" were the least items for the complete documentation.

In Lindo et al. study<sup>[20]</sup> in Ghana, recording the time of documentation had been observed in 85.7% of the documents and don't use of polish corrector had been observed in only 53.1% of nursing documentation and there were striking out and using a polish corrector on the remained documentation and which is perfectly consistent with the present study. Also, in Lindo et al. study<sup>[20]</sup> recording the date of nursing documentation and having the nurse's signature had been observed in 95.5% and only 42.9%, respectively but they had been observed in present study 51.8% and 89.8% of cases, respectively; which are opposite of each other which can be due to the difference in the rules and usual habits among the nurses in both countries.

Among the content items, "drug actions, paraclinic actions and recording the relevant cases of admission and discharge" had the most scores, whereas the items related to "status of urination and stool excretion, skin-motor status, sleep and behavior status and education needs" had the least scores. In the study of Mohamad Ghasabi and Masoud Alavi<sup>[21]</sup> in Kashan, the best frequency in the content domain was related to drug and paraclinic actions. In the study of Aazadi<sup>[19]</sup>, the educational needs were weak items in content domain, like the present study and the status of absorption and excretion was desirable items of content domain; while these recording was weak items in content domain in the present study. It seems that this difference is due to the greater emphasis on controlling of intake and output in the ICUs because of the presence of more critical patients and in most cases, there is a physician's order for controlling of intake and output in the ICUs which is not usually the case in CCUs.

Other findings showed a direct relationship between the female sex, higher educational level and the history of participating in the documentation training courses with the quality of nursing documentation. These finding are perfectly consistent with the

study of Jasemi et al.<sup>[12]</sup> it can be due to lower work hours and higher accuracy and sensitivity in female sex. Also, nurses who have more educational level and the history of participating in the documentation training courses have better knowledge and performance about documentation.

Also, the study results showed an indirect but weak correlation between age, working experiences and overtime hours with the quality of nursing documentation. There was a significant relationship between the working experiences and age with the quality of documentation in the study of Jasemi et al.<sup>[12]</sup>. So that, the quality of nursing documentation was reduced by increasing age and years of working experiences. However, the quality of nursing documentation increased by increasing age and working experiences in the study of Dehghan et al.<sup>[13]</sup> and it can be due to increased clinical experiences, legal cases and increased accuracy. But, no significant relationship was found between the quality of documentation and the variables of age, type of shift, sex, working experience and type of responsibility in the study of Hemmati Maslak Pak et al.<sup>[22]</sup>. Decreasing the quality of nursing documentation by increasing age, experience and overtime hours can be due to the effect of increasing age and time on reducing accuracy, increasing fatigue, decreasing motivation and moving away from the education courses.

In addition, the study showed that the documents quality is better in holidays and afternoon shifts than non-holiday shifts and morning and night shifts. No study was found to confirm or deny the difference between holidays and non-holiday shifts, but the quality of nursing records in night shifts was better than morning and afternoon shifts in the study of Mohamad Ghasabi and Masoud Alavi<sup>[21]</sup>. It seems it may be because of the lack of stressors such as head nurses, supervisor and authorities, fewer follow-ups of the patient, nonappearance of medical and nursing students and being calm of holidays and afternoon shifts, but because of disruption in sleeping hours and resting time of the nurse in night shifts, his/her accuracy and performance were reduced.

## Implications for practice

The obtained results indicate the very good quality of most nursing documentation in the structure domain, good quality in content domain and overall good quality in the nursing records in CCU. In addition, female sex, lower working experiences and lower age, higher education level, afternoon shift and holidays can associated with better quality of nursing documents.

Several factors such as lack of enough time for documentation of the implemented actions, the priority of care to documentation, the existence of additional forms and documentation, disproportionate number of nurses to patients, lack of incentive systems, job dissatisfaction and ignorance of correct documentation principles and legal consequences in different studies have been introduced as the barriers of correct recording. Therefore, attempts to reduce or remove the mentioned cases by nurses or nursing director can overcome deficiencies and improve the process of documentation not only in CCUs but also in all wards.

The effective environmental factors on the nursing documentation such as working pressure, time deficiency, fatigue, personal problems and inappropriate work climate which can reduce the records quality despite the nurse's knowledge were not investigated in this study. In addition, although the researcher evaluated the nursing documentation after orientation with the patients and on the beside of patients



in order to reduce the documented false cases, but there is still the possibility that some cases have been neglected or the nurse has recorded some cases without implementation.

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## Conflicts of Interest

The authors declare no conflicts of interest.

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