Effective documentation in residential aged care facilities

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Executive summary

Background

The delivery of effective and appropriate care for older people living in residential care settings depends, in part, on the quality of care documentation available to nurses, care workers and other members of the multidisciplinary team. The documentation of assessment data, care plans and progress recordings are also used in some countries in quality audit processes and to validate claims for funding. Professional leadership in most aged care settings rests largely with nurses and the problem-solving approach to documentation, well established in nursing for some years, is frequently the basis of documentation systems in aged care homes. The benefits to the residents of aged care homes of effective and appropriate documentation could potentially be negated if they are focused less on meeting the needs of residents and more on meeting requirements for quality audit, for funding or for compliance with the tenets of an orthodox approach to documentation, such as that of problem-solving.

The need for effective and appropriate documentation in aged care settings is identified in policy statements in most jurisdictions. In most advanced economies investment in developing a plethora of documentation designs and systems, in both paper and electronic formats, is evident. The degree to which this investment contributes to the quality of care for residents and the delivery of care by direct care staff are not yet well established. No previous systematic review concentrating on nursing documentation and quality care outcomes specific to aged care have been identified however two systematic reviews focused on nursing documentation generally have been reported. One systematic review [1] concluded that there appears to be a conflict between documentation to meet the care needs of residents and documentation to meet the needs of management and administration. The reviewers also concluded that nurses in practice now need to be ready to share information systems and information with their patients and with their medical health colleagues. The second systematic review focused on acute care, with the reviewers concluding that there was no measurable evidence to identify the effect of documentation on health outcomes or care quality in acute care settings. [2]

Given this lack of clarity surrounding the relationship between documentation, resident outcomes and the quality of care; and the continued investment in both developing new documentation systems and in nursing/care staff time to document care, a systematic review of the available international evidence was considered to be important in contemporary aged care.

Objectives

To identify the best available evidence on the effects of documentation on the quality of care in aged care facilities.

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Inclusion criteria

Types of participants

The review considered studies that included residential aged care settings that care for older residents (60 years and older) including high dependency and low dependency facilities.

Types of intervention(s)/phenomena of interest

The interventions of interest to this review were systems of nursing documentation that may have an impact on the quality of care. The interventions included were:

* Documentation in case notes
* Electronic documentation systems
* Facility documentation

Types of studies

Randomised controlled trials, descriptive studies and qualitative studies concerning the documentation within an aged care environment were all included in the scope of this review.

Types of outcomes

The outcomes measures of interest included staff satisfaction and attitudes to documentation and staff time. From the resident's perspective, incidence of falls, nutrition status, condition of resident skin and resident satisfaction and quality of life measures were identified as indicators of the quality of care suitable for inclusion.

Search strategy

The search commenced with a data base search of the Cochrane library, MEDLINE, CINAHL, Current Contents, Psychinfo, Expanded Academic Index, Cancerlit, Sociofile, Austrom and Health sites. Hand searching and web searching included HISA conference proceedings and centres of evidence based practice including the Joanna Briggs Institute.

Methodological quality

Quantitative Papers

Papers selected for retrieval were assessed by two independent reviewers for methodological quality prior to inclusion in the review using the standardised critical appraisal instruments from the Joanna Briggs Institute System for the Unified Management, Assessment and Review of Information package (SUMARI). Any disagreements that arose between the reviewers was resolved through discussion with a third reviewer.

Qualitative Papers

Papers selected for retrieval were assessed by two independent reviewers for
methodological validity prior to inclusion in the review using the standardised critical appraisal instruments from the Joanna Briggs Institute System for the Unified Management, Assessment and Review of Information package (SUMARI). Any disagreements that arose between the reviewers was resolved through discussion with a third reviewer.

Data Collection

Statistical pooling was not possible in this review. However, metasynthesis of qualitative findings was conducted. Qualitative data was extracted from papers included in the review using the standardised data extraction tool from the Joanna Briggs Institute System for the Unified Management, Assessment and Review of Information package.

Data Synthesis

Where meta-synthesis was possible, qualitative research findings were pooled using the Qualitative Assessment and Review Instrument (QARI). This involved the aggregation of findings to generate a single comprehensive set of synthesised findings. Where textual pooling was not possible the findings were presented in narrative form.

