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Multidimensional Swallowing Assessment in Older Adults: A Scoping Review

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Research Article

Keywords: Dysphagia, Swallowing, Older adults, Multidimensional assessment, Clinical assessment, Review

Posted Date: June 11th, 2026

DOI: https://doi.org/10.21203/rs.3.rs-9545727/v1

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Additional Declarations: No competing interests reported.

Abstract

Objective:

To map and synthesise the available scientific evidence on multidimensional swallowing assessment in older adults, identifying key domains, assessment tools, and implications for clinical practice.

Methods:

A scoping review was conducted following the Joanna Briggs Institute (JBI) methodology and reported in accordance with the PRISMA-ScR guidelines. Studies published between 2013 and 2024 in English or Portuguese were included. Searches were performed in PubMed, Scopus, Web of Science, CINAHL, and B-on. Eligibility criteria were defined using the PCC framework: older adults (Population), multidimensional swallowing assessment (Concept), and any healthcare setting (Context). Study selection and data extraction were performed by two independent reviewers.

Results:

Twenty-four studies were included. The findings demonstrate that swallowing assessment in older adults encompasses multiple interrelated domains, including clinical history, cognitive status, cranial nerve function, respiratory status, nutritional condition, and socioeconomic factors. A range of validated tools was identified, with the Eating Assessment Tool (EAT-10), Functional Oral Intake Scale (FOIS), Penetration–Aspiration Scale (PAS), Dysphagia Handicap Index (DHI), and the International Dysphagia Diet Standardisation Initiative (IDDSI) being the most frequently reported. Despite this, substantial heterogeneity was observed in both the domains assessed and the selection of instruments, reflecting variability in clinical practice.

Conclusion:

Swallowing assessment in older adults requires a structured, multidimensional approach integrating clinical, functional, instrumental, and contextual factors. The current variability in assessment practices highlights the need for standardised frameworks to support clinical reasoning, improve diagnostic accuracy, and enhance patient outcomes. The integration of validated tools within comprehensive assessment models may strengthen person-centred care and reduce the risk of adverse events associated with dysphagia.

Introduction

Swallowing is a vital physiological function essential for nutrition, hydration, and overall well-being, playing a central role in maintaining health and quality of life (Dziewas et al., 2021; Doan et al., 2022).

This complex process requires precise coordination between anatomical structures of the oral cavity, pharynx, larynx, and esophagus, under the control of central and peripheral nervous systems. Beyond its biomechanical dimension, swallowing is increasingly recognised as an integrated sensorimotor process influenced by cognitive, functional, and contextual factors (Yvette et al., 2024).

Alterations in any component of the swallowing mechanism may result in dysphagia, defined as difficulty or abnormality in swallowing. Dysphagia is widely reported in both clinical and population-based studies (Chen et al., 2020; Simões et al., 2020) and is particularly prevalent among older adults and individuals with neurological, oncological, or postsurgical conditions (Viñas et al., 2023).

It represents a significant risk factor for adverse outcomes, including malnutrition, dehydration, aspiration, and pneumonia, and is associated with prolonged hospitalisation, increased morbidity, and reduced quality of life (Sun et al., 2023; Casariego et al., 2020).

The clinical and societal impact of dysphagia is especially relevant in ageing populations, where multimorbidity, frailty, and functional decline interact to increase vulnerability. In this context, dysphagia extends beyond a physiological impairment and becomes a multidimensional condition affecting autonomy, mental health, and social participation. Its consequences are not limited to individual health but also impose a significant burden on healthcare systems due to increased resource utilisation and care complexity (Dziewas et al., 2021).

Despite its clinical relevance, swallowing assessment remains underdiagnosed and inconsistently implemented across healthcare settings. Traditional approaches have often focused on observable clinical signs, such as coughing or choking, without systematically integrating underlying physiological, cognitive, nutritional, and contextual factors (Rodrigues et al., 2023). This reductionist perspective may limit diagnostic accuracy and delay the identification of patients at risk, particularly in cases of silent aspiration or atypical clinical presentation.

In response to these limitations, contemporary guidelines and research increasingly advocate for multidimensional approaches to swallowing assessment (Dziewas et al., 2021).

The concept of multidimensional swallowing assessment encompasses not only the biomechanical aspects of swallowing but also cognitive, nutritional, respiratory, social, cultural, and therapeutic variables that may directly or indirectly influence swallowing safety and efficiency. Such approaches emphasise the need for interdisciplinary collaboration and the integration of clinical, instrumental, and patient-reported data.

