Journal of Health Sciences

RESEARCH ARTICLE Open Access

Evaluation of nursing documentation: The experience of nurses from the primary and secondary/tertiary health care

Šeila Cilović-Lagarija[1]*, Nino Hasanica[2,3], Sanela Tukulija[1], Suada Branković[4], Jasmina Mahmutović[4], Dragana Galić[5], Kristina Perić[6], Selma Čajdrić[7], Senada Mujačić[8], Salih Slijepčević[8], Ekrem Mrakić[9], Elvedin Dervišević[10]

[1]Institute of Public Health of Federation of Bosnia and Herzegovina, Bosnia and Herzegovina, [2]Department of School Hygiene, Institute of Health and Food Safety of Zenica, Institute of Public Health, Bosnia and Herzegovina, [3]Department of Healthcare, School of Medicine, University in Zenica, Bosnia and Herzegovina, [4]Faculty of Health Sciences, University of Sarajevo, Bosnia and Herzegovina, [5]Ministry of Health of Federation of Bosnia and Herzegovina, Bosnia and Herzegovina, [6]Healthcare Centre Mostar, Bosnia and Herzegovina, [7]Healthcare Centre Zenica, Bosnia and Herzegovina, [8]University Clinical Centre Tuzla, Bosnia and Herzegovina, [9]General Hospital Travnik, Bosnia and Herzegovina, [10]General Hospital Prim. dr.Abdulah Nakaš, Sarajevo, Bosnia and Herzegovina

ABSTRACT

Introduction: Aim of the study is to piloting nursing documentation to obtain comments based on the experience of nurses/medical technicians from the primary, secondary, and tertiary health care about the documentation before it is published and starts being used.

Methods: A questionnaire was designed in the electronic form to be used for the evaluation and suggestions by nurses/medical technicians on the piloted form and content of nursing documentation for all levels of health care. A piloting sample was prepared to make 10% of nurses/medical technicians from health care institutions from the territory of the Federation of Bosnia and Herzegovina.

Results: A total of 94.3% of examinees at the primary health care level and only 17.2% of the examinees in the secondary and tertiary health care fill out nursing documentation both manually and electronically. All examinees at all levels of health care understand the purpose and importance of nursing documentation. A total of 27.7% of the examinees at the primary and 40.9% of the examinees at the secondary and tertiary level of health care pointed out that filling out nursing documentation was too time-consuming.

Conclusion: A total of 51.2% of the examinees at the primary and 64.2% at the secondary and tertiary level of health care agreed that submitted nursing documentation was adequate for use. It is suggested that after the adoption of nursing documentation at all levels of health care, piloting of its use should be conducted to evaluate the quality and quantity of all nursing documentation.

Keywords: Nursing documentation; quality of health care; health information system; health care

*Corresponding author: Šeila Cilović-Lagarija, Institute of Public Health ofFederation of Bosnia and Herzegovina, Bosnia and Herzegovina. Phone: +387-33-564-625. E-mail: seila.cilovic@gmail.com

Submitted: 27 September 2020/Accepted: 26 November 2020

DOI: https://doi.org/10.17532/jhsci.2020.930

UNIVERSITY OF SARAJEVO
FACULTY OF HEALTH STUDIES

INTRODUCTION

In addition to providing care to around 50 patients, nurses in hospitals in the United States in 1887 were tasked with taking notes and sharpening their pencils every day, while they could

decide themselves about the length of their quill pens (1,2).

In 1955, Lesnik and Andersen defined documenting and reporting about the efficacy of patients' care as one of the important roles of nurses (3).

According to recommendations of the World Health Organization from 1985, one of the roles of nurses at the level of primary health care is establishing needs, planning, and implementation as well as evaluation and documenting of health care (1,2).

Skills and authority of nurses with higher education, *inter alia,* include making and keeping records related to health care and their responsibility for advancing health care and organization of the health care system (3).

In their everyday work, nurses, just like other medical professionals, use various forms of expression, from layman's terms while speaking with a patient and his/her family to highly expert terminology while talking to colleagues or writing nursing documentation (4,5).

One of the criteria of the profession is the very existence of specific terminology used only by members of that profession (e.g., IT, technical, medical, nursing terminology). Based on nursing terminology, it is possible to define nursing tasks and responsibilities more clearly and estimate both the quantity and quality of the performed work (6,7).