Results

Metasynthesis of the qualitative findings from the thirteen included studies gave rise to two synthesised findings:

1. Electronic documentation systems reduce the time needed to document and improve the quality of content (Level 3)
2. If documentation is designed to serve purposes other than the planning, delivery and evaluation of care, the quality of care will be compromised (Level 3)

Conclusions

This systematic review concurs with two earlier systematic reviews concerning documentation in general nursing which noted that there was a lack of a causal link between documentation and

client outcomes and that the relationship between information systems and practice is poorly understood by practitioners. These results highlight concerns as to the nurse's understanding of the relevance of documentation in a professional framework and as a tool for quality care assessment. The evidence suggests that:

1. There is no causal link between documentation and client outcomes (Level E4)
2. The relationship between documentation and direct care delivery is poorly understood by practitioners (Level E4)
3. Effective documentation incorporates recordings related to assessment, care planning, progress and evaluation. (Level E4)
4. Computer aided software applications for data analysis and care planning reduce the time needed for documentation. (Level E3)
5. Education in nursing documentation improves the quality of data recording (Level E4)

Keywords: Randomized controlled trials, qualitative research, quality and care, nursing homes and (records or data or statistics), aged or elderly, residential or homes for the aged, quality of health care, outcome and process measurement, records and nursing, documentation and nursing

Introduction

Background

The effective use of information is pivotal to the delivery of contemporary nursing care. [3] During the 1970's there was an increasing recognition by nurses as to the need for communicated information through the effective documentation of client assessment, care planning and the evaluation of interventions in terms of client outcomes. Nurses' understanding of the relevance of data gathering and outcome evaluation has not been fully investigated.[1, 4] The literature suggests that documentation processes frequently fail to accurately record data and to capture data relevant to those who deliver care. The reluctance of the aged care sector to introduce electronic communication, information and data systems is said to have impeded quality improvement and to have failed to expose the extent and effect of nursing and allied health interventions in aged care. No previous systematic review concentrating on nursing documentation and its relationship to care delivery or to quality of care outcomes specific to aged care has been identified. A Cochrane Collaboration review of nursing documentation[1] concluded that there appears to be a conflict between documentation to meet the care needs of residents and documentation to meet the needs of management and administration. The reviewers also concluded that nurses in practice now need to be ready to share information systems and information with their patients and with their medical health colleagues. Another systematic review focused on acute care, with the reviewers concluding that there was no measurable evidence to identify the effect of documentation on health outcomes or care quality in acute care settings.[2]

Documentation is the basis of external funding and accreditation decision making in aged care in some jurisdictions. In Australia, for example, calculation of funding for aged care facilities is based on the estimation of the relative dependence of residents and this is validated by randomly auditing documentation; thus most documentation systems are designed to both satisfy funders and to facilitate care. [5] Critics of this dual (and sometimes conflicting) purposes of documentation argue that the use of a funding tool as a framework to direct documentation leads to a lack of focus on client care . In 1994 the Government of Australia commissioned an investigation to examine models of documentation for nursing care in the aged care sector. An expert panel investigated the most suitable model(s) of nursing home documentation in line with the Government's requirement for accountability and professional nursing practice. The panel of experts reported that large proportions of nursing home staff lacked the necessary skills in documentation for professional practice and that the skill level of staff particularly in Hostels (facilities providing care to residents with relatively low care needs) impacted on the level of documentation. The central role of nursing in long term care settings and the dominance of medicine within the health system where nurses are educated impacts on the status given to information documented, with priority often assigned to medically related entries.[6, 7] Medical information is often well documented despite the inability of medical diagnosis to capture data that determines individual nursing care. [8] It has been reported that nurses feel other health

professionals do not consider their notes to be of consequence and that this leads to a culture that regards comprehensive documentation as unimportant.[9] Holtzman and others [10] suggests that nursing activities are generally located in the context of a medical paradigm in aged care facilities and that this may lead other health professionals, and nurses themselves, to assume that nursing notes have no relevance to them.

From a legal perspective nurses consider documentation as an instrument designed to protect them from litigation and that their awareness of the legal issues concerning documentation greatly influences the style of their recording so that the focus is on the avoidance of blame rather than on the needs of clients.

The oral tradition of nursing is well documented and is best demonstrated in the use of oral "handovers" from one nurse to another and the use of informal notes. It has been suggested that nurses may be silenced in their work because they remind people of their vulnerability, frailty and mortality. [11] As a result of this, critical data concerning the human body (and nurses' and carers' role in managing the intimate management of bodily functions such as defecation and showering) and is often omitted. Language usage, restraint from embarrassment of the nurse or the desire to comply with dignity issues of the client, often compounded by cultural concerns, all impact on the nurse's perception of what is accurate documentation.[3, 9, 12] The psychological and emotional distances that some nurses find necessary to establish to achieve what they perceive as a professional manner with the client extends to the written word resulting in the spiritual and emotional values of the clients becoming diminished or stereotyped in documentation. [11] Martin,[12] in a study undertaken in Canada, estimates that between 12-20% of a nurse's time is taken up by documentation in long term care and reports that many of the nurses in the study resented this time away from direct client care and completed documentation in overtime.

The use of electronic documentation systems is said to increase accuracy and reduce time. The literature suggests that aged care facilities lag behind their acute sector peers in the application of computer aided documentation.

