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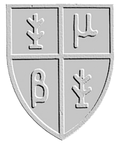

Analysis of the concept of safe meal assistance by nurses among patients with dysphagia

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Abstract

This study aimed to clarify the concept of safe meal assistance by nurses for patients with dysphagia. Databases were searched electronically for articles published from their year of inception to 2022. The inclusion criteria were as follows: (a) written in English or Japanese in a peer-reviewed journal and (b) described safe meal assistance by nurses among patients with dysphagia. Our search was further strengthened by including landmark scholarly publications. The concept analysis was based on Rodgers' method and 15 articles were included in the review. The attributes were assessment, comprehensive judgment of meal-related risks, consideration of the meal assistance method, adjustment of the meal environment, support for the preparation of patients' minds and bodies for eating meals, and support for patients while avoiding the risk of aspiration and choking. Four items were selected as antecedents, such as nurses' status and multi-professional collaboration. There were six items selected for consequences, such as prevention of aspiration pneumonia, maintenance and improvement of nutritional status for sustaining life, and maintenance of function of mind and body. Clarifying the concept of safe meal assistance for patients with dysphagia may enable nurses to promote safe meal assistance.

Keywords: concept analysis, dysphagia, meal assistance, nurse, safety

Introduction

Dysphagia is a dysfunction of the swallowing process involving the oral, pharyngeal, and esophageal stages of the swallowing route (1). Dysphagia is a prevalent symptom caused by degenerative diseases such as stroke, dementia, Parkinson's disease, and Alzheimer's disease and has been reported to affect up to 60% of the institutionalized older people (2, 3). Many swallowing problems go undetected until severe consequences develop, which can lead to malnutrition, pneumonia, and reduced quality of life if left untreated (4). Pneumonia is a common but potentially serious disease that frequently occurs in older people (5). Previous studies have shown that aspiration is the most common cause of

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pneumonia in people over the age of 80 years, and the incidence of pneumonia increases five-fold and mortality doubles as age increases from 65–69 years to > 90 years (6). The mortality rates associated with pneumonia increase significantly with age (7). In Japan, pneumonia is the fifth leading cause of death (8); those aged 65 years and older account for 96% of deaths (9), and 66.8% are due to aspiration with dysphagia (10). More than 50% of older people with dysphagia are diagnosed with silent aspiration, in which solids or liquids are aspirated into their airways without coughing or shortness of breath because of impairments in the safety mechanism of swallowing and cough reflex (11). Aspiration can cause severe outcomes such as respiratory infections, pneumonia, and sudden bolus death in older adults; therefore, prevention is important (12), as well as support for dietary intake with a view toward treating dysphagia.

Meal assistance is a daily task for nurses (13). Generally, meal assistance is considered necessary when eating is difficult because of bedridden or paralyzed upper extremities, inability to recognize food due to declining cognitive function, inability to concentrate on eating, decreased activity tolerance, and easy choking (13). The basis of eating is to eat orally; a rich mealtime leads to a better life. Generally, many people in residential care recognize that mealtimes are “the highlight of the day.” Furthermore, both “enjoying food and being able to eat food” are part of the UK Government's Nutrition Care Plan 2007 (14, 15). In Japan, the importance of "eating" support has also attracted attention by both dental and medical staff, and the importance of building a support system for eating considering the feeding-swallowing function of the elderly has been noted (16, 17, 18). However, knowledge regarding meal assistance related to dysphagia is scattered in various publications, and there is a lack of consensus regarding the exact constituents of safe meal assistance. Therefore, this concept is open to interpretation, with definitions varying for each individual involved in the process. A recent study reported that elderly patients with dysphagia could not receive meal assistance and felt dissatisfied with their lack of support during mealtime (19). Therefore, it is important to clarify the concept of safe meal assistance provided by nurses for patients with dysphagia.