Recent evidence highlights the growing use of validated assessment tools, including the Eating Assessment Tool (EAT-10), Functional Oral Intake Scale (FOIS), Penetration–Aspiration Scale (PAS), Dysphagia Handicap Index (DHI), and frameworks such as the International Dysphagia Diet Standardisation Initiative (IDDSI), which support standardisation and clinical decision-making (Rodrigues

et al., 2023; Serrano et al., 2024). However, the application of these tools remains heterogeneous, and their integration into coherent assessment models is not yet fully established.

Furthermore, emerging concepts such as sarcopenic dysphagia and the recognition of the role of cognitive and social determinants reinforce the need for comprehensive assessment models that reflect the complexity of real-world clinical practice. The absence of structured frameworks may contribute to variability in assessment practices, inconsistencies in diagnosis, and suboptimal management of dysphagia.

Accordingly, there is a need to systematically map the domains involved in multidimensional swallowing assessment and to identify how these domains are operationalised in clinical practice. A scoping review is particularly suited to this objective, as it allows exploration of the breadth and nature of available evidence, identification of key concepts, and clarification of methodological approaches.

Therefore, this scoping review aims to map the main domains involved in multidimensional swallowing assessment in older adults and to identify the instruments and approaches used in clinical practice.

By synthesising current evidence, this study seeks to support the development of structured, evidence-informed frameworks that enhance diagnostic accuracy, guide clinical decision-making, and promote person-centred care in older adults with dysphagia.

Methods

This scoping review followed the methodology proposed by the Joanna Briggs Institute (JBI) and was reported according to the PRISMA-ScR checklist (Tricco et al., 2018). The research question was structured using the PCC framework:

Population (P)

adults aged 60 years or older

Concept (C)

multidimensional swallowing assessment

Context (C)

any healthcare setting (hospital, community, or institutional care)

Primary studies published in English or Portuguese between 2013 and 2024 addressing clinical, functional, instrumental, or contextual aspects of swallowing assessment in older adults were included. Editorials, studies involving paediatric populations, and studies exclusively focused on therapeutic interventions were excluded.

The search was conducted in February 2025 in the following databases: PubMed, Scopus, Web of Science, CINAHL, and B-on. Search terms included combinations of the descriptors “elderly”, “older adults”, “swallowing”, “dysphagia”, “assessment”, “screening”, “evaluation”, and “multidimensional”, using Boolean operators AND and OR. The strategy was adapted for each database.

All records were exported to Rayyan® for duplicate removal and blind screening by two independent reviewers. Study selection was performed based on title, abstract, and full-text assessment according to predefined inclusion criteria. Disagreements were resolved by consensus.

A data extraction table was developed including the following variables: author, year, study design, country, population, objective, assessment instruments, evaluated domains, and main findings. Data were synthesised narratively with support from tables and visual diagrams.

The search yielded 24 studies meeting the inclusion criteria. Most studies originated from Europe, South America, and Asia, with a predominance of observational and cross-sectional designs. Most populations consisted of institutionalised older adults, hospitalised patients, or individuals receiving home care. A notable methodological heterogeneity was observed in the domains assessed across studies.

The studies analyzed addressed several domains of multidimensional swallowing assessment.

Clinical anamnesis and health history were reported in all studies (100%). Assessment of mental and cognitive status was described in 16 of the 24 studies, particularly in populations with dementia. Cranial nerve and orofacial examination was included in approximately half of the studies. Respiratory function and cervical auscultation were addressed less frequently but showed increasing relevance in recent studies. Nutritional status assessment was described in 21 studies, with the Mini Nutritional Assessment (MNA) being the most frequently used tool. Sarcopenia screening was reported in six studies, commonly using the Strength, Assistance in walking, Rise from a chair, Climb stairs and Falls scale (SARC-F) and tongue strength measurement. Psychosocial, cultural, and socioeconomic factors were mentioned in nine studies.

The most frequently used assessment instruments were the Eating Assessment Tool (EAT-10), reported in 18 studies; the Functional Oral Intake Scale (FOIS), used in 13 studies; the Penetration–Aspiration Scale (PAS), applied in instrumental swallowing assessments in seven studies; the Dysphagia Handicap Index (DHI), reported in four studies; and the International Dysphagia Diet Standardisation Initiative (IDDSI), used in five studies for the evaluation of food consistency and diet modification.