Given this lack of clarity surrounding the relationship between documentation, resident outcomes and the quality of care; and the continued investment in both developing new documentation systems and in nursing/care staff time to document care, a systematic review of the available international evidence was considered to be important in contemporary aged care.

Inclusion criteria

Types of participants

The review considered studies that included residents in aged care settings that care for older residents (60 years and older) including high dependency and low dependency facilities

Types of intervention(s)/phenomena of interest

The interventions of interest to this review were systems of nursing documentation that have an impact on the quality of care, the interventions included were:

* Documentation in case notes
* Electronic documentation systems
* Facility documentation

Types of studies

This review considered randomised controlled trials, cohort studies, time series studies and studies that focus on qualitative data including, but not limited to, designs such as phenomenology, ground theory, ethnography, action research and feminist research. Descriptive studies of any design were included. Other text such as opinion papers and reports were considered in a narrative summary.

Types of outcomes

The outcomes measured included staff satisfaction and attitude to documentation and staff time. From the resident's perspective, incidence of falls, nutritional status, condition of resident skin and resident satisfaction and quality of life measures were identified as indicators of quality suitable for inclusion in the review.

Search strategy

The search strategy accessed both published and unpublished material.

A search of CINAHL and Medline identified the relevant key words contained in the title, abstract, and subject descriptors. The terms identified in this way were used by respective databases and were used in the extensive search of the literature. Reference lists and bibliographies of the articles collected from those identified in the initial search were further explored. Only articles published in the last 10 years in English were used in this review.

The following databases were searched:

Current contents
Cochrane Library
Psychinfo
Age line
Dissertation and abstract
Cancerlit,
HISA conference proceedings
Joanna Briggs Institute Evidence Libraries
Bandolier, Kellogg Library and Evidence based mental health internet sites.

Method of the review

No randomised controlled trials, cohort studies, time series studies suitable for inclusion in a statistical meta-analysis were found in the search. Qualitative research papers selected for retrieval were assessed by two independent reviewers for methodological validity prior to inclusion in the review using standardised critical appraisal instruments from the Joanna Briggs Institute Qualitative Assessment and Review Instrument (Appendix V). Any disagreements that arose between the reviewers were resolved through discussion with a third reviewer.

Data Collection

Data was extracted from papers included in the review using the standardised data extraction tool from the Joanna Briggs Institute Qualitative Assessment and Review Instrument (Appendix VI).

Data Synthesis

Where meta-synthesis was possible, qualitative research findings were pooled using the Qualitative Assessment and Review Instrument (QARI). This involved the aggregation or synthesis of findings to generate a set of statements that represent that aggregation, through assembling the findings (Level 1 findings) rates according to their quality, and categorising these findings on the basis of similarity in meaning (Level 2 findings). These categories were then subjected to a meta-synthesis in order to produce a single comprehensive set of synthesised findings (Level 3 findings) that can be used as a basis for evidence-based practice. Where textual pooling was not possible the findings were presented in narrative form.

Results

Description of studies

Of the fifty seven studies found in the search, twenty one matched the inclusion criteria sufficiently to merit retrieval.

Number of studies found and retrieved

Number of studies found	Number selected for retrieval
57	23

Methodological quality

The twenty three retrieved papers were subjected to critical appraisal by two reviewers.

Number of studies included and excluded

QARI

Number of studies included	Number of studies excluded
13	10

Thirteen papers were included in the review following critical appraisal. One of these papers was a systematic review of the relationship between nursing records and nursing practice [1] and three were reports of qualitative research studies using ethnography[3]; content analysis of interview data[13]; and thematic analysis of observational and interview data. [14] The remaining nine papers selected for inclusion were of mixed methods and included both numerical and textual data and its analysis. The quantitative components of these nine studies were not appraised and there were included on the basis of their qualitative findings or conclusions. A summary of the thirteen included studies are summarised in Appendix IX.

Results of metasynthesis of qualitative research findings

Meta-synthesis of studies included in the review generated 2 Synthesised Finding(s). These Synthesised Findings were derived from 23 Study Finding(s) that were subsequently aggregated into a 6 Category/ Categories. The Study Findings are listed in Appendix IX and the QARI View detailing the relationships between Study Findings, Categories and Synthesised Findings is in Appendix IX.

Synthesised Findings

Synthesised finding Electronic documentation systems reduce time needed to document and improve the quality of content

Electronic documentation systems reduce time needed to document and improve the quality of content	Time needed to document	The demand for documentation detracts from care givers ability to deliver care (C) Expert systems reduce time needed to document (C)
	Computerised, expert systems improve documentation and save time	Expert systems have high acceptability in registered nurses (C) Expert systems improve content of documentation (C)

Comments: All four of the findings that gave rise to these synthesised findings were rated as unequivocal at the point of extraction.