To our knowledge, three studies seeking to elucidate concepts related to meals included a concept analysis of appetite aids in nursing practice (20), nurses’ support for elderly patients’ eating behaviors in predicting post-discharge well-being (21), and healthy eating literacy in adolescence and early adulthood (22). However, the concept of safe meal assistance for patients with dysphagia has not yet been explored. Therefore, clarifying the concept of safe meal assistance by nurses among patients with dysphagia through a conceptual analysis of the existing literature can provide suggestions for nursing practice.

The term of “safety” indicated in the Oxford English Dictionary (23) as "the condition of being protected from danger, harm, or risk." According to a search on Ichushi-web, studies using the term “safety” for meals began in the 1960s in Japan, and studies on food safety, namely, safety for human health from ingestion of hazards in food, dietary therapy effects, and drugs on diet have been reported. Posture adjustment while

eating has been suggested to affect to prevent aspiration pneumonia (24, 25). Kitagawa used Maslow's Hierarchy of Needs to describe the significance of meals in the elderly as the need to satisfy safety needs, maintain health status, eat safely to avoid risks such as aspiration pneumonia and choking, and eat habits that are not threatened by economic circumstances (26). Meal assistance was defined as receiving help from another person to eat (27). Therefore, we focused on safe meal assistance in this study from the perspective that patients can avoid danger, harm, or risk, such as aspiration pneumonia and choking, while eating as well as eating habits that are not threatened by receiving help from nurses. This study aimed to clarify the concept of safe meal assistance from nurses for patients with dysphagia.

Materials and methods

Rodgers' evolutionary method of concept analysis was used to analyze the concept of safe meal assistance (28). This particular method is well-suited to the concept of safe meal assistance because of its dynamic nature. When developing and clarifying the base of knowledge, concepts play an important role in promoting the organization of practice, facilitating communication among communities, and allowing cognitive reminders of phenomena cognitively (29). Rodgers' position that concepts are contextually bound and therefore subject to continuous change as context changes, rather than being characterized by a fixed set of conditions identified through strict rules, allows safe meal assistance to be examined in a new context. Therefore, the authors followed Rodgers' method of concept analysis (29). The aim is not to provide a definitive answer, but to identify a consensus on the concept. Rodgers suggested exploring the contexts within which the concept is used, collecting data from articles on the concept, and identifying its antecedents, attributes, and consequences (29). In this way, the authors adopted Rodgers' dispositional theory of concepts.

Data source

A literature review was conducted using three databases: Ichushi-Web (publication year 1977), Cumulative Index to Nursing and Allied Health Literature (publication year 1981), and PubMed (publication year 1946). The following keywords were used: safety AND meal assistance OR assistance for eating AND dysphagia, swallowing disorders OR deglutition disorders. The inclusion criteria were as follows: (a) written in English or Japanese in a peer-reviewed journal, (b) described safe meal assistance by nurses for patients with dysphagia, and (c) published from the year of inception of the databases to October 2022. According to Rogers (28), many individuals obtain a considerable amount of information about health and healthcare through popular media, and these sources shape their individual concepts. Therefore, Rogers stated that regarding many concepts, especially those commonly used in nursing and healthcare, it may be important to include popular literature as well. Hence, the database was further strengthened by including landmark scholarly publications. Landmark scholarly publications cited in the literature on dysphagia and texts used in nursing education describing safe meal assistance by nurses for patients with dysphagia were eligible for this study.

Data extraction and Analysis

Data extraction was performed using Rodgers' concept analysis method (28). The analysis includes a literature review

Table 1. Identifying antecedents, attributes, consequences, and surrogate terms of the regarding the concept.