Overall, the findings indicate an increasing trend toward the use of combined assessments integrating clinical, instrumental, and functional approaches. However, significant gaps remain in the standardization of the domains assessed and in the rationale underlying the selection of specific assessment tools.

The following section presents the discussion, in which these findings are critically analysed in light of current clinical practice and the existing literature.

Discussion

The findings of this scoping review demonstrate that swallowing assessment in older adults is a clinically complex and multidimensional process, characterised by substantial variability in domains, instruments, and clinical reasoning approaches across studies.

The diversity of domains identified supports the need for structured, multidimensional frameworks capable of integrating clinical, functional, and contextual data into coherent diagnostic pathways (Dziewas et al., 2021; Rodrigues et al., 2023).

Such approaches are essential to move beyond fragmented assessments and to support consistent, evidence-informed clinical decision-making.

1. Clinical Anamnesis and Medical History

Clinical anamnesis represents a critical diagnostic entry point and a determinant of subsequent clinical decision-making. A structured and comprehensive clinical history allows early identification of risk patterns and guides hypothesis-driven assessment (Farneti et al., 2019).

It should include detailed characterization of swallowing difficulties across consistencies, onset and progression of symptoms, and indicators of airway compromise.

Meal-related behaviours, compensatory strategies, and dietary modifications should be systematically assessed, as they may reflect adaptive or maladaptive responses to dysphagia (Sun et al., 2023). The presence of recurrent respiratory events or unexplained clinical deterioration should raise suspicion of aspiration, particularly silent aspiration (Sun et al., 2023).

Clinical history must also integrate comorbid conditions with known impact on swallowing physiology, including neurological, oncological, and iatrogenic factors (Chen et al., 2020; Haywood et al., 2021).

Pharmacological burden, particularly polypharmacy and drugs affecting neuromuscular coordination or salivation, should be considered due to its potential influence on swallowing function (Mizuno et al., 2021).

Behavioural and nutritional changes, such as food refusal, weight loss, or altered eating patterns, may serve as early indicators of dysphagia, especially in cognitively impaired populations (Simões et al., 2020).

The use of validated self-report instruments enhances sensitivity of detection and complements objective clinical findings (Rodrigues et al., 2023).

Environmental and social determinants of feeding should also be considered, as they directly influence safety, adherence, and nutritional outcomes (Simsek Yurt & Bocek Aker, 2023).

2. Mental Status Assessment

Mental status is a central determinant of swallowing safety and efficiency. Cognitive impairments directly interfere with sensorimotor integration, increasing the risk of delayed swallow initiation, impaired airway protection, and aspiration (Maniaci et al., 2022). Therefore, cognitive screening should be systematically incorporated into swallowing assessment protocols using validated instruments such as the Mini-Mental State Examination or the Montreal Cognitive Assessment.

Evidence indicates that cognitive decline is independently associated with increased dysphagia risk (Maniaci et al., 2022). Behavioural observation during feeding provides essential ecological validity, capturing real-world swallowing performance and identifying clinically relevant signs such as apathy, impulsivity, or inability to follow instructions (Simões et al., 2020).

Patients with psychiatric disorders or intellectual disability require tailored assessment strategies, including caregiver-based screening tools such as the Oropharyngeal Dysphagia Screening Test (Serrano et al., 2024). In addition, affective and motivational states influence nutritional intake and engagement in rehabilitation, reinforcing the importance of interdisciplinary approaches (Rodrigues et al., 2023).

3. Neurological and Cranial Nerve Assessment

Cranial nerve examination constitutes a core component of pathophysiological assessment, given its direct involvement in swallowing biomechanics (Neuwald et al., 2022). Cranial nerves regulate motor control, sensory feedback, and airway protection mechanisms, and their dysfunction results in clinically observable impairments across the oral and pharyngeal phases of swallowing (Wilmskoetter et al., 2020).

Clinical evaluation should combine motor, sensory, and reflex assessments within a functional framework (Printza et al., 2021). Signs such as tongue weakness, impaired palatal elevation, dysphonia, or ineffective cough provide important diagnostic cues (Farneti et al., 2019).

Traditional reliance on isolated reflexes such as the gag reflex is insufficient, as evidence demonstrates limited diagnostic accuracy (Suárez Escudero et al., 2024). These findings reinforce the need to integrate neurological examination with functional observation and instrumental assessment modalities (Maniaci et al., 2022; Santos et al., 2022).

4. Respiratory Function and Cervical Auscultation

Respiratory function is intrinsically coupled with swallowing due to the need for coordinated breathing–swallowing patterns (Dziewas et al., 2021). Disruption of this coordination represents a critical mechanism underlying aspiration, particularly in frail or respiratory-compromised populations.