Nursing terminology includes all stages of health care: Assessment, planning, interventions, and evaluation. This terminology began its development in the 70s' of the 20th century and it is aimed at the following: Description of the nursing practice, making communication among nurses easier, professional development and education in the field of healthcare, enabling comparison of health care outcomes, simplifying record-taking in healthcare, and development of nursing as a profession (8,9).

There are classifications of the nursing practice for all parts of health care (North American Nursing Diagnosis Association [NANDA], Nursing Interventions Classification [NIC], Nursing Outcomes Classification [NOC], International Classification for Nursing Practice [ICNP], and Nursing Minimum Data Set [NMDS]) and specific classifications that are related to particular nursing activities, for example, home health care (Georgetown Home Health Care Classification – HHCC) (10,11).

NANDA is a professional nursing organization that published the first Classification of Nursing Diagnoses. The classification from 1960 comprised 21 problems, while the latest revised classification from 2003 to 2004 includes 167 nursing diagnoses. The classification contains a name, definition of each diagnosis, defining features (symptoms and signs that are characteristic of that particular diagnosis) as well as etiological and risk factors (12,13).

The NIC was published in 1992 and the fourth revised issue includes 514 nursing interventions. An intervention is every activity based on assessment and knowledge aimed at meeting the goals of health care. The Classification of Nursing Interventions is based on research and scientific evidence (14,15).

The NOC was developed in 1996 and the latest version includes 330 outcomes. It was developed to evaluate the effects of nursing interventions. Standardized outcomes of health care enable continuous monitoring of the patient's condition. An outcome of health care is a measurable condition, behavior, or experience of a patient, family, or community, which can be influenced by nursing interventions (16,17).

The ICNP is a classification of phenomena, procedures, validation of results of health care, and its first version was published in 1996. The ICNP describes health care for an individual, family, or community, it enables comparison of data in different clinical, age or sex populations, environments, geographical areas, times, and encourages nursing research and gives data for the nursing practice (18).

The NMDS is a classification enabling the collection of standardized important elements of nursing practice during the process of health care (13).

METHODS

Within the Project of Strengthening Nursing in Bosnia and Herzegovina (BiH) ProSes, a proposal was made for basic nursing documentation for all levels of health protection in the Federation of BiH (FBiH). In that regard, the FBiH Ministry of Health appointed a working group for the development of

nursing documentation for all levels of the health care system. Having in mind that the working group agreed on a final set of nursing documentation at the primary, secondary and tertiary level of the health care system, it was necessary to pilot the nursing documentation to obtain comments from the field for all the forms before they were published and used.

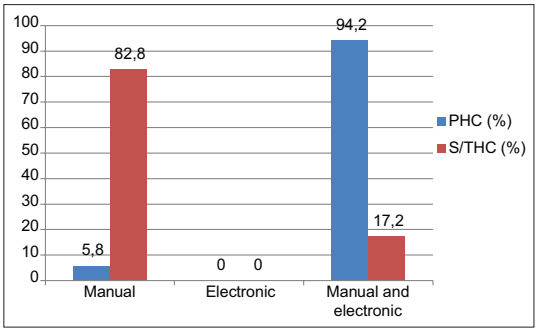
The piloted nursing documentation at the primary health care level is as follows: A form of health care of a nurse/medical technician, plan of health care for chronic patients, a record of performed interventions of nurses/medical technicians, a protocol for making patients' appointments, and a book of interventions of nurses/medical technicians. The piloted nursing documentation at the secondary and tertiary level of health care is as follows: Anamnesis of a nurse/medical technician, questionnaire for risk assessment for falling, health care plan, a record of the implementation of a health care plan, form for reporting decubitus, form for monitoring decubitus, the nursing record of intensive care, an overview of therapy application, discharge letter of a nurse/medical technician, and notification on dislocation/transfer of a patient. After the collection of email addresses of nurses/medical technicians who were supposed to comment on the documentation, an electronic questionnaire/database was developed to have all examinees review the nursing documentation and provide their comments. An electronic questionnaire was designed to evaluate and make suggestions about the piloted form and content of the nursing documentation for all levels of health protection. In this way, all suggestions of nurses/medical technicians who had completed the aforementioned documentation during the pilot project were taken into account.

Based on official data on nurses/medical technicians of the FBiH Institute of Public Health (19), a piloting sample was created, making 10% of nurses/medical technicians from health care institutions. The distribution of examinees per selected healthcare institutions meant that the sample of 69 examinees (Healthcare Centre Mostar – 32 and Healthcare Centre Zenica – 37) was created at the primary health care level, while at the secondary and tertiary health care level, 134 examinees were included (General Hospital Prim.dr.Abdulah Nakaš Sarajevo – 39 examinees, University Clinical Centre Tuzla – 73 examinees, and Travnik Hospital – 22 examinees). The total sample included 203 examinees.