Antecedents	Nurses' status
	Organizational environment
	Patient status
	Multi-professional collaboration
Attributes	Assessment
	Comprehensive judgment of meal-related risks
	Consideration of meal assistance method
	Adjustment of the meal environment
	Support for preparation of patients' mind and bodies for eating meals
	Support for patients while avoiding the risk of aspiration and choking
Consequences	Prevention of aspiration pneumonia
	Maintenance and improvement of nutritional status to sustain life
	Maintenance of mind and body function
	Improvement of lifestyle
	Pleasure in daily life
	Enhanced quality of life
Surrogate terms	Relief
	Comfort

to identify the attributes, antecedents, and consequences of the concept. We extracted data from the selected articles and coded them within the initial framework, thereby expanding the subthemes as required. Each coding framework was reviewed for recurring themes, which were placed into categories such as attributes, antecedents, and consequences. The surrogate terms and related concepts were extracted from the analyses. To ensure the plausibility and credibility of the analysis, researchers, including those with experience in qualitative research, examined a series of analysis processes and results.

All analyses were performed using Microsoft Excel (Microsoft Japan, Tokyo, Japan).

Results

The database search yielded 40 articles from Ichushi-Web, four articles from PubMed, and 16 articles from the Cumulative Index to Nursing and Allied Health Literature. After reviewing the titles and abstracts, 28 articles were excluded because they did not focus on safe meal assistance provided by nurses for patients with dysphagia. After a full-text review of 32 articles, 23 further articles were excluded because they did not qualitatively or quantitatively measure safe meal assistance among patients with dysphagia. In addition, six publications that described safe meal assistance by nurses among patients with dysphagia were added. Consequently, 15 articles were analyzed (26, 30-43). Four antecedents, six attributes, six consequences, and two surrogate terms were identified as concepts (Table 1). A model of the nurses'

