Identification and nursing management of dysphagia in individuals with neurological impairment

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Authors' objectives
To determine the evidence for the effectiveness/efficacy of nursing interventions in the recognition of dysphagia. Other objectives included: to discover what is the nursing role in the recognition and management of dysphagia in individuals with neurological impairment, to find out whether the available evidence provides information for a patient and family centred approach to the management and maintenance of oral feeding for patients with swallowing difficulties.

Searching
MEDLINE, CINAHL, PsycLIT, Current Contents, EMBASE, Sociological Abstracts, Science Citation Index, Dissertation Abstracts, Biological Abstracts, the Australasian Medical Index, Healthstar, Sigma Theta Tau Database, NIH Grants Database, the RCNA Directory of Nursing Research, The Incidence and Prevalence Database, the Cochrane Register of Controlled Clinical Trials, DARE and the Cochrane Database of Systematic Reviews were searched from January 1985 to December 1998 (search strategy provided). In addition, the internet was also searched for current research, expert contacts and for resources and information available on dysphagia for the public and health professionals. No language restrictions were reported and both published and unpublished data were included.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs), quasi-experimental studies, observational studies and research using other methodologies, as well as literature reviews, expert opinion and conferences were included.

Specific interventions included in the review
Nursing interventions related to the recognition and nursing assessment of dysphagia, the maintenance of nutrition and hydration through oral feeding, the reduction of the risk of aspiration and those interventions enabling individuals with dysphagia and their caregivers to safely maintain oral nutrition and hydration were included in the review.

Participants included in the review
Individuals over 12mths of age with dysphagia resulting from neurological impairment were included. Studies concerning participants with a medical condition known to include a risk of dysphagia, or adults with signs of dysphagia without any known neurological impairment were also included. Reports concerning specific non-neurological causes of dysphagia were excluded (including dysphagia resulting from cancer, radiotherapy, post-surgery, infectious causes and congenital abnormalities such as cleft palate). Of those studies reported in the review 25/66 related to the care of children and 41/66 to the care of adults.

Outcomes assessed in the review
Outcome measures related to the following were included in the review: early recognition and assessment of those with dysphagia, maintenance of nutrition and hydration through oral intake, the prevention of aspiration and associated morbidity, and the successful safe oral feeding practices by family/and or carers of those with neurogenic dysphagia.

How were decisions on the relevance of primary studies made?
Two reviewers independently assessed articles firstly on the basis of their abstracts and titles. The full articles were then retrieved and checked. Where there was disagreement a third reviewer adjudicated.

Assessment of study quality
Study validity was assessed using criteria developed by the NHS Centre for Reviews and Dissemination, University of York (see Other Publications of Related Interest no.1). The type and strength of the evidence was categorised using the Quality of Evidence Rating, adapted from the U.S. Preventive Services Task Force (see Other Publications of Related.
Interest no.2). Two reviewers independently assessed the validity of studies. Where there was disagreement a third reviewer adjudicated. A panel of experts was used to test the face validity of the instrument.

Data extraction
Data were extracted independently by two reviewers and a third person adjudicated where necessary. Tables presented in the review include the following types of data: bibliographic details, type of study/report, population details, setting, intervention methods, outcomes measures, results, level of evidence, study conclusions.

Methods of synthesis
How were the studies combined?
A narrative synthesis was used.

How were differences between studies investigated?
Some differences were discussed in the narrative description of the studies. Due to the differences between the recognition and management of dysphagia in adults and children, the results were reported separately for these two categories of participants.

Results of the review
Sixty-six studies were included in the review. There were no RCTs.

1. Adult patients (n=4 quasi-experimental, n=14 expert opinion, n=1 correlational study, n=1 methodological, n=2 anthropological, n=2 case studies, n=16 descriptive studies; and n=1 literature reviews).

The majority of the reports were descriptive studies or the opinion of those considered to be experts in this field, and sample sizes were often small. Although the papers provided a diversity of population groups, sample sizes and settings, there was consistency in the recommendation made by experts and findings from the studies were supportive of these recommendations. The evidence suggested that early detection and appropriate management by nurses may prevent untoward outcomes and that nurses have an important role to play in the recognition and management of dysphagia in a variety of settings. There were outlines of a number of very useful strategies, but there was little focus on a structured family or carer education programme.