Synthesised finding: If documentation is designed to serve purposes other than the planning, delivery and evaluation of care, quality of care is compromise.

If documentation is designed to serve purposes other than the planning, delivery and evaluation of care, quality is compromised	Documented care and responses to care do not reflect actual care and responses to it	Documentation focused on medical diagnosis and treatment and not on broader nursing or social needs (C) Formal documents do not record actual care (C)
	The content of documentation is frequently incomplete	Under-reporting of aggressive episodes by staff (U) Resident charts were incomplete in terms of mental health and history (C) In spite of training, documentation of nursing diagnosis and of goals was poor (C) Resident's experiences not documented (C) Documentation had no impact on resident (C) Comprehensive Assessment not documented (C) Formal documentation is often supplemented with "scraps" (personal notes not open to scrutiny} (U) Written nursing records unreliable in accurately recording nutritional intake (U) The mental condition of residents was often incomplete (U)
	Documentation is seen as a defence against criticism rather than an aid to quality	Formal documentation is perceived as "official" and for official purposes only (C) Formal documentation exposes practitioner to criticism (C)
	Valuable information is often not captured in formal documents	Informal documentation plays an important, though invisible, role in care giving (C) What is written in the documentation does not always reflect care given (C) Informal and verbal communication is most frequent mechanism of effective communication regarding care (C)
		Staff estimates of food intake conflict with actual intake (U) Other methods, such as photography and independent observation and recording, are more accurate that current documentation methods (U) Current approaches to documentation are inappropriate for aged care (C)

Comments: All nineteen of the findings that gave rise to these synthesised findings were rated as credible or unequivocal at the point of extraction.

Discussion

Staff Satisfaction

Few studies that investigated staff satisfaction in relation to documentation methods were found but expert opinion papers report concern with current methods of documentation particularly in terms of the time consuming nature of documentation, and the volume of documentation required.

One study clearly demonstrated the use of informal note taking in the work place both as a method for planning short-term work objectives and as an aid memoir. This informal note taking is reported to operate alongside, but independently of, formal record systems, and the author suggested a need to examine how current documentation systems fail to accommodate the apparent need for aged care staff to generate additional documents to carry out their role.[3]

In a study evaluating the use of an electronic documentation system in aged care homes in Canada and Australia, Koch[15] reported that computer-assisted records achieved a high level of acceptance in both the capture and analysis of data in the formation of nursing diagnosis. There was, however, a requirement in this study for staff to use the North American Nursing Diagnosis Association (NANDA) taxonomy and it was noted that the greater the level of expertise of the nurse indicated a greater potential for utilisation of the method of recording.

Payne [14] described how there were seldom, dedicated, private spaces provided for an individual nurse to document in aged care homes. She also argued that nurses in aged care frequently derived little satisfaction from personal authorship of their entries as current documentation systems assumed a generalised, homogeneous approach to the care delivery and care documentation process.

Documentation of Measures of Resident Outcome

Few studies exposed or effectively demonstrated measurement of resident care outcomes through documentation.

Two studies found that nursing in the aged care domain was directed from a medicalised, illness perspective and that the measurement of outcomes related to the daily lives of residents were therefore regarded as unimportant.[8, 14] Documentation of mental status was investigated empirically in two studies. [16, 17] In both of these studies, assessment through observations using mini mental tests or descriptors of behaviour were investigated. The findings suggest that nurses observed did not provide adequate documentation on mental status to deliver adequate care or to enable other health care professionals to satisfactorily plan or evaluate appropriate interventions. Both authors concluded that improvement in consistency of recordings is to be recommended, noting there was frequent inadequate or under-reporting of behavioural incidents. [16, 17]

Insufficient and unreliable documentation in relation to nutritional intake was found in two studies.[18, 19] Staff perceptions when recording written assessment of food intake was found to vary widely. Despite the costs incurred, photography was recommended as an aid to record amounts consumed ahead of methods such as the time consuming weighing of the food as an accurate assessment. Photography may also demonstrate style of eating as well as amount taken and negates the need for reliance by staff on their memory.

Performance Measures

One study emphasised the use of organising data collection, synthesis and analysis through computer aided software packages. Historically there has been misunderstanding that such packages would be prescriptive in application, as many nurses may not have been exposed to the concept of computer software packages as instrument for data extraction and collation of information in the workplace. The tool described incorporated the potential for further education and evaluation in the planning of care directives and

assessment of outcomes of those directives.[20]

Time Constraints

There is some evidence to support the claim that the time used in documenting nursing care strategies in aged care facilities may detract from the ability of staff to deliver care. One Canadian study noted that 12% of nursing time in long term care facilities was spent documenting care.[12] Koch (1999) found that computer aided packages saved up to 14% of time needed to document. [15] Expert opinion suggests that nurses resent the

time spent on documentation as it takes them away from direct care delivery.

