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Abstract

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Keywords

care, aged, documentation, nursing, paper, versus, electronic, quality, homes, measurements, developing, australian

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Developing Measurements of Quality of Electronic versus Paper-based Nursing Documentation in Australian Aged Care Homes

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Abstract
Objective: To discuss the experience of developing approaches to measuring the quality of nursing documentation in residential aged care homes.
Methods: Three information sources were reviewed to explore approaches in auditing nursing documentation: the current literature, relevant Australian legislative and professional requirements, and organizational nursing documentation practice.
Results: Approaches suggested by the literature were mainly focused on three dimensions of nursing documentation: structure and format, process and content. The detailed standards of nursing documentation have been identified by reviewing the relevant Australian legislative and professional requirements and recommendations, and organizational nursing documentation practice. A nursing documentation audit instrument has been constructed, using relevant quality criteria derived from the three information sources. Face validation and content validation of the instrument were conducted. The validity of the instrument was established, with a high level of consensus among aged care staff. The instrument is being tested to verify its applicability and reliability through a pilot study.
Conclusion: A systematic document analysis on published studies, local legislative and professional requirements and aged care organizational nursing documentation practice has been conducted to develop a validated nursing documentation audit instrument. It is anticipated that the instrument will not only serve the purpose of collecting data for a research project, but also be useful as an auditing tool for nursing documentation in Australian residential aged care facilities.

Keywords: Electronic Nursing Documentation, Paper-based Nursing Documentation, Quality, Nursing Documentation Audit Instrument, Aged Care

1. Introduction

Nursing documentation is the record of nursing care [1]. It attempts to show what happens in the nursing process and what clinical decision making is based on [2, 3]. The primary function of nursing documentation is as a communication tool to facilitate individuality and continuity of care and safety of patients [2, 4]. Nursing documentation also serves other purposes such as quality assurance, legal instrument, health planning and research [5, 6].

In modern health care practice, quality of care is related to caregivers' access to high quality information about patients. Nursing documentation is an important source of information to support nurses in delivering care. Quality nursing documentation promotes structured and sufficient communication between health care workers so that they are better informed of patients' conditions and the care

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planned and provided to them. It ensures the information contained in nursing records can be used as valid evidence for other purposes [3, 6, 7].

However, nursing records have often been of poor quality. Studies have shown that some nursing records did not fully document the nursing care provided to a patient [4, 7-10]. Data recorded in the nursing records was not presented in a concise and clear form [11]. Traditional paper-based documentation has been widely recognized as no longer meeting the requirements of modern health care organizations. The manual documentation process is often repetitive and data may not be easy to retrieve or update [12 -14]. Paper-based records are often incomplete, illegible, lacking information about individualized patient care, containing useless information and missing the signatures of care staff [1, 11, 15].

Information technology has been increasingly used by health care organisations to support care delivery. It has been recognised that electronic documentation systems facilitate better data capture through use of structured date entry and formalized nursing language [16]. The main benefits of electronic documentation systems are providing health professionals with increased access to more complete, clear, accurate, legible and up-to-date patient information [7, 17].

Recently, electronic nursing documentation systems have been implemented across a number of aged care organizations in Australia. In order to compare the quality of electronic versus paper-based nursing documentation, a nursing documentation audit instrument has to be developed. To our knowledge, the nursing documentation audit instruments used in the previous studies were mostly purpose-designed and localized. There is no instrument that is readily applicable to the health care setting of residential aged care facilities in Australia. In this paper we describe the process of developing a nursing documentation audit instrument that is applicable to residential aged care in Australia. The instrument should have the capacity to measure the quality of both paper-based and electronic nursing documentation in residential aged care facilities in Australia.

2. Methods

Three information sources were reviewed to identify nursing documentation approaches and to derive quality criteria for the nursing documentation audit instrument.

- A systematic literature review on nursing documentation audit studies: seven electronic databases including CINAHL, the Cochrane Library, Health Reference Center, ProQuest-Nursing, Wiley InterScience, Medline 1996- and Nursing Resource Centre were searched. The keywords used included "*nursing documentation", "nursing records", "audit", "evaluation" and "quality"*. As a result, sixty-nine publications about nursing documentation audit were obtained and their auditing approaches and instruments were assessed.
- Relevant Australian government and nursing professional requirements and recommendations: Aged Care Act, Accreditation Standards, Documentation and Accountability Manual, and several nursing documentation guidelines recommended by South Australian, ACT and Tasmanian nursing boards nursing boards were reviewed.
- Organizational documentation practice: a review of several aged care organizations' nursing documentation policies and protocols and the documentation audit instruments was conducted.

