

Nurses' experiences of medication administration to people with swallowing difficulties in aged care facilities: a systematic review protocol

Aida S. Forough¹ • Simon Y.-M. Wong¹ • Esther T.-L. Lau^{1,2} • Jose Manuel Serrano Santos^{1,2} • Greg J. Kyle¹ • Kathryn J. Steadman^{1,3} • Julie A.Y. Cichero^{1,3} • Lisa M. Nissen¹

¹School of Clinical Sciences, Faculty of Health, Queensland University of Technology, Brisbane, Australia, ²CEBHA (Centre for Evidence-Based Healthy Ageing): a Joanna Briggs Institute Centre of Excellence, and Queensland University of Technology, Brisbane, Australia, and ³School of Pharmacy, University of Queensland, Brisbane, Australia

Review question/objective: The objective of this review is to identify the experiences of nurses in administering oral medications to residents of aged care facilities with swallowing difficulties.

More specifically, the review question is:

What problems do nurses experience when administering oral medicines to people with swallowing difficulties living in aged care facilities?

Keywords Aged care facilities; dysphagia; experience; medication administration; nursing; swallowing difficulties

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Background

Dysphagia or “swallowing difficulties” is characterized by pain or discomfort during the swallowing process and may include experiencing difficulty with swallowing different consistencies, for example, solid or liquid foods,¹ as well as medications.² Swallowing difficulties are a growing health concern, especially among the geriatric populations.³ The prevalence of swallowing difficulties varies depending on the population being investigated. For instance, approximately 16% of older people living in their own homes self-reported experiencing difficulty swallowing,⁴ while this increased to 68% in people living in aged care facilities.⁵ With advancing age, physiologic changes in the body contribute to reduced swallowing function, which when combined with a higher risk of health conditions such as stroke, neuromuscular disorders or head and neck cancers, can negatively impact a person’s ability to swallow.^{6,7}

Swallowing difficulties can lead to negative health implications such as malnutrition, dehydration, aspiration pneumonia and can be fatal in severe cases.⁸ Furthermore, it is associated with an increased risk of medication administration errors.^{9,10} This is mainly because nurses and other healthcare professionals frequently alter medication dosage forms, for example, crush tablets or open capsules to make them easier for the patients to swallow, even when alternative formulations are available.^{10,11} Medications may also be mixed with foods or dispersed in liquids to help make them easier to swallow.¹² Such practices can be inappropriate or even contraindicated in some cases, putting patients at risk of adverse drug events. Moreover, using inappropriate administration techniques when handling solid dosage forms may result in drug loss, cross-contamination and harm to the administering person.^{13,14} Results of a recent study showed that medication administration errors occur in nearly 60% of administrations to aged care residents with swallowing difficulties,¹⁰ indicating that inappropriate medication administration practices are not uncommon in aged care facilities.^{10,14} Unsafe administration practices not only put residents of aged care facilities at risk of developing drug toxicities, sub-therapeutic

Correspondence: Aida S. Forough, a.sefidaniforrough@qut.edu.au

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doses, adverse drug reactions or even death,^{15,16} but it may also have legal implications for the administering person.¹⁷

Previous studies investigating the experiences of healthcare professionals from different disciplines reported on several problems that were associated with appropriate and safe medication administration to people with swallowing difficulties. Some of these identified issues were related to availability and usability of alternative drug formulations, and the cost of medications.¹⁸ Problems in information flow, the wide spectrum of dysphagia manifestations, the perception of swallowing as a feeding function, and healthcare providers' uncertainties were other challenges in terms of decision making for safe medication administration practices in swallowing difficulties.¹⁸ Some studies have reported that nurses in aged care facilities are concerned about modifying dosage forms because of the lack of access to pharmaceutical references specific to medication dosage form modification.¹⁹ They also mention time limitations in medication rounds as a problematic issue in this regard.¹⁹ Findings also suggest a knowledge gap among nurses as well as other healthcare professionals in terms of oral preparations suitable for patients with swallowing difficulties.^{20,21} Moreover, inadequate staffing in some nursing homes may be considered as another factor in nursing homes, which compromises the quality of care to the residents.^{22,23}

Although patients' swallowing difficulties with medications may concern different groups of healthcare professionals, nurses are those at the frontline of administering medicines to patients including those living in aged care facilities. Therefore, in-depth understanding the underlying reasons and challenges leading to unsafe medication administration practices from nurses' perspectives may lead to potential solutions to improve those practices. This will consequently lead to improved patient care and reduced rates of errors. An initial scoping search in *JBIR Database of Systematic Reviews and Implementation Reports* and the Cochrane Database of Systematic Reviews revealed that no systematic review is currently available in scientific literature with a focus on the experiences of nurses who are involved in the administration of medications to people with swallowing difficulties in aged care facilities. Therefore, there is a need for a systematic

understanding of the problems and challenges that nurses experience while administering medicines to aged care residents with swallowing difficulties.

Inclusion criteria

Types of participants

The current review will consider studies that include nurses from all educational levels who are involved in administering medicines in aged care facilities. In Australia, these may include registered nurses, enrolled nurses and medication endorsed nurses, and the equivalent terms used in other countries will also be included. The review will also include all aged care residents who have difficulty in swallowing.

Phenomena of interest

The current review will consider studies that evaluate nursing staff experiences with administering oral medication to people with swallowing difficulties in aged care facilities. More specifically, the review will focus on the types of problems nurses experience when administering any type of oral medicines to aged care residents with swallowing difficulties. These experiences may be related to patient factors, nurse factors or organizational factors.

Context

The context of the review will be aged care facilities including all levels of care.

Definitions

Aged care facilities: Aged care facilities in this review will include residential aged care settings at any level of care, from accommodation and personal care (also known as low care in some countries) to accommodation, personal and 24-hour nursing care (also known as high care in some countries). The definition of aged care facilities will not encompass community services for older people who receive personal and nursing care in their own homes.