2. Children (mean age 1.5-13.2yrs) (n=12 expert opinion, n=9 descriptive studies, n=3 case control studies and n=1 comparative study).

The evidence was mainly based on level IV evidence (i.e. descriptive studies and expert opinion). The expert opinion papers were supported by evidence from descriptive and observational studies. Nine of the 13 papers based on research were conducted on children with cerebral palsy. The main areas addressed included a description of the types of swallowing and feeding difficulties, incidence of aspiration, and effects of various positions and textures on the child's ability to swallow. Some of the studies used various objective instruments for assessment and procedures to assess oral motor dysfunction, aspiration, tolerance to food textures and the effect of different positions on swallowing ability and aspiration. However, the findings are hampered by the fact that the studies suffered from a number of methodological weaknesses including: small sample size, lack of randomised controlled design, the use of convenience samples of children who were experiencing severe disabilities and dysphagia prior to participation in the study.

Authors' conclusions
Adults:

It is clear from this review that the nurse has an important role in the recognition and management of dysphagia in a variety of settings. This is of particular importance as the evidence suggests that early detection and appropriate management by nurses may prevent untoward outcomes. The literature also acknowledges the need for staff, patient and carer education. Whilst there are outlines of very useful strategies, there is little focus on a structured family and carer education programme.
Children:

No conclusions presented due to lack of evidence on nursing interventions used in the management of dysphagia in children.

CRD commentary
This is a well-presented report with clearly stated inclusion criteria and systematic methods. The literature search was thorough including both published and unpublished studies, thus limiting the risk of publication bias. Multiple authors independently assessed studies for inclusion, quality and data extraction. Details of the studies were presented both in tables and in the text of the review. A narrative synthesis was used, which was appropriate considering the wide range of study designs and information sources included in the review. No randomised controlled trials were identified and so the findings of the review are dependent on a wide range of different data sources many of which may be subject to bias, e.g. expert opinion, uncontrolled studies etc. In view of this fact, the data and findings of the review should be interpreted cautiously.

Implications of the review for practice and research
Practice: For adult patients, the authors state that nurses have a significant role to play in the early detection and assessment of dysphagia and that the study reports list specific knowledge that should be used by nurses. This information needs to be readily available in all clinical situations to provide clinical staff with information for best practice for this complex clinical problem. This includes risk factors, early detection and monitoring strategies, and safe effective feeding techniques (based on physiological principles). These techniques incorporate modifications in positioning, diet, food placement and presentation, behavioural and environmental factors. In addition, it is essential that nurses ensure that assessment of those at risk is undertaken within 24 hours following admission or change in condition.

For juvenile patients, the authors state that 'nurses should be skilled in implementation of therapeutic strategies for children with dysphagia and monitoring their nutritional and hydration status'. In addition, the authors recommend a family-centred approach to the care of these children.

Research: For adult patients, the authors state that research is lacking in a number of areas. Specifically: the effectiveness of early recognition strategies or nursing assessment techniques for dysphagia; the impact of well-organised multidisciplinary care for patients with neurogenic dysphagia; the impact of nursing interventions aimed at reducing the risk of aspiration and promoting safe oral nutrition and hydration; and the adequacy or effectiveness of family and/or carer education programmes to enable safe feeding of patients with dysphagia in the home setting. In addition, large well-designed trials are required to evaluate education programmes for nursing staff or volunteers.

For juvenile patients, the authors report a number of areas where research is lacking. Specifically: the role of the nurse in identification, assessment and management of dysphagia in all settings; the effectiveness of nursing intervention in the identification and management of dysphagia; the management of dysphagia by carers and parents; the impact of caring for children with dysphagia on carers and family functioning; difficulties faced by nurses and carers/parent in managing children with dysphagia; and the development and evaluation of family-centred programmes to assist carers and families in the management of children with dysphagia.

Bibliographic details

Other publications of related interest
(MD): Williams & Wilkins; 1989.

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.