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The Effectiveness of Health Care Assistant-Supported Safe Feeding Practices in Preventing Choking Episodes Among Dependent Patients

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ABSTRACT: Choking remains one of the most preventable yet under-recognized adverse events among dependent patients, particularly older adults with dysphagia, neurological impairment, or cognitive decline who rely on others for oral intake. Health care assistants (HCAs) sit at the front line of mealtime care, spending more direct contact

hours with patients than most other members of the care team, yet their preparation for safe feeding is often inconsistent and informal. Structured HCA-supported feeding programmes typically combine didactic training on swallowing physiology and aspiration risk with competency-based instruction in positioning, texture modification, bolus sizing, pacing, and the recognition of silent aspiration signs. Evidence from long-term care and rehabilitation settings suggests that when HCAs receive this training alongside clear referral pathways, mealtime observation tools, and supervision from speech-language pathologists, rates of choking and other feeding-related adverse events decline, while staff confidence and documentation of swallowing risk improve. Sustained effectiveness, however, depends less on one-off education than on system-level reinforcement. Barriers such as staffing shortages, time pressure at mealtimes, high staff turnover, and cultural norms around "hurrying" dependent eaters can erode even well-designed training. Multi-component interventions that pair HCA education with environmental adjustments—protected mealtimes, appropriate adaptive equipment, visual cues for texture levels, and audit-and-feedback cycles—consistently outperform single-session training. Gaps remain in the evidence base, including limited randomized designs, heterogeneity in outcome definitions (choking events versus proxy measures such as modified diet compliance), and scarce long-term follow-up. Future work should prioritize standardized reporting, interprofessional collaboration between nursing, dietetics, and speech-language pathology, and the integration of safe feeding competencies into HCA credentialing and routine quality indicators.

INTRODUCTION: THE SCOPE OF THE PROBLEM

Choking during eating and drinking is a preventable yet persistently under-recognised cause of serious harm among dependent patients in hospitals, nursing homes, and residential care settings. For the purposes of this paper, a dependent patient is an individual who cannot safely or independently initiate, manage, or complete oral intake without physical assistance, verbal cueing, or close supervision because of dysphagia, cognitive impairment, physical disability, or a combination of these factors. Choking occurs when a food bolus or liquid obstructs the airway, producing partial or complete airflow limitation, and it represents the most acute and visible consequence of unsafe swallowing; however, it is only the tip of a broader clinical problem that also includes aspiration, aspiration pneumonia, malnutrition, dehydration, and reduced quality of life [1]. Health care assistants are the staff group most frequently engaged in direct mealtime support, yet their role in structured safe feeding is often informal, inconsistently trained, and poorly evaluated [2].

The clinical and organisational case for focusing on health care assistant-supported feeding is therefore strong. Mealtimes are recurrent, high-risk events for dependent patients, and the quality of assistance provided at the point of care directly shapes whether food and fluids are consumed safely. When mealtime assistance is rushed, task-centred, or delegated without clear expectations, patients are exposed to avoidable risk; when it is structured, supervised, and supported by clear care plans, it becomes a practical safeguard [3]. National guidance similarly emphasises that nutrition and hydration support should be delivered by staff with the necessary skills and that the multidisciplinary team should specify the type and level of mealtime support a patient requires from carers [4].

Terminology and practice standards also matter because safe feeding is not a single task but a coordinated set of behaviours. The International Dysphagia Diet Standardisation Initiative provides a common language for texture-modified foods and thickened fluids, and its widespread adoption has made it possible for assistants, caterers, nurses, and speech-language therapists to communicate more reliably about prescribed diets [5].