Relevant information from these three sources was used in the development of the nursing documentation audit instrument. The validity of the instrument was then tested in consultation with staff at two aged care facilities.

3. Results

3.1. Summary of nursing documentation audit approaches in the literature

Different nursing documentation audit approaches and quality criteria have been identified in the literature. The approaches can be grouped into three categories: 1) documentation structure and format, 2) documentation process and 3) documentation content. The three categories reflect the multi-dimensional nature of nursing documentation.

Nursing documentation structure and format

This approach focuses on constructive and material feature of nursing documentation such as quantity, appearance, identification and language. The detailed criteria include completeness, legibility, officially approved abbreviations, proper correction of error, factual and objective language and documentation in an appropriate section [10, 15, 18 - 21]. Quality documentation structure and format enables clear and concise presentation of information.

Nursing documentation process

This approach deals with the procedure by which residents' data is documented. The assessment criteria include provision of carer's signature, designation, date, regularity, timeliness and accordance with real practice [18, 21 -25]. Availability of a quality documentation process enables valid and reliable data to be documented in the nursing records.

Nursing documentation content

This approach focuses on the message of data about nursing care. The quality of nursing documentation content has two aspects: comprehensiveness and appropriateness. The comprehensiveness of documentation refers to the presence of different types of documents such as nursing history and discharge summary, and presence of the five steps of the nursing process in the records [8, 10, 19, 26, 27]. The appropriateness of documentation refers to

data content presented at a specific level in each step of the nursing process. Appropriateness is usually related to a focused care issue such as pressure ulcer prevention or pain management [5, 6, 26, 28-31]. The content approach can be used to assess nurses' professional knowledge and practice, as reflected in the nursing records.

3.2. Review of legislative and professional requirements on nursing documentation

Nursing documentation must comply with legislative and professional requirements; therefore, nursing documentation audit has to consider the requirements of the relevant legislation and professional standards. In Australia, aged care is strictly regulated by the Aged Care Act and accreditation standards [31]. These legal documents were reviewed to ensure that our documentation audit approach complies with their requirements. The Documentation and Accountability Manual [32] was set up by Australian government to guide nursing documentation practice in aged care homes. It is the major source of the quality criteria for our audit instrument. In addition, some professional guidelines on nursing documentation recommended by the nursing boards mentioned above have provided standards for the formation of questions in the instrument [33-35].

All of the above - mentioned legislative and professional documents require documentation of care processes. For example, it is stated in the Documentation and Accountability Manual that the practice of professional nurses incorporates four major steps in the total package of care including: assessment, planning, implementation and evaluation. Clinical documentation should reflect the resident's health care status, changing needs and care given and should record what is done, why and how. Evaluative statements should reflect alteration in health status, needs and expectations of the resident. There are also requirements on the quality of documentation structure and process, concerning legibility, factuality, briefness, timelessness, signature and designation.

The Aged Care Accreditation Standards has clearly defined the scope of care to be provided to the residents in relation to their care needs. A framework has been developed to measure whether a resident's care needs were sufficiently covered in the nursing record. Examples of care needs required by the accreditation standards include those for pain management, nutrition and hydration, skin care, continent management, mobility, and behavioral management [32].

3.3. Review of organizational nursing documentation practice

Nursing documentation is well emphasized in Australian aged care facilities because of its close link to funding, accreditation of services and quality of care outcomes. The nursing process model is a theoretical framework for nursing documentation [36]. The resident records in aged care organizations include admission form, resident assessment forms, care plan, progress notes, incident report, various observation and treatment charts, and case conference records.

The policies, protocols and audit tools used by aged care organizations guide nursing care and documentation practice in aged care facilities. They were reviewed to identify the relevant quality criteria for our auditing instrument. The criteria found from those documents were consistent with government legislation and nursing professional guidelines and recommendations. Examples of the criteria include legibility, proper language, standard abbreviations, objectivity of recording, thorough assessment completed at admission, regular review of care needs, identification of residents' current and potential needs, and individualized and detailed care plans.