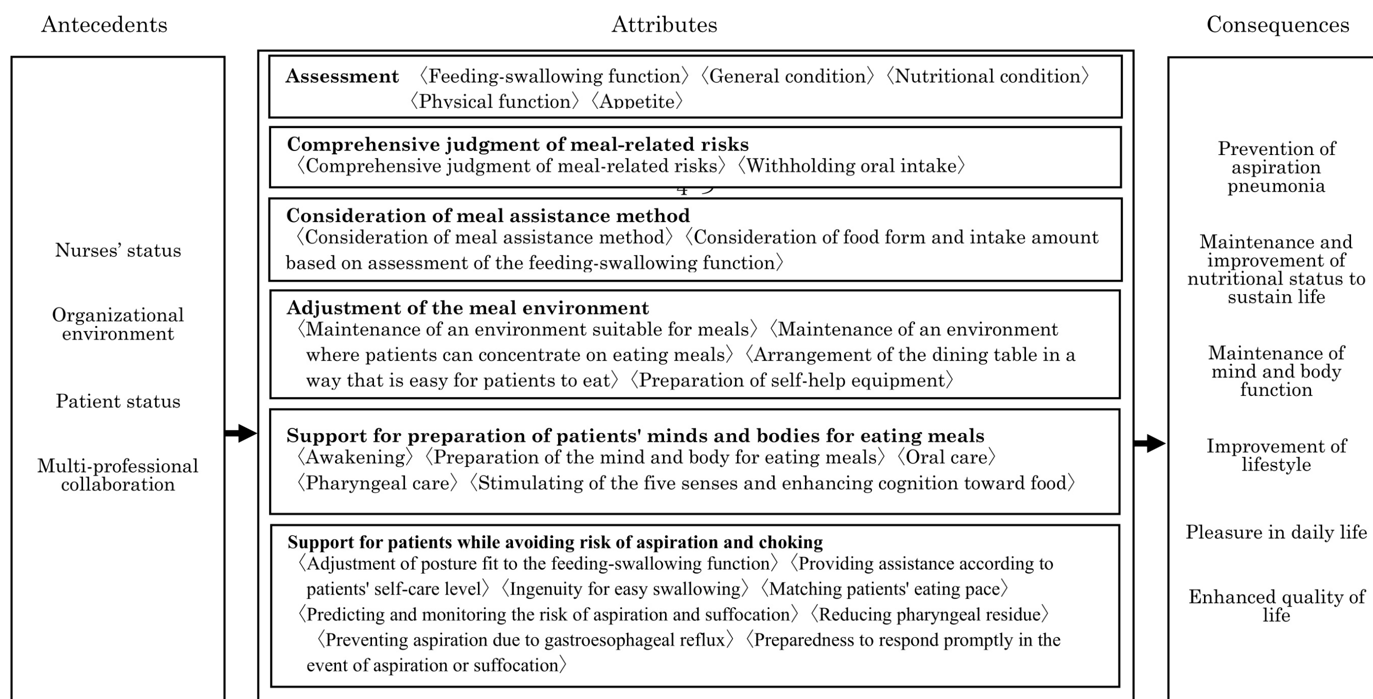

Fig. 1. Model of the concept of safe meal assistance among patients with dysphagia

concept of safe meal assistance for patients with dysphagia is shown in Figure 1. A summary of the attributes, antecedents, and consequences of the concepts reviewed and the associated authors are shown in Appendix 1-3.

Attributes of safe meal assistance

Six attributes were identified: assessment; comprehensive judgment of meal-related risks; consideration of meal assistance method; adjustment of the meal environment; support for preparation of patients' minds and bodies for eating meals; and support for patients while avoiding the risk of aspiration and choking.

1) Assessment

This includes five subcategories: assessment of feeding-swallowing function, general condition, nutritional condition, physical function, and appetite.

2) Comprehensive judgment of meal-related risks

Comprehensive judgment of meal-related risks includes two subcategories: comprehensive judgment of meal-related risks and withholding oral intake.

3) Consideration of meal assistance method

Consideration of meal assistance method includes two subcategories: consideration of the meal assistance method and consideration of food form and intake amount based on the assessment of the feeding-swallowing function.

4) Adjustment of the meal environment

Adjustment of the meal environment included four subcategories: maintenance of an environment suitable for meals, maintenance of an environment where patients can concentrate on eating meals, arrangement of the dining table in a way that is easy for patients to eat, and preparation of self-help equipment.

5) Support for preparation of patients' mind and body for eating meals

Support for the preparation of patients' minds and bodies for eating meals includes five subcategories: awakening, preparation of the mind and

body for eating meals, oral care, pharyngeal care, stimulating the five senses, and enhancing cognition toward food.

6) Support for patients while avoiding risk of aspiration and choking

Support for patients while avoiding the risk of aspiration and choking includes eight subcategories: adjustment of posture fit to the feeding-swallowing function, providing assistance according to patients' self-care level, ingenuity for easy swallowing, matching patients' eating pace, predicting and monitoring the risk of aspiration and suffocation, reducing pharyngeal residue, preventing aspiration due to gastroesophageal reflux, and preparedness to respond promptly in the event of aspiration or suffocation.

Antecedents of safe meal assistance

Four antecedents were identified: nurses' status, organizational environment, patient status, and multi-professional collaboration.

1) Nurses' status

The nurses' status included three subcategories: perceptions, knowledge, and skills regarding meal assistance.

2) Organizational environment

The organizational environment includes three subcategories: education and training systems for nurses regarding meal assistance, available tools for meal assistance, and staffing levels.

3) Patient status

Patient status included two subcategories of their perception of eating: will and desire to eat and perception of receiving meal assistance.

4) Multi-professional collaboration

Multi-professional collaboration had one subcategory: sharing information regarding patients' conditions and planning for meal assistance among medical staff.

Consequences of safe meal assistance

Six consequences were identified: prevention of aspiration pneumonia, maintenance and improvement of nutritional status to sustain life, maintenance of mind and body function, improvement of lifestyle, pleasure in daily life, and enhanced quality of life.

1) Prevention of aspiration pneumonia

This includes one subcategory of prevention of aspiration pneumonia.

2) Maintenance and improvement of nutritional status to sustain life

The maintenance and improvement of nutritional status to sustain life includes three subcategories: increased food intake, intake of nutrients and water necessary for sustaining life, and improvement of nutritional status.