Clinical assessment must incorporate systematic evaluation of respiratory–swallow coordination, including respiratory patterns, cough effectiveness, and airway protection (Dziewas et al., 2021). Cervical auscultation may provide complementary information when used in conjunction with other clinical indicators, although its standalone diagnostic value remains limited.

5. Nutritional Status and Sarcopenia

Malnutrition is both a driver and an outcome of dysphagia, reflecting a bidirectional relationship that significantly impacts clinical outcomes (Chang et al., 2021).

Comprehensive nutritional assessment must integrate anthropometric, biochemical, and functional indicators to enable accurate risk stratification.

Sarcopenic dysphagia is increasingly recognised as a distinct clinical entity, linking systemic muscle loss to dysfunction of swallowing-related musculature (Mizuno et al., 2021; Portinha et al., 2023).

Objective measures such as tongue pressure provide clinically relevant biomarkers associated with aspiration risk and functional decline (Chang et al., 2021).

6. Instrumental Swallowing Assessment

Instrumental assessment is essential for definitive diagnosis and pathophysiological characterisation of swallowing disorders. Videofluoroscopic swallowing study remains the gold standard for biomechanical analysis, while fiberoptic endoscopic evaluation of swallowing offers real-time, bedside applicability with high clinical utility (Langmore et al., 1988; Dziewas et al., 2021).

The use of standardised scales such as the Penetration–Aspiration Scale enhances interpretability and reproducibility of findings, supporting clinical reasoning and guiding therapeutic decision-making.

7. Subjective Assessment and Quality of Life

Self-report instruments capture patient-centred outcomes and perceived burden, which are often underrepresented in clinical assessments. The Eating Assessment Tool demonstrates high clinical utility as a screening instrument (Casariego et al., 2020), while the Dysphagia Handicap Index provides a multidimensional perspective on the functional, physical, and emotional impact of dysphagia (Sultana et al., 2025).

8. Socioeconomic and Cultural Factors

Socioeconomic and cultural factors act as structural determinants of dysphagia identification and management. Health literacy, caregiver availability, access to healthcare, and cultural food practices

influence both the recognition of swallowing difficulties and adherence to dietary recommendations (Simsek Yurt & Bocek Aker, 2023).

9. Assessment in Special Contexts

Populations with severe cognitive, psychiatric, or communication impairments require adapted and proxy-based assessment strategies to ensure diagnostic accuracy and safety. The use of caregiver-reported tools and observational approaches is essential in these contexts (Serrano et al., 2024).

Based on these findings, a multidimensional conceptual framework is proposed (Fig. 2).

This framework illustrates swallowing assessment as a dynamic and integrative process structured around multiple interrelated domains.

Core clinical domains—including clinical history, cognitive status, neurological function, respiratory coordination, and nutritional status—inform initial risk identification and guide clinical reasoning.

These domains interact with broader socio-contextual factors that influence assessment and management. Clinical decision-making acts as a central integrative node, supporting risk stratification and determining the need for instrumental assessment (e.g., VFSS, FEES) and subjective evaluation (e.g., EAT-10, DHI). The ultimate goal of this multidimensional approach is to support person-centred care, improve diagnostic accuracy, and reduce adverse outcomes associated with dysphagia.

Clinical Implications

The findings of this review have direct implications for clinical practice, particularly in settings involving older adults with increased vulnerability to dysphagia. The identification of multiple interrelated domains reinforces the need to move beyond single-domain assessments toward structured, multidimensional approaches that support comprehensive clinical reasoning.

First, early identification of dysphagia risk should be prioritised through systematic screening that integrates clinical history, cognitive status, and nutritional indicators. The consistent use of validated screening tools, such as the Eating Assessment Tool (EAT-10), in combination with clinical judgement, may enhance sensitivity in detecting early or subclinical swallowing impairment, particularly in populations at risk of silent aspiration.

Second, the integration of multidimensional assessment into routine clinical workflows may improve risk stratification and decision-making. Combining clinical, neurological, respiratory, and nutritional data allows clinicians to identify high-risk profiles and tailor interventions accordingly. This is particularly relevant in older adults with multimorbidity, where dysphagia often results from the interaction of multiple factors rather than a single underlying condition.