4. Developing a nursing documentation audit instrument

The selection of quality criteria was based on the following considerations: Firstly, the aim of the study is to systematically evaluate the quality of nursing documentation in aged care facilities; therefore, a full picture of the quality of nursing documentation should be presented. This justifies the focus of the audit on the three quality dimensions of nursing documentation. Secondly, our audit instrument should be applicable to any paper-based or electronic nursing documentation systems in Australian aged care organizations. As the primary function of nursing documentation is to record care, our audit has to focus on whether the content of nursing documentation sufficiently reflects the care process. Thirdly, the quality of nursing documentation may be perceived differently by researchers with different research and practice focus, as reflected in various instruments identified in the literature. In our study, we judge the quality of nursing documentation based on Australian aged care documentation practice.

Although the content of nursing documentation will be the focus of our evaluation, the purpose of the audit remains to assess the quality of nurses' description of care rather than care itself. Further, assessment of the accordance of nursing documentation to the care actually delivered on the floor is excluded from our study as it is outside the scope of retrospective audit of nursing records.

The audit instrument adopts three approaches as mentioned earlier. The instrument contains three sections: completeness of nursing history and assessment, sufficient description of nursing process and quality of data entry.

- Section A (completeness of nursing history and assessment): contains 6 questions and measures the completeness of resident general information and nursing assessment at admission and ongoing basis.
- Section B (sufficient description of nursing process): contains 19 questions. It measures the quality of nurses' description of resident problem and care need identifica-

tion, goal setting, intervention planning and implementation, and care evaluation.

- Section C (meeting requirements for data entry): contains 9 questions that are mainly applicable to paper-based records. This section focuses on the quality of nursing documentation within the dimension of documentation structure and process.

The audit instrument applies five point Likert scale [4 to 0 point) to grade each nursing record and contains thirty-four questions. Therefore, the maximum score is 136 and minimum score is 0. A user manual for using the nursing documentation audit instrument has been developed. It contains detailed information about how to grade a record when conducting an audit. Examples of questions in the instrument are displayed in Table 1.

Instrument questions
Section A. Completeness of nursing history and nursing assessment
A.1.Is the resident's nursing history completed?
A.3. Is the resident's ongoing assessment form completed?
A.4. Is the nursing assessment conducted using assessment tools or predefined assessment forms?
Section B. Sufficient documentation of nursing process
B.1.a. Is/are nursing problem(s)/risk(s) identified?
B.1.c.Is/are the nursing problem(s)/risk(s) clearly stated reflecting the type and nature of the resident's current and/or potential problem(s)
B.1.d. Does/do the statement(s) of problem(s)/risk(s) indicate one or more causative contributing factors?
B.2.c. Is/are the goal(s) observable or measurable?
B.3.c. Is/are the intervention(s) specific and detailed?
B.4. Has/have the intervention (s) implemented as evidenced in the record?
B.5.B. Is/are resident outcome(s) in relation to each nursing intervention documented in the record?
Section C. Meeting requirements for data entry
C1. Is the writing of the record legible?
C3. Is/are statement(s) factual and objective
C4. Are all entries are using 24hr clock?
C6. Is/are error(s) properly corrected with a single line and signed and leave no space of recording?
C9. Are all documents Signed? Dated? Printed name? With designation of the nurse?
The instrument uses five Likert scale to grade each record: always=4, usually=3, neutral=2, less frequently=1, never=0; or fully=4, mostly=3, partly=2, occasionally=1, missing=0

Table 1: *Sample questions of the nursing documentation audit instrument.*

Face validity of the preliminary instrument was tested in a meeting with six nursing managers in an aged care organization, RSL Care. This was followed by consultations with three nursing managers individually regarding the relevance of the questions listed in the instrument. The instrument was refined by removing and adding some questions. Afterwards, a formal content validation process was carried out in another meeting with five nursing managers in a second aged care organization, Warrigal Care. High consensus on the questions was obtained during this meeting, except for one section, which contained ten questions assessing the compliance with care practice specified by the accreditation standards. This section was removed because the nursing managers suggested that questions in it were already covered by other sections of the instrument. The instrument is currently being piloted in an aged care facility of UnitingCare Ageing South Eastern Region to verify it feasibility and reliability. After that, the instrument will be applied widely across three aged care organizations to measure the quality of paper-based and electronic nursing documentation.

5. Conclusion

This paper describes the approaches to developing an audit instrument to measure the quality of nursing documentation and quality of care reflected in the nursing records in residential aged care homes. The instrument was developed based on published studies, Australian legislative and nursing professional requirements and aged care practice in two aged care organisations. It is anticipated that the instrument will not only serve the purpose of collecting data for a research project, but also be useful to audit nursing documentation in residential aged care facilities in Australia.

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