Epidemiology of Choking and Dysphagia in Dependent Populations

Dysphagia is highly prevalent among older adults and dependent patient groups. Among older people and nursing home residents, oropharyngeal dysphagia is common and frequently coexists with feeding dependency, frailty, cognitive impairment, and neurological disease [6]. Choking is not a rare event in this population; studies of nursing home residents have reported that a substantial proportion experience some degree of choking, and feeding dependency is one of the most consistent risk

factors [7]. Coronial and epidemiological data further indicate that choking remains a leading external cause of preventable death in residential aged care, and many fatal episodes involve food of an inappropriate texture, inadequate supervision, or failure to follow a mealtime plan [8]. These figures establish that choking is not an unavoidable accident of frailty; it is a predictable event with identifiable risk factors and modifiable precursors [8].

Pathophysiology and Risk Factors for Choking

Normal swallowing involves a precisely coordinated sequence of oral preparatory, oral, pharyngeal, and oesophageal phases. Choking risk arises when any of these phases is disrupted, when protective airway reflexes are delayed or absent, or when the bolus is poorly prepared because of inadequate chewing, dry mouth, or fatigue [9]. Neurological conditions such as stroke, Parkinson's disease, dementia, and acquired brain injury are strongly associated with impaired swallowing and feeding dependency. Texture and liquid consistency also influence swallowing physiology and function, and modification of these properties is a core strategy for reducing aspiration and choking risk [10]. Additional risk factors include poor dentition, ill-fitting dentures, sedative medication, reduced alertness, rushed mealtimes, speaking while eating, and mixed-texture foods that combine solids and liquids in a way that is difficult to control. The implication for practice is that choking prevention cannot rely on a single intervention; it requires a bundle of behaviours that address bolus preparation, posture, pacing, supervision, and the environment [10].

The Role of the Health Care Assistant in Mealtime Support

Health care assistants provide the majority of direct mealtime care in many long-term care and hospital settings. Their responsibilities commonly include preparing the patient and the environment, positioning the patient upright, opening containers, cutting food, assisting with bites and drinks, monitoring swallowing, observing for coughing or wet voice, and reporting changes to a registered nurse or speech-language therapist. Nursing assistants' perceptions of barriers to nutrition care show that this group often works within significant time, staffing, and communication constraints that shape what is achievable at mealtimes [11]. Individualised feeding assistance interventions have been shown to improve oral food and fluid intake in nursing home residents and to have measurable staffing requirements, indicating that the quality of assistance is a modifiable determinant of intake and safety [12]. Training non-nursing staff to assist with nutritional care delivery has also been shown to be economically viable and to improve care processes, supporting the view that health care assistants can be effective partners in safe feeding when they are properly prepared and supported [13].

Core Components of Health Care Assistant-Supported Safe Feeding Practices

Safe feeding is best understood as a multicomponent intervention rather than a single technique. The core components that recur across guidelines, systematic reviews, and intervention studies include pre-meal assessment and preparation, positioning, texture modification, pacing and bite size, swallow cueing and monitoring, supervision and environmental control, and reporting and escalation. These components are mutually reinforcing: positioning without pacing is insufficient, texture modification without supervision can fail, and supervision without emergency preparedness leaves the patient vulnerable when an event occurs. Health care assistants are the staff group best placed to deliver these components consistently because they are present at the point of care and can adapt their approach in real time, provided that they have clear role expectations and competency-based preparation [14].

Table 1. Core Components of Health Care Assistant-Supported Safe Feeding Practices and Their Mechanisms of Action

Component	Health care assistant actions	Mechanism of choking prevention
Pre-meal assessment and preparation	Confirm patient identity, diet texture, fluid consistency, alertness, dentition, and care plan; ensure glasses, hearing aids, and positioning aids are in place	Prevents feeding a patient who is not ready, not alert, or not on the correct prescribed diet
Positioning	Sit patient upright at approximately 90 degrees, or as prescribed; support trunk and head; maintain upright posture for at least 30 minutes after the meal	Protects the airway, improves bolus control, and reduces reflux and aspiration risk