Conclusion

This systematic review found no high quality evidence on the effects of documentation on staff satisfaction; staff attitudes to documentation; the incidence of resident falls; the nutritional status of residents; the condition of resident skin; and resident satisfaction and quality of life measures. No high quality studies that captured numerical data to establish the effect of documentation on these outcomes or to identify relationships between
documentation and these outcomes were found in this systematic review.

Some qualitative evidence was found to support the view that the use of electronic documentation systems reduces staff time needed to document and improves the quality of reporting. The metasynthesis of qualitative findings yielded two synthesised findings:

*Electronic documentation systems reduce the time needed to document and improve the quality of content (Level M1)

*If documentation is designed to serve purposes other than the planning, delivery and evaluation of care, the quality of care will be compromised (Level M2)

Evidence from single studies suggests that:

*There is no causal link between documentation and client outcomes(Level E4)

*The relationship between documentation and direct care delivery is poorly understood by practitioners (Level E4)

*Effective documentation incorporates recordings related to assessment, care planning, progress and evaluation. (Level E4)

*Education in nursing documentation improves the quality of data recording (Level E4)

Implications for practice

Effectively documenting residents' assessments, care plans and progress are generally seen as an important indicator of good communication and as a critical component of professional practice. Making and communicating these recordings are also time consuming and comprise a significant component of the daily functioning of aged care facilities. Documentation is also used in some jurisdictions to capture information for management and administrative purposes and as an indicator of quality or to validate claims for funding.

Although this review did not find any high quality evidence and the findings should therefore be treated with caution, the best-available evidence suggests that effective and appropriate documentation focuses on meeting the needs of residents. The limited evidence available suggest that the relationship between documentation and practice is poorly understood by practitioners and that a tension exists for nurses and care staff between meeting the needs of residents and the needs of management and funders. The findings of this review suggest that the design and of documentation systems occupies a high proportion of direct care staff time (that could be otherwise used to deliver care) and that current documentation systems frequently fail to capture data accurately or of sufficient detail to assist staff in communicating care needs; maintaining continuity of care; and delivering care. The rapid development of electronic care information systems and their application in aged care practice appears to reduce the time needed to document (thus, releasing time that could be used in direct care giving) and to improve accuracy.

Implications for research

It is clear that further research is urgently required in this area. The review has shown that there is, as yet, no high quality evidence on the relationship between documentation and resident outcomes or on the relationship between information systems and practice. This presents numerous opportunities to elucidate greater understandings of aged care through
researching the information used by nurses and care staff and the relationship between care giving how it is understood expressed in written form by and its understanding and written expression by nurses and care staff.

No high quality studies that captured numerical data to establish the effect of
documentation on resident outcomes or to identify relationships between documentation and these outcomes were found in this systematic review and further large scale, multi-site studies are need to explore this further.

Further qualitative research could provide better

understanding of care giving and of the role of documentation in providing quality care.

Conflict of Interest

None

Appendix I - Search Strategy

QARI

CINAHL search terms
#7 #5 and #6
6 explode ?clinical trials?/all topical subheadings/all age subheadings in DE
#5 #1 and #4
#4 #2 or #3
#3 (resident* and (aged or elderly)) in DE,TP
#2 (nursing home*) in DE,TP
#1 explode ?Documentation;?/all topical subheadings/all age subheadings in DE
MEDLINE EXPRESS search terms
#11 #9 and #10
#10 #2 and #4
#9 #8 and (py>1991)
8 (randomized controlled trials) in MESH,PS
7 (#6 and quality and care) in MESH,PS
#6 (nursing homes and (records or data or statist*)) in MESH,PS
#5 #1 and #2 and #3 and #4
#4 (aged or elderly) in MESH,PS
#3 (residential or homes for the aged) in MESH,PS
#2 (quality of health care) or (outcome and process measurement) in MESH,PS
#1 (records and nurs*) in MESH,PS
SECONDARY SEARCH: through silver platter data bases as described
#1 nursing
#2 documentation
#3 nursing home
#4 Aged care
#5 nutrition
#6 record*
#7 #1 and #2 and #3 and #5
#8 Falls
#9 and #1 and (#3 or #4) and #8
#10 Skin integrity
#12 and #1 and #2 and (#3 or #4) and #10
#13 Resident and satisfaction
#14 #1 and #2 and (# 3 or #4) and #13
#15 # 1and #2 and #3 and time

Appendix II - Search Results

ANC. The influence of photographic documentation on the clinical decision of nurses. ANCI code of professional conduct for nurses in Australia. 1995;34: 413-417.[21]