Third, instrumental assessment methods, including videofluoroscopic swallowing study and fiberoptic endoscopic evaluation of swallowing, should be incorporated when clinically indicated to confirm diagnosis and characterise swallowing physiology. The appropriate use of these methods, supported by clinical findings, may improve diagnostic accuracy and guide targeted therapeutic strategies.

Fourth, the findings support the need for interdisciplinary collaboration in the assessment and management of dysphagia. Effective care requires coordinated input from nursing, speech and language therapy, medicine, nutrition, and allied health professionals. Multidimensional assessment frameworks may facilitate communication across disciplines and promote shared decision-making.

Fifth, the incorporation of patient-reported outcomes and contextual factors into assessment processes is essential to ensure person-centred care. Instruments assessing quality of life and perceived swallowing difficulties provide valuable insights that complement objective findings and support the development of individualized care plans.

Finally, the current variability in assessment practices highlights the need for the development and implementation of standardised clinical frameworks. Such frameworks should integrate validated tools across domains and provide structured guidance for clinical assessment, thereby enhancing consistency, improving patient safety, and reducing the risk of adverse outcomes associated with dysphagia.

Limitations and Future Perspectives

This review is limited by the predominance of observational and cross-sectional studies, restricting causal inference. Substantial heterogeneity in domains, instruments, and contexts limits comparability and reflects the absence of standardised assessment frameworks. The conceptualisation of multidimensionality was inconsistent, with underrepresentation of respiratory and socio-contextual domains. As a scoping review, no formal quality appraisal was conducted, and findings should be interpreted as exploratory. Additionally, language restrictions may have excluded relevant evidence.

Future research should focus on developing and validating structured multidimensional frameworks and evaluating their impact on clinical outcomes through longitudinal and interventional studies.

Conclusion

This scoping review confirms that swallowing assessment in older adults is a complex and multidimensional process requiring integration of clinical, functional, cognitive, nutritional, and contextual variables. Although the increasing use of validated tools reflects progress toward more comprehensive assessment, considerable methodological heterogeneity persists.

The systematic implementation of multidimensional swallowing assessment may contribute significantly to improving care for older adults and preventing avoidable adverse outcomes associated

with dysphagia.

Declarations

Consent to Participate

Not applicable.

Ethics Approval

Not applicable.

Human Ethics and Consent to Participate Declarations

Not applicable.

Funding

This research received no external funding.

Author Contribution

V.B. conceived and designed the study. V.B. and R.B conducted the literature search, study selection, and data extraction. V.B. performed the data synthesis and drafted the manuscript. R.B. e A.R contributed to the conceptual framework and critically revised the manuscript for important intellectual content. All authors contributed to the interpretation of the data, reviewed the manuscript, and approved the final version.

Data Availability

The datasets generated and/or analysed during the current study are derived from publicly available published studies, which are cited within this article. All data supporting the findings of this study are included in the article. Additional data extraction materials are available from the corresponding author on reasonable request.

References

1. Yvette M, McCoy, Ed M, Bice. Adult Dysphagia Clinical Reasoning and Decision-Making Guide. Volume 1. Plural Publishing; 2024.