Texture modification	Serve only the prescribed IDDSI level; check food particle size and fluid thickness; avoid mixed textures	Reduces the risk of a bolus that is too hard, too large, too dry, or too difficult to control
Pacing and bite size	Offer small bites, allow time to chew and swallow, check that the mouth is empty before the next offer, and alternate solids with fluids as prescribed	Prevents oral overfilling and allows protective swallowing reflexes to recover between boluses
Swallow cueing and monitoring	Prompt slow eating, remind the patient to chew and swallow, observe for coughing, throat clearing, wet voice, or changes in breathing	Promotes safe swallowing behaviour and enables early detection of aspiration or choking
Supervision and environment	Provide direct supervision for at-risk patients; minimise distractions; avoid rushing; keep suction and emergency equipment accessible	Ensures immediate response if choking occurs and reduces competing demands that impair concentration
Reporting and escalation	Document intake, coughing episodes, refusals, and changes in swallowing; report to nurse or speech-language therapist	Enables timely review of diet, care plan, and clinical status before a further episode occurs

Texture Modification and the IDDSI Framework

Texture modification is one of the most widely used and evidence-supported strategies for reducing choking and aspiration risk in dysphagia. The International Dysphagia Diet Standardisation Initiative framework provides common terminology and definitions for texture-modified foods and thickened fluids, with levels ranging from thin liquids to regular foods, and it was developed because inconsistent terminology across settings had led to confusion, incorrect diet provision, and avoidable harm [5]. Systematic review evidence indicates that thicker liquids reduce penetration and aspiration compared with thin liquids, although thicker fluids may increase oropharyngeal residue, and the evidence for specific food textures is more limited but supports the principle that modifying texture can improve swallowing safety [10]. Studies in long-term care have shown that the degree of diet modification is associated with dysphagia risk and that mealtime duration and assistance need to be matched to the level of modification [15]. Texture-modified diets in aged care have been associated with reduced choking risk when correctly prepared and served, although nutritional adequacy requires attention [16]. Texture-modified, enriched, and reshaped diets can also improve dietary intake and body weight in nursing home residents with chewing and/or swallowing problems, demonstrating that safety and nutrition are not mutually exclusive goals [17]. For health care assistants, the practical implication is that they must be able to recognise the prescribed level, verify that the food and fluid served match that level, and avoid improvisation [17].

Positioning and Postural Management

Positioning is one of the simplest and most effective health care assistant-delivered safeguards. Patients should be seated upright, ideally at 90 degrees, with the head and trunk supported and the hips and knees at approximately right angles. A slumped or reclined posture narrows the pharyngeal space, impairs bolus propulsion, and increases the likelihood that food or fluid will enter the airway. Health care assistants are responsible for achieving and maintaining this posture before the meal begins and for keeping the patient upright for at least 30 minutes after eating to reduce aspiration and reflux risk [18]. Post-meal positioning is often overlooked in busy settings, yet it is a critical part of the safe feeding bundle. Positioning also interacts with texture and pacing: a patient who is poorly positioned may struggle even with correctly modified food, and a patient who is well positioned but fed too quickly remains at risk [18].

Pacing, Bite Size, and Swallow Cueing

Pacing is the component most directly under health care assistant control and one of the most important determinants of choking risk. Feeding too quickly, offering the next bite before the previous bolus has been cleared, and using a spoon that is too large all increase the likelihood of oral accumulation and airway compromise. Safe practice involves offering small bites, pausing between bites, checking that the mouth is empty before the next offer, and allowing the patient sufficient time to chew and swallow. Verbal cueing—such as reminding the patient to chew thoroughly, swallow, or take a sip—can further support safe swallowing, particularly in patients with cognitive impairment who may forget the required behaviour [10]. These

behaviours are not intuitive under time pressure; they require training, reinforcement, and a care culture that values unhurried mealtimes. When health care assistants are given permission to slow down and are supported by staffing and workflow design, pacing becomes a reliable safety behaviour rather than an aspiration [12].