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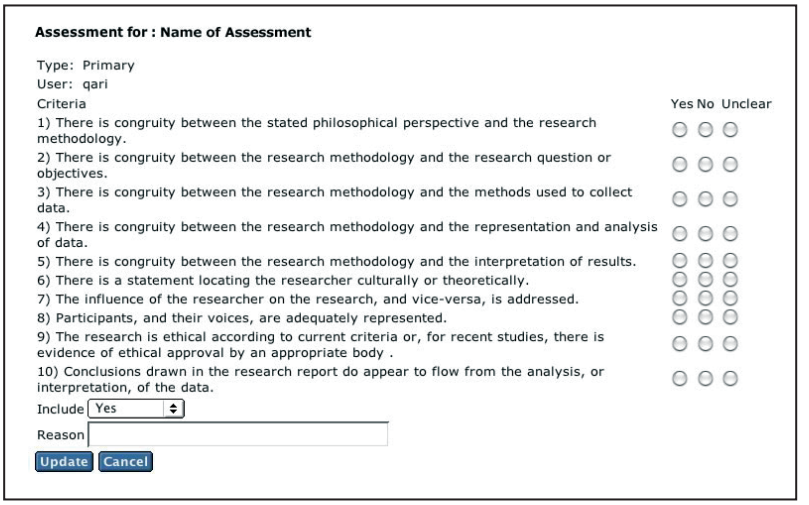
Stephens S, Mason S. Putting it together: A clinical documentation system that works. Nursing Management. 1999;30:43-7[49]

Appendix V - Appraisal instruments
QARI Appraisal instrument



Assessment for : Name of Assessment

Type: Primary
User: qari

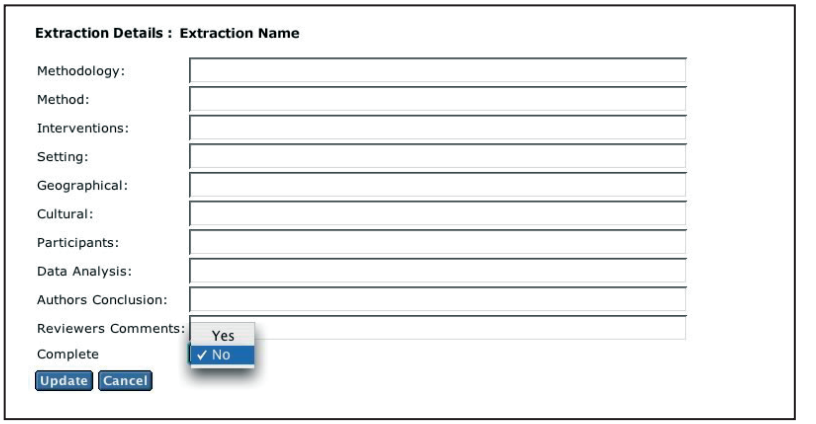
Criteria	Yes	No	Unclear
1) There is congruity between the stated philosophical perspective and the research methodology.	○	○	○
2) There is congruity between the research methodology and the research question or objectives.	○	○	○
3) There is congruity between the research methodology and the methods used to collect data.	○	○	○
4) There is congruity between the research methodology and the representation and analysis of data.	○	○	○
5) There is congruity between the research methodology and the interpretation of results.	○	○	○
6) There is a statement locating the researcher culturally or theoretically.	○	○	○
7) The influence of the researcher on the research, and vice-versa, is addressed.	○	○	○
8) Participants, and their voices, are adequately represented.	○	○	○
9) The research is ethical according to current criteria or, for recent studies, there is evidence of ethical approval by an appropriate body .	○	○	○
10) Conclusions drawn in the research report do appear to flow from the analysis, or interpretation, of the data.	○	○	○

Include Yes

Reason

Update Cancel

Appendix VI - Data extraction instruments
QARI data extraction instrument



Appendix VII - Included Studies

Study	Methods	Participants	Intervention	Outcomes	Notes
Beck CMR, Baldwin B [16]	Record audit and measurement of aggression using the Ryden Aggression Scale	Residents of nursing home who display aggressive behaviour	N/A	The use of standardised forms for reporting could improve consistency. Under-reporting of aggressive incidents suggest that nursing interventions to interrupt patterns of aggressive behaviour were compromised.	N/A
Currell R, Wainwright P, Urquhart C[1]	Systematic Review	Acute Care - nurses and patients	N/A	The authors of the review suggested that the relationship between information, information systems and practice is poorly understood (Currell, et al, 2003). The studies reviewed were predominantly concerned with administrative issues rather than the needs of clinical practice (Currell, et al, 2002). The authors have recommended further research is required in this area, suggesting the research focus on relationship of recording systems and clinical practice	N/A