3) Maintenance of function of mind and body

Maintenance of function of the mind and body includes three subcategories: energy gains for performing various activities, maintenance of function of the mind and body, and positive impact on activities of daily living and prognosis.

4) Improvement of lifestyle

Lifestyle improvements include two subcategories: improvement in life behaviors, life rhythms, and maintenance of health status.

5) Pleasure in daily life

Pleasure in daily life includes two subcategories: pleasure from eating food and feeling a sense of satisfaction.

6) Enhanced quality of life

Enhanced quality of life includes two subcategories: satisfying the needs necessary to live and being themselves and enriching daily life.

Proposed definition

Safe meal assistance among patients with dysphagia includes a series of processes including assessment,

comprehensive judgment of meal-related risks, consideration of the meal assistance method, adjustment of the meal environment, support for the preparation of patients' minds and bodies for eating meals, and support for patients while avoiding the risks of aspiration and choking.

Surrogate terms and related concepts

The terms "relief" and "comfort" were used as surrogate terms and related concepts of safety. The Oxford English Dictionary (23) defines the term relief as, "[a] feeling of reassurance and relaxation after anxiety or distress have been removed" and "[a]ssistance given to people in need or difficulty." In psychosociology, relief is described as a subjective concept that seeks to guarantee a sense of safety (44). In the field of nursing, a "relief environment" indicates the guarantee that the patient is not unduly threatened both verbally and physically (44). Meanwhile, the term comfort means, "[a] pleasant state of relaxation and well-being" or "[r]elief from unhappiness or worry" (23). Nawa (45) indicated that comfort is a condition that includes feeling good when using a tool, being relieved from discomfort, peacefulness, safety, well-being, becoming stronger, feeling affection from others, maintaining relationships with family or friends, adaptation, self-control, self-esteem, and decision-making. Nawa also indicated that comfort is a process created by a nurse and patient and the outcome or goal of nursing. This indicates that safety is a prerequisite for relief and comfort. In other words, the terms relief and comfort may include the concept of safety.

Discussion

This study conducted a conceptual analysis of safe meal assistance by nurses for patients with dysphagia using Rodgers' evolutionary cycle. We identify four antecedents, six attributes, six consequences, and two surrogate terms regarding the concept. Among the six attributes, elements such as assessment, comprehensive judgment of meal-related risks, and consideration of meal assistance methods were included.

The present results suggest that the patients' condition, such as feeding-swallowing function, general condition, and physical function, should be assessed, and appropriate assistance methods should be considered to provide safe meal assistance in patients with dysphagia. A previous study has defined mealtime assistance as receiving help from another person while eating (27). It was also indicated as a process of enabling a person to complete the eating process when a meal or snack is served in a care setting (46). It is important to consider aspiration prevention and provide support for safe dietary intake in patients with dysphagia.

Moreover, the present study showed that safe meal assistance includes assistance according to the patients' self-care levels in actual meal situations. Support for eating does not interfere with patient self-care because eating is not only a way to supply nutrients to sustain life and maintain health, but also a psychological and sociocultural activity that enriches life (26). The present results suggest that it is important to clarify how patients can eat as safely and independently as possible, provide support, and assist with eating actions in meal assistance.

Meanwhile, the present results showed that nurses' status, such as perception, knowledge, and skills; organizational environment; patient status; and multi-professional