Dysphagia or swallowing difficulties in this review will include both diagnosed dysphagia and patient-reported swallowing difficulties.

Types of studies

The review will consider studies that focus on qualitative data including, but not limited to, designs such as phenomenology, grounded theory, ethnography and action research. Studies using a mixed

methods approach with both quantitative and qualitative results will also be considered as their qualitative components may be used in the final analysis.

In the absence of research studies, other text such as opinion papers and reports will be considered.

Search strategy

The search strategy aims to find both published and unpublished studies. A three-step search strategy will be utilized in this review. An initial limited search of PubMed and CINAHL will be undertaken followed by an analysis of the text words contained in the title and abstract, and the index terms used to describe the article. A second search using all identified keywords and index terms will then be undertaken across all included databases. Finally, the reference list of all identified reports and articles will be searched for additional studies. Studies published in English will be considered for inclusion in this review. No date limitations will be applied.

The databases to be searched include: PubMed, CINAHL, Embase, Scopus and PsychINFO.

The search for unpublished studies will include: Mednar and ProQuest Dissertations and Theses databases.

Initial keywords to be used will be:

Experience

AND

Nurse (OR):

- Registered nurse
- Medication endorsed nurse
- Nursing

AND

Swallowing difficulties (OR):

- Dysphagia
- Deglutition Disorder
- Swallowing disorder

AND

Medication administration

Drug administration

AND

Aged care facilities (OR):

- Nursing home
- Residential aged care facilities
- Care home

Assessment of methodological quality

Qualitative papers selected for retrieval will be assessed by two independent reviewers for methodological validity prior to inclusion in the review. The

JBIC Qualitative Assessment and Review Instrument (JBIC-QARI) will be used. JBIC-QARI is a standardized critical appraisal instrument from the JBIC System for the Unified Management, Assessment and Review of Information (JBIC-SUMARI) software (Appendix I). Any disagreements that arise between the reviewers will be resolved through discussion or with a third reviewer.

Textual papers selected for retrieval will be assessed by two independent reviewers for authenticity prior to inclusion in the review. The JBIC Narrative, Opinion and Text Assessment and Review Instrument (JBIC-NOTARI) will be used (Appendix I). It is a standardized critical appraisal instrument from the JBIC-SUMARI module. Any disagreements that arise between the reviewers will be resolved through discussion or with a third reviewer.

Data extraction

Qualitative data will be extracted from papers included in the review using the standardized data extraction tool from JBIC-QARI (Appendix II). Data from narrative, expert opinion and text will be extracted using the JBIC-NOTARI data extraction tool. These data extracted will include specific details about the interventions, populations, study methods and outcomes of significance to the review question and specific objectives. Authors of primary studies will be contacted for further clarification or any missing information.

Data synthesis

Qualitative research findings will, where possible, be pooled using JBIC-QARI. Data from text and opinion papers will be synthesized using JBIC-NOTARI. This will involve the aggregation or synthesis of findings from qualitative studies as well as conclusions of the author in text and opinion papers to generate a set of statements that represent that aggregation. This will be achieved through assembling the findings/conclusions rated according to their quality and categorizing these findings/conclusions on the basis of similarity in meaning. These categories are then subjected to a meta-synthesis to produce a single comprehensive set of synthesized findings/conclusions that can be used as a basis for evidence-based practice. Where textual pooling is not possible, the findings will be presented in narrative form.

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Appendix I: Appraisal instruments
QARI appraisal instrument

JBI QARI Critical Appraisal Checklist for Interpretive & Critical Research

Reviewer Date

Author Year Record Number

	Yes	No	Unclear	Not Applicable
1. Is there congruity between the stated philosophical perspective and the research methodology?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Is there congruity between the research methodology and the research question or objectives?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Is there congruity between the research methodology and the methods used to collect data?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Is there congruity between the research methodology and the representation and analysis of data?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is there congruity between the research methodology and the interpretation of results?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Is there a statement locating the researcher culturally or theoretically?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Is the influence of the researcher on the research, and vice-versa, addressed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Are participants, and their voices, adequately represented?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Overall appraisal: Include Exclude Seek further info.

Comments (Including reason for exclusion)

NOTARI appraisal instrument

JBI Critical Appraisal Checklist for Narrative, Expert opinion & text

Reviewer Date

Author Year Record Number

	Yes	No	Unclear	Not Applicable
1. Is the source of the opinion clearly identified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Does the source of the opinion have standing in the field of expertise?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Are the interests of patients/clients the central focus of the opinion?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Is the opinion's basis in logic/experience clearly argued?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the argument developed analytical?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Is there reference to the extant literature/evidence and any incongruency with it logically defended?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Is the opinion supported by peers?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Overall appraisal: Include Exclude Seek further info

Comments (Including reason for exclusion)

Appendix II: Data extraction instruments
QARI data extraction instrument

JBI QARI Data Extraction Form for Interpretive & Critical Research

Reviewer Date

Author Year

Journal Record Number

Study Description

Methodology

Method

Phenomena of interest

Setting

Geographical

Cultural

Participants

Data analysis

Authors Conclusions

Comments

Complete Yes No

NOTARI data extraction instrument

JBI Data Extraction for Narrative, Expert opinion & text

Reviewer Date

Author Year Record Number

Study Description

Type of Text:

Those Represented:

Stated Allegiance/ Position:

Setting

Geographical

Cultural

Logic of Argument

Data analysis

Authors Conclusions

Reviewers Comments

Data Extraction Complete Yes No

Conclusions	Illustration from Publication (page number)	Evidence		
		Unequivocal	Credible	Unsupported

Include

Yes

No