2. Chang KV, Wu WT, Chen LR, Wang HI, Wang TG, Han DS. Suboptimal tongue pressure is associated with risk of malnutrition in community-dwelling older individuals. Nutrients. 2021;13(6). https://doi.org/10.3390/nu13061821.
3. Chen S, Cui Y, Ding Y, Sun C, Xing Y, Zhou R, Liu G. Prevalence and risk factors of dysphagia among nursing home residents in eastern China: a cross-sectional study. BMC Geriatr. 2020;20(1). https://doi.org/10.1186/s12877-020-01752-z.
4. Dziewas R, Michou E, Trapl-Grundschober M, Lal A, Arsava EM, Bath PM, Clavé P, Glahn J, Hamdy S, Pownall S, Schindler A, Walshe M, Wirth R, Wright D, Verin E. European Stroke Organisation and European Society for Swallowing Disorders guideline for the diagnosis and treatment of post-stroke dysphagia. Eur Stroke J. 2021;6(3):LXXXIX–CXV. https://doi.org/10.1177/23969873211039721.
5. Dos Santos VB, Saute JAM, Jacinto-Scudeiro LA, Ayres A, Rech RS, de Oliveira AA, Olchik MR. Speech and swallowing characteristics in patients with facioscapulohumeral muscular dystrophy. Arq Neuropsiquiatr. 2022;80(4):368–74. https://doi.org/10.1590/0004-282X-ANP-2021-0034.
6. Farneti D, Fattori B, Bastiani L. Time as a factor during endoscopic assessment of swallowing: Relevance in defining the score and severity of swallowing disorders. Acta Otorhinolaryngol Ital. 2019;39(4):244–9. https://doi.org/10.14639/0392-100X-N0221.
7. Haywood M, Lovell L, Roe J, Clunie G, Sandhu G, Yaghchi A, C. Perioperative instrumental swallowing evaluation in adult airway reconstruction: A retrospective observational cohort study. Clin Otolaryngol. 2021;46(6):1229–36. https://doi.org/10.1111/coa.13820.
8. Jukic Peladic N, Orlandoni P, Di Rosa M, Giulioni G, Bartoloni L, Venturini C. Multidisciplinary Assessment and Individualized Nutritional Management of Dysphagia in Older Outpatients. Nutrients. 2023;15(5). https://doi.org/10.3390/nu15051103.
9. Langmore SE, Kenneth SMA, Olsen N. Fiberoptic endoscopic examination of swallowing safety: A new procedure. Dysphagia. 1988;2(4):216–9. https://doi.org/10.1007/BF02414429.
10. Limpuangthip N, Komin O, Tatiyapongpaiboon T. A simplified method for evaluating swallowing ability and estimating malnutrition risk: A pilot study in older adults. PLoS ONE. 2022;17(2). https://doi.org/10.1371/journal.pone.0263896.
11. Maniaci A, Lechien JR, La Mantia I, Iannella G, Ferlito S, Albanese G, Magliulo G, Pace A, Cammaroto G, Di Mauro P, Vicini C, Cocuzza S. Cognitive Impairment and Mild to Moderate Dysphagia in Elderly Patients: A Retrospective Controlled Study. Ear Nose Throat J. 2022. https://doi.org/10.1177/01455613211054631.
12. Mizuno S, Wakabayashi H, Fujishima I, Kishima M, Itoda M, Yamakawa M, Wada F, Kato R, Furiya Y, Nishioka S, Momosaki R. Construction and Quality Evaluation of the Japanese Sarcopenic Dysphagia Database. J Nutr Health Aging. 2021;25(7):926–32. https://doi.org/10.1007/s12603-021-1646-y.
13. Neuwald Pauletti R, Callegari-Jacques SM, Fornari L, de Moraes JI, Fornari F. Reduced masticatory function predicts gastroesophageal reflux disease and esophageal dysphagia in patients referred

for upper endoscopy: A cross-sectional study. Dig Liver Disease. 2022;54(3):331–5. https://doi.org/10.1016/j.dld.2021.09.016.

14. Portinha S, Sa-Couto P, Matos MA. A preliminary cross-sectional study to investigate the presence of sarcopenic dysphagia in a Portuguese geriatric population. Geriatric Care. 2023;9(1). https://doi.org/10.4081/gc.2023.10972.
15. Rodrigues JP, Mascarenhas A, Félix C, Nascimento D, Correia H, Dias Curto J, Chagas C, Marinho T, R., Mascarenhas Saraiva M. Translation, Cultural Adaptation and Validation of PROMIS GI - Disrupted Swallowing Scale for the Portuguese Language. Acta Med Port. 2023;36(11):706–13. https://doi.org/10.20344/amp.19161.
16. SANTOS VB, dos SAUTE, JACINTO-SCUDEIRO JAM, AYRES LA, A., RECH, R. S., OLIVEIRA, A. A., OLCHIK MR. Speech and swallowing characteristics in patients with facioscapulohumeral muscular dystrophy. Arq Neuropsiquiatr. 2022;80(4):368–74. https://doi.org/10.1590/0004-282x-anp-2021-0034.
17. Mata S, Blánquez B, Serrano F. (2024). The Oropharyngeal Dysphagia Screening Test for Patients and Professionals: Validation in Cognitive Impairment and in Severe Mental Illness. *Dysphagia*. https://doi.org/10.1007/s00455-024-10707-0
18. Printza A, Boziki M, Triaridis S, Kiousi V, Arnaoutoglou M, Constantinidis J, Grigoriadis N. Tongue strength, dysphagia questionnaire, pharyngeal secretions and FEES findings in dysphagia management in amyotrophic lateral sclerosis. Auris Nasus Larynx. 2021;48(4):672–82. https://doi.org/10.1016/j.anl.2020.10.007.
19. Simões ALS, Filho O, A., Hebling E. Signs for Early Detection of Dysphagia in Older Adults with Severe Alzheimer's Disease. J Nutr Health Aging. 2020;24(6):659–64. https://doi.org/10.1007/s12603-020-1382-8.
20. ŞİMŞEK YURT N, BÖCEK AKER E. Dysphagia Frequency and Associated Risk Factors in Geriatric Patients Receiving Home Care. Konuralp Tıp Dergisi. 2023;15(2):236–42. https://doi.org/10.18521/ktd.1230312.
21. Sun F, Qiao J, Huang X, He Z, Dou Z. Characteristics of post-stroke dysphagia: A retrospective study based on FEES. Brain Behav. 2023;13(8). https://doi.org/10.1002/brb3.3161.
22. Suárez Escudero JC, Franco SG, Sánchez IF, Ríos EG, Moreno LM. Model based on clinical characteristics to identify patients with neurogenic oropharyngeal dysphagia. Revista Cuidarte. 2024;15(3). https://doi.org/10.15649/cuidarte.3861.
23. Suárez JC, Illatopa S, Echeverri JL, Zapata S, Bareño J, Sánchez JL. Apraisal of the diagnostic value of the gag reflex in patients with neurogenic oropharyngeal dysphagia. Biomedica. 2024;44(2):155–67. https://doi.org/10.7705/biomedica.7009.
24. Sultana M, Reshad MMH, Mridha MSI. Cross-cultural adaptation and validation of Dysphagia Handicap Index in Bangladesh. J Patient-Reported Outcomes. 2025;9(1). https://doi.org/10.1186/s41687-024-00803-y.