RESULTS

At the primary health care level, a total of 69 nurses/medical technicians reviewed the nursing documentation. Of this number, 64 (92.8%) were females and 5 (7.2%) males. The highest percentage of the examinees at the primary health care level was those in the age group 40-49 years, 21 (30.4%). The nursing documentation was reviewed by 48 (69.6%) nurses/medical technicians with secondary school education. A total of 18 (26.1%) examinees had 20-30 years of professional experience, and they were considered to be nurses/medical technicians with long professional experience (Table 1).

Of the total number of the examinees at the primary health care level, 65 (94.3%) examinees filled out the nursing documentation both manually and electronically, which is an indicator of a high workload of nurses/medical technicians, having in mind that their primary role is to care for patients (Table 2 and Graph 1). All 69 (100%) examinees answered that they understood the purpose and importance of completed nursing documentation, and 67 (97.1%) believed that keeping nursing documentation contributed to improved quality of health services. Half of the examinees emphasized that the greatest advantage of the nursing documentation was improved quality of health care and health protection, while 24 (34.1%) examinees believed that it was the safety of nurses/medical technicians in potential court proceedings (Table 3 and Graph 2). A duty of completing nursing documentation both in writing and



GRAPH 1. A manner of completing nursing documentation.

TABLE 1. Basic characteristics of examinees per levels of health care

Age, N (%)			Qualifications, N (%)			Years of professional experience, N (%)		
Age	PHC	S/THC	Education	PHC	S/THC	Years	PHC	S/THC
19-29	13 (18.8)	2 (1.5)	SS	48 (69.6)	43 (32.1)	<5	13 (18.8)	3 (2.2)
30-39	17 (24.6)	40 (29.9)	CD	3 (4.3)	6 (4.5)	5-10	13 (18.8)	7 (5.2)
40-49	21 (30.4)	68 (50.7)	VSS	9 (13)	58 (43.3)	11-20	13 (18.8)	52 (38.8)
50-65	18 (26.1)	23 (17.2)	1. cycle	6 (8.7)	20 (14.9)	21-30	18 (26.1)	55 (41)
>65	0	1 (0.7)	2. cycle	3 (4.3)	7 (5.2)	>30	12 (17.4)	17 (12.7)
Total	69 (100)	134 (100)	Total	69 (100)	134 (100)	Total	69 (100)	134 (100)

PHC: Primary health care, S/THC: Secondary/tertiary healthcare; CD: College degree; HE: Higher education; 1st and 2nd cycle of the Bologna education system

TABLE 2. A manner of completing nursing documentation

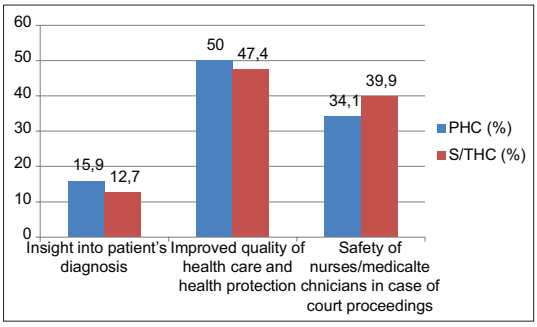
	PHC, N (%)	S/THC, N (%)
Manual	4 (5.8)	111 (82.8)
Electronic	0	0
Manual and electronic	65 (94.2)	23 (17.2)
Total	69 (100)	134 (100)

PHC: Primary health care, S/THC: Secondary/tertiary healthcare

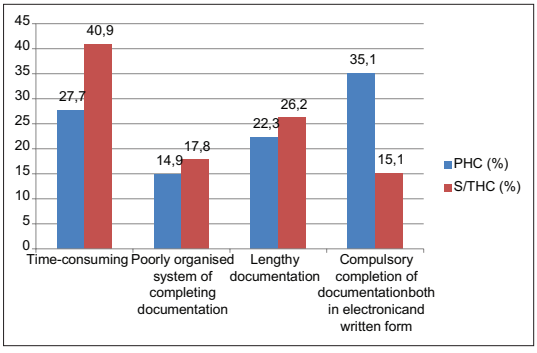
TABLE 3. Advantages of submitted nursing documentation

	PHC, N (%)	S/THC, N (%)
Insight into patient's diagnosis	11 (15.9)	17 (12.7)
Improved quality of health care and health protection	34 (50)	63 (47.4)
Safety of nurses/medical technicians in case of court proceedings	24 (34.1)	54 (39.9)
Total	69 (100)	134 (100)

PHC: Primary health care, S/THC: Secondary/tertiary healthcare



GRAPH 2. Advantages of submitted nursing documentation.