Ehrenberg A EM [27]	Pre and Post intervention retrospective audit of records8 from a stratified randomised sample	Registered nurses		No significant improvement in the quality of documentation was found	N/A
Ehrenberg AEM [8]	Retrospective audit using an audit instrument	Registered nurses		Care directed largely by medical diagnosis; very little nurse directed care documented; residents did not benefit from documentation; assessment instruments not used.	N/A
Hardey MP, Coleman P[3]	Ethnography/ Grounded Theory	Registered nurses, student nurses, nursing auxiliaries	N/A	The use of "scraps" helps staff to capture data not available for public scrutiny; nursing staff were integral to communication in the care process	N/A
Jeong SY, McMillan M[13]	Interviews	Enrolled nurses and assistants in nursing	N/A	The demand for increased documentation caused participants to be "paper oriented" rather than "human focused" in their work	N/A
Koch W[15]	Descriptive – qualitative and quantitative	Registered nurses	N/A	System suggested staff satisfaction and improved capture of data. Need for expertise in using NANDA taxonomy apparent.	N/A
Martin A, Hinds C, Felix M [12]	Record Audit/ non-participant observation	Care staff		12% of nurses time spent on documentation; documents did not reflect nursing care; informal verbal communication was the most frequent mechanism for effective communication.	N/A
McDougall,G[17]	Measurement of cognitive function using MMSE/Record Audit	106 residents in six nursing homes		Nursing documentation inadequate.	N/A
Payne SHM, Coleman P[14]	Observation, interviews	registered nurses, student nurses and care assistants		Documentation regarded as a formal routine requirement and not as a means of effective communication.	N/A

Pokrywka H, Koffler, SKH [18]	Measurement of food and caloric fluids before and after meal; care staff estimates of food consumption	residents in nursing homes/nursing home staff		Inaccuracies in documentation found; suggests this is because of number of staff involved in assessment of intake; time lag between assessment and documentation.	N/A
Simmons S, Reuben D[48]	Nursing records audit; observation; photographic recordings	Nursing staff		Nursing records insufficient and unreliable in recording nutritional intake.	N/A
Voutilainen P, Isola A, Muurinen S[22]	Audit using Senior Monitor instrument	Nursing home residents/staff		Documentation requires improvement.	N/A

Appendix VIII - Excluded Studies QARI

Burgum M. A new pathway to documentation Reason for Exclusion A descriptive paper without a strong research basis[54]

Fitzgerald RP, Shiverick BN, Zimmerman D. Applying performance measures to long term care.[20] Reason for Exclusion Does not address the inclusion criteria

Hansebo G, Kihlgren, M. Review of nursing documentation in nursing home wards changes after intervention for individualised care.[60] Reason for Exclusion Study design minimised generalisability of findings. No data to link documnented care with actual care.

Holtzman, JDJ, Meyers, R. Development and testing of a process measure of nursing home quality of care.[33] Reason for Exclusion Does not focus on documentation as an intervening variable

Levine JM, Totolos, E.A Quality orientated approach to pressure ulcer management in a nursing facility.[38] Reason for Exclusion Quality assurance project without a rigorous research design

Maffeo, R. Setting up a computerized patient record? Experience talks.[40] Reason for Exclusion Insufficient data presented

Porell F, Caro, F. Facility-level outcome performance measures for nursing homes. [56] Reason for Exclusion Insufficient data

Teno JMB, Mor KJ, Phillips CD, Hawes C, Morris Fries BE. Changes in advanced care planning in nursing homes before and after the patient self determination act: Report of a 10 state survey. [50] Reason for Exclusion Does not address review question

Ulyatt J, Zelmer L. Health care focus documentation more efficient charting. [51] Reason for Exclusion Insufficient data. Process of data analysis not adequately described.

Zinn JS, Aarosnons W.The use of standardized Indicators as Quality Improvements Tools: An application in

Pennsylvania Nursing Home.[53] Reason for Exclusion Documentation was not observed or analysed.

Appendix IX - List of study findings / Conclusions

Improving documentation of aggressive behaviour in nursing home residents

Finding 1	Under-reporting of aggressive episodes by staff
Illustration	Observed aggressive episodes were not recorded by staff in patient documents

Nursing record systems: Effects on nursing practice and health care outcomes Patient records in nursing homes.

Finding 1	In spite of training, documentation of nursing diagnosis and of goals was poor
Illustration	No significant differences between trained groups and control groups in quality of documentation after training

Patient problems, needs and nursing diagnosis in Swedish nursing home records

Finding 1	Resident's experiences not documented
Illustration	Pain was a recurring problem for residents but only one record recorded a resident's own description
Finding 2	Documentation focused on medical diagnosis and treatment and not on broader nursing or social needs
Illustration	Nursing oriented diagnosis and nursing initiated care not documented
Finding 3	Documentation had no impact on resident
Illustration	"Clients did not benefit in a quantifiable way from documentation, as is highlighted by the concern of only one client's experience of pain was recorded"
Finding 4	Comprehensive Assessment not documented
Illustration	"The use of assessment instruments were not used...it may be deduced that nurses did not value these tools..."