25. Doan TN, Ho WC, Wang LH, Chang FC, Nhu NT, Chou LW. Prevalence and Methods for Assessment of Oropharyngeal Dysphagia in Older Adults: A Systematic Review and Meta-Analysis. J Clin Med. 2022;11(9):2605. https://doi.org/10.3390/jcm11092605.
26. Casariego AV, Silva CS, Rodríguez GL, Gutiérrez FP, Seoane MDCA, Ramos MJR, Ramonde TM. Utility of the eat-10 in the detection of dysphagia in high-risk hospitalisation units at a university hospital: A cross-sectional study. Nutr Hosp. 2020;37(6):1197–200. https://doi.org/10.20960/nh.03233.
27. Wieland MWM, Pilz W, Winkens B, Hoeben A, Willemsen ACH, Kremer B, Baijens LWJ. Multi-Domain Screening: Identification of Patient's Risk Profile Prior to Head-and-Neck Cancer Treatment. Cancers. 2023;15(21). https://doi.org/10.3390/cancers15215254.
28. Wilmskoetter J, Daniels SK, Miller AJ. Cortical and Subcortical Control of Swallowing-Can We Use Information From Lesion Locations to Improve Diagnosis and Treatment for Patients With Stroke? Am J Speech Lang Pathol. 2020;29(2S):1030–43. https://doi.org/10.1044/2019_ajslp-19-00068.
29. Viñas P, Martín-Martínez A, Cera M, Riera SA, Escobar R, Clavé P, Ortega O. Characteristics and Therapeutic Needs of Older Patients with Oropharyngeal Dysphagia Admitted to a General Hospital. J Nutr Health Aging. 2023;27(11):996–1004. https://doi.org/10.1007/s12603-023-1996-8.