GRAPH 3. Disadvantages of submitted nursing documentation.

in the electronic form was found to be the greatest disadvantage by 24 (35.2%) examinees, while 19 (27.7%) examinees pointed out that the completion of nursing documentation was too time-consuming (Table 4 and Graph 3). A total of 31 (44.9%) examinees at the primary health care level agreed that the submitted nursing documentation was adequate for use, while 5 (7.2%) examinees stated that the submitted nursing documentation was fully adequate for use (Table 5 and Graph 4).

At the secondary and tertiary levels of health protection, a total of 134 nurses/medical technicians reviewed the submitted nursing documentation. Of the total number of examinees, 24 (17.9%) were male and 110 (82.1%) were female. Of the total number of examinees, 68 (50.7%) belonged to the age group 40-49 years. The largest number of examinees, 58 (43.3%), had a university degree. A total of 55 (41.1%) examinees had 20-30 years of professional experience, while the highest percentage at the primary health care level was nurses with secondary school education (Table 1).

A total of 111 (82.8%) examinees at the secondary and tertiary level of health protection stated that they had been filling out the nursing documentation manually, while 23 (17.2%) stated that they

TABLE 4. Disadvantages of submitted nursing documentation

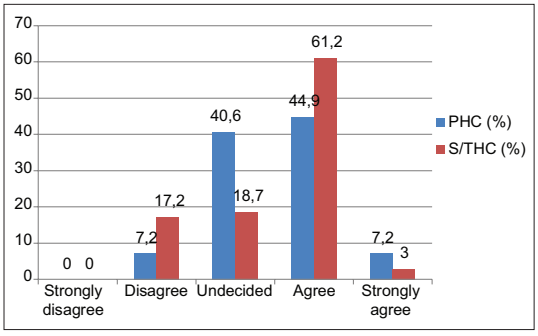
	PHC, N (%)	S/THC, N (%)
Time consuming	19 (27.7)	55 (40.9)
A poorly organized system of completing documentation	10 (14.9)	24 (17.8)
Lengthy documentation	15 (22.3)	35 (26.2)
Compulsory completion of documentation both in electronic and written form	25 (35.1)	20 (15.1)
Total	69 (100)	134 (100)

PHC: Primary health care, S/THC: Secondary/tertiary healthcare

TABLE 5. Examinees' opinion on submitted nursing documentation

	PHC, N (%)	S/THC, N (%)
Strongly disagree	0	0
Disagree	5 (7.2)	23 (17.2)
Undecided	28 (40.6)	25 (18.7)
Agree	31 (44.9)	82 (61.2)
Strongly agree	5 (7.2)	4 (3)
Total	69 (100)	134 (100)

PHC: Primary health care, S/THC: Secondary/tertiary healthcare



GRAPH 4. Examinees' opinion on submitted nursing documentation.

had been filling out the documentation both manually and electronically (Table 2 and Graph 1). All 134 (100%) examinees answered that they understood the purpose and importance of the completed nursing documentation. Advancing the quality of health care and health protection was considered to be the greatest advantage of the submitted nursing documentation by 64 (47.4%) examinees, while 54 (39.9%) stated that it was the safety of nurses/medical technicians in case of court proceedings (Table 3 and Graph 2). Fifty-five (40.9%) examinees pointed out that the nursing documentation was time-consuming, which was one of its greatest disadvantages, while 35 (26.2%) said that the scope/content of the documentation was too lengthy (Table 4 and Graph 3). A total of 82 (61.2%) examinees at the secondary and tertiary health care level agreed that the submitted nursing documentation was adequate for use, while 4 (3%) examinees stated that the submitted nursing documentation was fully adequate for use (Table 5 and Graph 4).

DISCUSSION

Jefferies et al. synthesized all available relevant knowledge about nursing documentation and presented the main aspects necessary to ensure the quality of nursing documentation. Available literature from the period 1982 to 2008 was searched (20).