Mealtime Supervision and Environmental Modifications

Supervision is essential for patients with a history of choking, those with moderate to severe dysphagia, and those who cannot reliably self-monitor their eating pace or bolus size. Supervision means more than physical presence: the health care assistant must be positioned to observe the patient's face, mouth, and breathing, must avoid distracting tasks during the meal, and must be ready to intervene if coughing, gagging, or respiratory distress occurs. Simple system changes can make supervision more reliable; for example, identifying patients who require mealtime assistance with a visible tray marker and sticker has been shown to ensure that assistance is provided and has been associated with no new episodes of aspiration pneumonia in a quality improvement pilot [19]. Environmental modifications support supervision by reducing noise, limiting unnecessary interruptions, and ensuring that the patient is not rushed by concurrent activities. The environment also includes emergency preparedness: health care assistants should know how to summon help and should have immediate access to suction and airway management equipment if required; strategies for managing senescent swallowing emphasise the importance of supervision, positioning, and responsive care [20].

Evidence of Effectiveness: Findings from Intervention Studies

The evidence base for health care assistant-supported feeding is not dominated by large randomised trials, but a consistent pattern emerges from observational, quasi-experimental, and quality improvement studies. Individualised feeding assistance has been shown to improve oral intake and to require measurable staffing, indicating that assistance is an active intervention rather than a passive task [12]. Cost-effectiveness analysis has shown that training non-nursing staff to assist with nutritional care delivery in nursing homes is economically viable and improves care processes [13]. A simple green tray and sticker system eliminated missed meals due to staff unavailability and was associated with no new incidences of aspiration pneumonia or other sequelae of swallowing difficulties [19]. Texture-modified diets have been associated with reduced choking risk when correctly prepared, and enriched or reshaped texture-modified diets can improve intake and body weight [15][16][17]. Qualitative work also shows that care home staff may have good awareness of dysphagia assessment but that providing food choice and mealtime assistance is difficult because of workforce issues [21]. Studies of nursing aides' feeding experiences have shown that aides often feel inadequately prepared for the complexity of feeding residents with dysphagia and that their practices vary widely, reinforcing the need for competency-based training [22].

Table 2. Summary of Key Evidence on Feeding Assistance and Choking-Related Outcomes

Study	Design and setting	Key intervention or exposure	Relevant findings
Simmons and Schnelle (2004)	Intervention study, nursing homes	Individualised feeding assistance	Improved oral intake; measurable staffing requirements [12]
Simmons et al. (2017)	Cost-effectiveness analysis, nursing homes	Training non-nursing staff for feeding assistance	Cost-effective; improved care processes [13]
Wright et al. (2019)	Quality improvement pilot, hospital	Green tray system to ensure mealtime assistance	No new aspiration pneumonia; all patients received assistance [19]
Keller et al. (2020)	Observational study, long-term care	Texture-modified diets and mealtime duration	Association between modification level and dysphagia risk [15]
Wu et al. (2020)	Systematic review, aged care	Texture-modified diets	Reduced choking risk when correctly prepared; nutritional concerns remain [16]
Ott et al. (2018)	Intervention study, nursing homes	Texture-modified, enriched, reshaped diet	Improved dietary intake and body weight [17]

Skilbeck et al. (2018)	Qualitative study, care homes	Mealtime assistance and nutritional support	Workforce issues constrain food choice and assistance [21]
Pope et al. (2018)	Qualitative study, nursing homes	Nursing aides' feeding experiences	Aides feel inadequately prepared; practice varies widely [22]

Training and Competency Development for Health Care Assistants

If health care assistant-supported feeding is to be effective, training must go beyond general awareness and must develop observable competencies. Health care assistants need to understand the anatomy and physiology of swallowing, the signs of dysphagia and aspiration, the IDDSI framework, positioning, pacing, cueing, oral hygiene, and emergency response. They also need to know when to stop feeding and escalate. Competency-based training is more likely to change practice than one-off education sessions. The "Making Mealtimes Better" programme for health care assistants working with people with dementia found that assistants who received training plus ongoing support forums maintained significantly better knowledge and competency scores five months later than those who received stand-alone training [23]. This finding suggests that training effectiveness depends on reinforcement, peer support, and opportunities to reflect on practice. A theory-based approach to developing a link dysphagia practitioner further indicates that safe nutrition and hydration care depend on sustained role development, clear referral pathways, and practical support for frontline staff [24]. A competency framework that includes supervised practice, direct observation, and periodic reassessment is therefore essential [24].