Figures

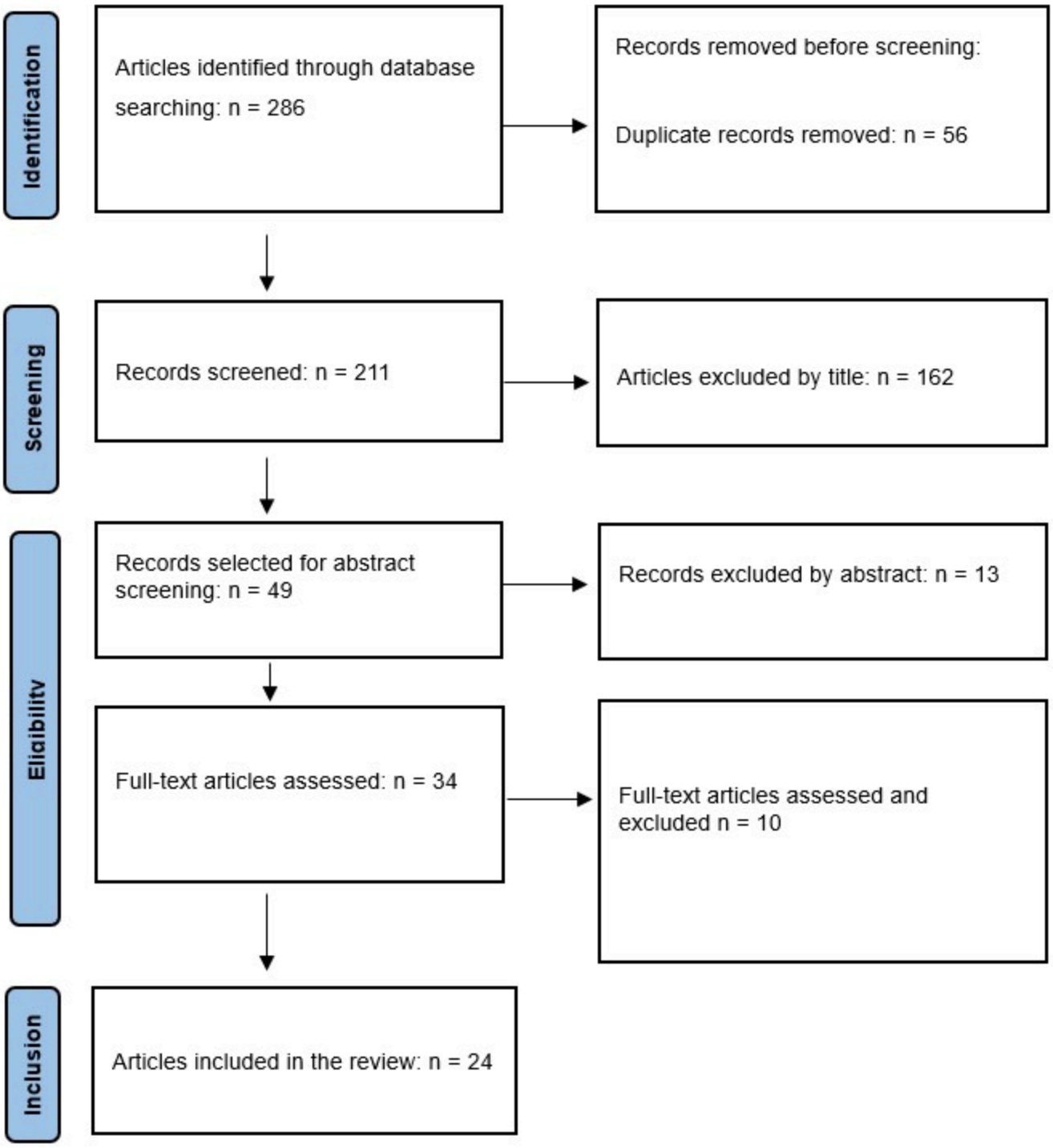


Figure 1

Study selection process flow diagram

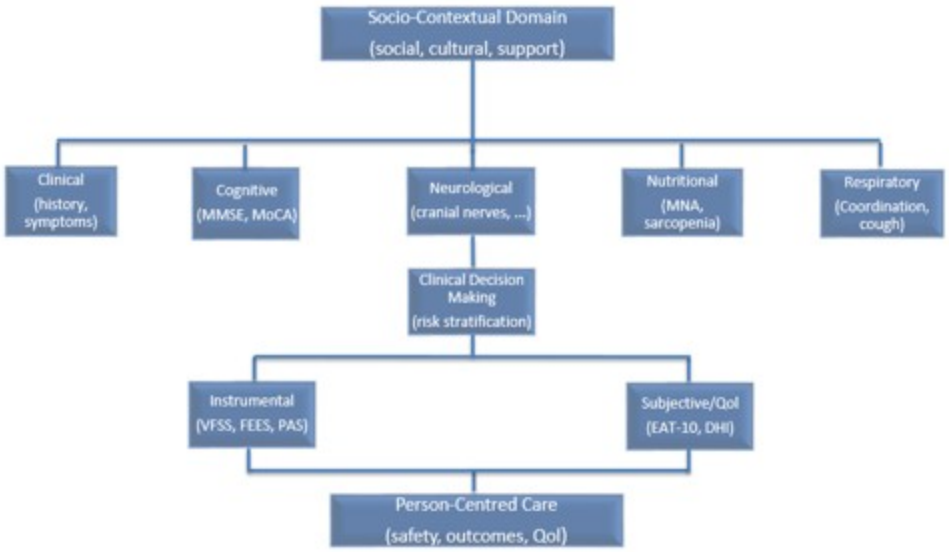


Figure 2

Multidimensional conceptual framework for swallowing assessment in older adults