Scraps' hidden in nursing information and its influence on the delivery of care

Finding 1	Formal documentation is often supplemented with "scraps" (personal notes not open to scrutiny}
Illustration	Nurses and care staff wrote their own notes on scraps of paper
Finding 2	Formal documentation is perceived as "official" and for official purposes only
Illustration	Nurses considered their own "scraps" as more up-to-date, convenient, accessible and a better source of information than formal documents
Finding 3	Formal documentation exposes practitioner to criticism
Illustration	Nurses saw "scraps" as a protection against criticism.
Finding 4	Informal documentation plays an important, though invisible, role in care giving
Illustration	"Scraps" are ignored in evaluating care delivery because they are not part of the structured documentation system or information exchange

Documentation leads to reform: reality or Myth

Finding 1	What is written in the documentation does not always reflect care given
Illustration	"..there is a gap between what is written in nursing care plans and what is delivered to their residents"
Finding 2	The demand for documentation detracts from care givers ability to deliver care
Illustration	"the demand for documentation caused them to be "paper oriented rather than human focused" in their work"

Development, validation and evaluation of an expert system to provide decision support for nursing diagnosis in aged care

Finding 1	Expert systems have high acceptability in registered nurses
Illustration	Mean utility score of .72 indicated acceptability of expert system by nurses in sample
Finding 2	Expert systems improve content of documentation
Illustration	Standard of documentation improved
Finding 3	Expert systems reduce time needed to document
Illustration	A time saving of 14.4 minutes per care plan was reported

Documentation practices of nurses in long term care

Finding 1	Formal documents do not record actual care
Illustration	"Nurses acknowledged that the care they provided was not fully reflected in the care notes"
Finding 2	Informal and verbal communication is most frequent mechanism of effective communication regarding care
Illustration	"Formal documents were of less use in actual care planning, care giving, and outcome evaluation than were informal communication"

Memory awareness in nursing home residents

Finding 1	Resident charts were incomplete in terms of mental health and history
Illustration	Nurses did not provide adequate documentation for other health professionals and this lead to an inability to satisfactorily plan or evaluated care related to mental health

Interaction between nurses during handovers in elderly care

Accuracy of patient care staff in estimating and documenting meal intake of nursing homeresidents

Finding 1	Staff estimates of food intake conflict with actual intake
Illustration	"Discrepancies found between actual intake and documented estimates of intake"

Nutritional intake monitoring for nursing home residents: a comparison of staff documentation, direct observation and photography methods.

Finding 1	Other methods, such as photography and independent observation and recording, are more accurate than current documentation methods
Illustration	Photographic and independent observation recordings were more accurate than the existing documentation
Finding 2	Written nursing records unreliable in accurately recording nutritional intake
Illustration	Documentation failed to identify 53% of residents assessed as poor.

Nursing documentation in nursing homes – state of the art and implications for quality improvement

Finding 1	The mental condition of residents was often incomplete	
Illustration	Data on mental ability was absent in 75% of documents audited, even though 75% of the residents in the study had moderate dementia	
Finding 2	Current approaches to documentation are inappropriate for aged care	
Illustration	Forms used did not meet the requirements for documenting care in long-term settings	
Electronic documentation systems reduce time needed to document and improve the quality of content	Time needed to document	The demand for the documentation detracts from care givers ability to deliver care Expert systems reduce time needed to document
	Computerised, expert	Expert systems have high acceptability in registered nurses
	systems improve documentation and save time	Expert systems improve content of documentation
	Documented care and responses to care do not reflect actual care and responses to it	Documentation focused on medical diagnosis and treatment and not on broader nursing or social needs Formal documents do not record actual care
	The content of documentation is frequently incomplete	Under-reporting of aggressive episodes by staff Resident charts were incomplete in terms of mental health and history In spite of training, documentation of nursing diagnosis and of goals was poor Resident's experiences not documented Documentation had no impact on resident Comprehensive Assessment not documented Formal documentation is often supplemented with "scraps" (personal notes not open to scrutiny} Written nursing records unreliable in accurately recording nutritional intake The mental condition of residents was often incomplete
	Documentation is seen as a defence against criticism rather than an aid to quality	Formal documentation is perceived as "official" and for official purposes only Formal documentation exposes practitioner to criticism
	Valuable information is often not captured in	Informal documentation plays an important, though invisible, role in care giving What is written in the documentation does not always reflect
	formal documents	care given Informal and verbal communication is most frequent mechanism of effective communication regarding care Staff estimates of food intake conflict with actual intake Other methods, such as photography and independent observation and recording, are more accurate than current documentation methods Current approaches to documentation are inappropriate for aged care

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