collaboration were antecedents. It has been pointed out that there are many difficulties related to the need for and best mode of nutrition support that are compounded by a lack of knowledge about nutrition support among medical professionals (14). It has also been reported that improvements in the meal assistance skills of staff engaged in meal assistance may lead to improved energy and protein intake, satisfaction with mealtime care among both hospital in-patients and staff, and a reduced occurrence of adverse events (47). Education for staff engaged in meal assistance leads to increased dietary intake by patients (15). In other words, meal assistance by trained staff can safely help elderly patients, including those who require help with feeding and increase their dietary intake. The National Collaborating Centre for Acute Care (14) pointed out that people at a high risk of developing feeding problems should be cared for by medical professionals who are appropriately skilled and trained and have expert knowledge of nutritional requirements and nutrition support. Nurses should be fully aware of the importance of patients meeting their nutritional needs, understand the likely benefits and risks of oral nutrition support, and take responsibility for ensuring that nutrition support is delivered as safely and effectively as possible (14). Hence, education and training for medical staff, including nurses, are required to enhance perceptions, knowledge, and skills regarding meal assistance. Furthermore, medical professionals should ensure that all individuals who need nutritional support receive coordinated care from a multidisciplinary team (14). However, when this occurs and there are many professionals involved in the care of patients with dysphagia, it is unclear who should take the lead (43). Nurses were expected to coordinate nutritional support with other experts (14).

Generally, it is difficult to attract people's attention to dysphagia as a form of medical care because "eating orally" is a daily activity for the general population (42). Knowledge regarding meal assistance related to dysphagia is scattered across various publications and most research papers are limited to case studies targeting one or two cases. In Japan, the long-term care insurance system was introduced in 2000 and the Japanese public long-term care prevention project was initiated in 2006 (16). The project focused on the prevention of frailty as a biological syndrome associated with a decline in physical status and activities and increased vulnerability to adverse health outcomes (17). It has been suggested that nutrition should be considered in the prevention of frailty (18). For this reason, the importance of providing "eating" support has become important, and the value of building a support system for maintaining the feeding-swallowing functions of the elderly has been highlighted. Interest in dysphagia has increased in the fields of caregiving and nursing, and efforts have been made to address related problems (43). Therefore, identifying a consensus on the concept of safe meal assistance among patients with dysphagia might be helpful in promoting safe meal assistance among patients with dysphagia in the future.

This study had some limitations. The analysis may be limited as it relied solely on published journal articles written in Japanese and English and the interpretations of the authors of this study. Only 17 papers written in Japanese met the inclusion criteria.

Therefore, when considering nursing support for safe meals in patients with dysphagia, it is necessary to collect and summarize the results of these studies. As a next step, further studies should apply the concept of safe meal assistance among patients with dysphagia to nursing practice-related education and research on safe meal assistance among patients with dysphagia residing in medical facilities and nursing homes. Despite these limitations, the present results are novel because no previous study has clarified the concept of safe meal assistance provided by nurses among patients with dysphagia.

In conclusion, clarifying the concept of safe meal assistance among patients with dysphagia may enable nurses to promote safe meal assistance.

Declarations

The authors declare no potential conflicts of interest concerning the research, authorship, or publication of this study.

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嚥下障害を持つ患者に対する 看護師による安全な食事介助の概念分析

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要旨

本研究は嚥下障害を持つ患者に対する看護師による安全な食事介助の概念を明らかにすることを目的とした。データ収集は、3 つの文献検索データベースを用いて行った。分析対象の選定基準として、査読付きのジャーナルへの掲載論文であること、嚥下障害を持つ患者に対する看護師による安全な食事介助に関する説明が含まれていることとし、対象期間を文献検索データベースの出版年から 2022 年までとした。さらに嚥下障害を持つ患者に対する看護師による安全な食事介助に関する記述がある書籍を追加した。Rodgers (2000) の方法により、15 文献が分析対象に選定され、4 つの先行要件、 6 つの属性、 6 つの帰結が抽出された。属性には、アセスメント、食事リスクの総合的な判断、食事介助方法の検討、食事環境の調整、食事に対する患者の心と身体の準備、誤嚥や窒息のリスクを回避する患者支援が抽出された。先行要件には看護師の状況や多職種連携等が含まれ、帰結には誤嚥性肺炎の予防、生命を維持するための栄養状態の維持・改善、心身の機能維持等の構成要素が確認された。本結果は、嚥下障害を持つ患者に対する安全な食事介助の看護支援の標準化の一助となり、安全な食事介助の看護実践の促進につながると考えられた。

キーワード：概念分析、嚥下障害、食事介助、看護師、安全