In her research of 1994, Ehnfors analyzed nursing documentation and its comprehensiveness while noting down patients' problems in 140 patients from 7 hospitals. The aim was to identify which of the patients' problems had been described and noted in medical records based on different models, so-called well-being, integrity, prevention and security (VIPS) model, and NANDA classification of nursing diagnoses. Results showed that 410 nursing diagnosis or problems were recorded. For less than half of the nursing diagnoses, there was information on nursing interventions or outcomes of health care stated in medical records (21).

The development of a universal concept and the manner of implementing nursing practice is crucial for the development and use of information systems in nursing and health care. Sweden is using a so-called VIPS model developed to support the systematic and uniform character of nursing documentation in patients' medical records. This model is widely used in Sweden in various aspects of health care and nursing practice. Research results of Ehrenberg et al. in 1997 showed generally good reliability and easy validation of keywords during the use of nursing documentation with the VIPS model (22).

In 2013, Nilsson and Willman conducted a comparative study focused on the evaluation of the use of nursing documentation before and after intervention in terms of training about the use of nursing

documentation. The training included nurses in Helsingborg Hospital. Intervention – training consisted of supervision during work, group sessions, lectures, and working visits over 2 years. Reviewed data included 515 nursing diagnoses and problems from 52 wards. Results showed a statistically significant difference before the raining of nurses in four wards in terms of quality and scope of the information collected during the health care process, and the difference disappeared after the training (23).

A 2-month randomized controlled study based on 60 patients was conducted at the Psychiatry Ward of the University Medical Centre of Heidelberg in Germany. Ammenwerth et al. examined the impact of electronic nursing documentation concerning time spent to complete the documentation, quality of the documentation, and acceptance of nurses to keep the documentation. Results showed that less time was needed to document the planning of health care if the records were kept electronically; however, to document implemented nursing procedures and produce reports and evaluations less time was needed without the use of computers. Acceptance to keep records as a task increased during the study. The examinees reported a higher degree of cooperation and understanding between nurses and doctors if electronic nursing records were kept (24).

A study by Cheevakasemsook et al. was aimed at examining the complexity of nursing documentation and other related factors. The existing health systems require the nursing documentation to provide continuity of health care, evidence on the process of health care from the legal perspective, and evaluation of the quality of health care. Yet, the nursing documentation often failed to meet those requirements due to its complexity in terms of inconsistent record-keeping, incomplete data, and lack of uniform vocabulary as well as lack of staff, competencies, and motivation (25).

The complexity of the nursing documentation may create huge challenges in electronic record-keeping while documenting the essence of the relationship between a nurse and a patient. To make a nurse satisfied with the content and course of keeping electronic nursing documentation, it is necessary to include the aspect of the non-clinical relationship of the health care process together with clinical values defined in advance. Inclusion of the end-user in a meaningful manner supports a positive outcome of introducing nursing documentation and a positive outcome of health care in general (26).

Patronage nurses have multiple goals while visiting a patient. An electronic medical record supports some of those goals, including high-quality documentation; however, nurses sometimes cannot complete the documentation at the place of providing health care – at patient's home. Yang et al. made 10 observations to estimate the impact of the importance of health care goals on keeping records in the nursing documentation (27).

The primary goal of a study by Guo et al. was to examine the effect of nurses' experience on the manner of record-keeping in the electronic nursing documentation in an intensive care unit. The duration of entering data in the nursing documentation was measured. It turned out that more experienced nurses often added new data to the nursing documentation, which resulted in better clinical findings (28).

A study by Aleksić et al. aimed to investigate how well informed was nurses/medical technicians with secondary education and a college degree at ten wards of the General Hospital of Dubrovnik, Croatia, about the everyday use of nursing documentation. It was concluded that to successfully keep nursing documentation, additional training of nurses/medical technicians and patients is needed (29).

CONCLUSION

In this study, a total of 52.1% of examinees at the primary and 64.2% at the secondary and tertiary health care level agreed that the submitted nursing documentation was adequate for use. The highest number of comments in this study was related to the need for digitalization of nursing documentation by introducing electronic documentation and completion of nursing documentation only in an electronic form. The representative sample obtained the opinion of nurses/medical technicians at the primary, secondary, and tertiary levels of health care about nursing documentation. The working group agreed that some comments and suggestions should be incorporated into the content of nursing documentation. In this way, the pilot study served its

purpose and a proposal was made for a final version of the content of nursing documentation along with a rulebook. It is suggested that after the adoption of nursing documentation at all levels of health protection, a pilot study should be conducted on its use to assess the quality and quantity of the entire nursing documentation.

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