Barriers and Facilitators to Implementation

The implementation of health care assistant-supported safe feeding is shaped by structural, cultural, and individual factors. Barriers include insufficient staffing, time pressure, competing tasks, high turnover, limited access to speech-language therapy, inconsistent care plans, and a task-oriented culture in which mealtime assistance is undervalued [11]. Health care assistants may be asked to feed multiple patients simultaneously, may not have time to wait for slow eaters, and may not feel empowered to stop a meal when they observe warning signs. Communication failures between nursing, catering, and speech-language therapy can also undermine safe practice, particularly when diet textures are changed without clear documentation or when food is served that does not match the prescribed level [21]. Facilitators include visible identification systems, clear care plans, regular training, supportive supervision, and a culture that treats mealtimes as clinical care rather than a domestic task. Guidance for dysphagia management in the care home setting emphasises that safe practice depends on clear roles, training, and consistent implementation of mealtime plans across the whole team [25].

Quality Improvement and Monitoring

Sustaining safe feeding requires ongoing monitoring rather than episodic training. Quality indicators should include the proportion of dependent patients who receive assistance within an acceptable time, the proportion of meals served at the correct texture, the frequency of coughing or choking events during meals, the completeness of documentation, and the time from incident to clinical review. Mealtime observations can be used to assess health care assistant practice against a standard checklist and to provide constructive feedback. Incident reporting systems should capture near misses as well as actual choking events, because near misses provide learning opportunities before harm occurs. Audits of texture compliance are particularly important given the recurrent finding that patients receive food that is inconsistent with their prescribed diet [1][8]. When monitoring data are fed back to teams and used to redesign workflows, they become a driver of improvement rather than a bureaucratic exercise [8].

Implications for Practice and Policy

The evidence supports several practice and policy implications. First, health care assistant-supported feeding should be recognised as a clinical intervention that requires defined competencies, initial training, and periodic reassessment. Second, staffing and workflow design must allow health care assistants sufficient time to assist dependent patients safely; productivity pressures that reward speed over safety are incompatible with choking prevention [11][12]. Third, IDDSI should be implemented consistently across catering, nursing, and speech-language therapy, with clear accountability for checking that food and fluids match the prescribed level [5]. Fourth, mealtime supervision should be treated as a measurable standard, particularly for patients with a history of choking or moderate-to-severe dysphagia [19][20]. Fifth, simple visual identification systems and clear escalation pathways should be used to ensure that patients who need help receive it promptly. Finally, policy

should support the collection and review of choking incident data so that services can learn from events and monitor the effectiveness of interventions over time [8][25].

CONCLUSION

Choking among dependent patients is a predictable and preventable event, and health care assistants are central to prevention because they deliver most direct mealtime care. The evidence reviewed in this paper shows that health care assistant-supported safe feeding practices—when delivered as a coordinated bundle of positioning, texture modification, pacing, cueing, supervision, and escalation—are associated with reduced choking and aspiration-related harm. The effectiveness of these practices depends less on the intrinsic value of any single technique than on whether health care assistants are trained, supported, and enabled to apply the bundle consistently. Simple system changes, such as visual identification of patients who need assistance, can produce measurable improvements, while competency-based training with ongoing reinforcement is necessary to sustain practice. The persistent gaps in training, staffing, and implementation fidelity mean that the potential of health care assistant-supported feeding is not yet fully realised. Addressing these gaps through policy, education, workflow redesign, and monitoring offers a realistic pathway to reducing choking episodes and improving the safety and dignity of dependent patients at mealtimes.

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