SWALLOWING DISORDERS IN THE ELDERLY IN POST-ACUTE CARE

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Abstract

This paper presents the results of a quantitative research study aimed at identifying the primary diagnoses associated with swallowing disorders in elderly patients in post-acute care. A secondary objective was to determine whether elderly patients are admitted to post-acute care units with a pre-existing diagnosis of dysphagia. The study population consisted of 168 patients aged 65 years and older who were diagnosed with dysphagia during hospitalization in post-acute care.

The main diagnoses associated with the development of dysphagia in elderly patients in post-acute care were stroke, neurodegenerative diseases, and general decline with loss of independence, often accompanied by decompensation of other underlying conditions. We found that most patients were admitted to post-acute care units without a diagnosis of dysphagia, despite already exhibiting swallowing difficulties. Patients with more severe dysphagia were more likely to have been examined and diagnosed in the acute care unit.

Keywords

dysphagia, elderly, geriatric patients, post-acute care, clinical speech and language pathologist, polymorbidity

Introduction

Dysphagia, or swallowing disorders in the elderly[3], is a broad interdisciplinary topic of concern to both medical and non-medical healthcare professionals, as well as to the general public. Because of its severity and consequences, it is classified as a geriatric syndrome. Dysphagia has a significant impact on morbidity, mortality, and the length of hospitalization in elderly patients (Baijens et al., 2016). It is defined as a disorder of the processing and/or transport of saliva, liquids and semi-solid, or solid food at any stage of passage from the mouth to the stomach. Although swallowing disorders occur across all age groups, they are particularly common among older adults.

In the context of aging, the term *presbyphagia* (sometimes called "aging swallowing") is used. Presbyphagia results from age-related regressive and irreversible anatomical, physiological, and functional changes in swallowing. It is considered a natural part of aging, but its risk lies in the reduction of functional reserves. When illness or health deterioration occurs, swallowing may worsen to the level of clinically significant dysphagia, with all its associated consequences (Dejaeger et al., 2015; Kraft, 2023).

The incidence of dysphagia in the elderly is high. Current studies indicate that approximately 30–40% of seniors living independently and up to 60% of those living in residential facilities suffer from swallowing disorders. Dysphagia is also highly prevalent after stroke (cerebrovascular accident, CVA) (42%) and in neurodegenerative diseases[4], particularly in patients in the late stages of dementia (up to 93%) (Banda et al., 2022; Tedla & Černý, 2018).

The incidence of dysphagia depends on several factors, including age, functional capacity, frailty, polypharmacy, and multimorbidity. A higher incidence is observed among seniors with functional, cognitive, and mobility impairments (Cabré et al., 2010; Serra-Prat et al., 2011; Carrión et al., 2015). Etiologically, dysphagia in older adults is most often neurogenic, resulting from stroke or neurodegenerative diseases, but multimorbidity in advanced age also plays a significant role (Baijens et al., 2016; Ney et al., 2009).

Other geriatric syndromes further contribute to the onset and progression of

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[3] In contemporary scientific literature, the threshold for old age is most frequently set at 65 years (Vágnerová & Topinková, 2020a; Kalvach et al., 2008). This definition is also supported by the American Geriatrics Society.

[4] Neurodegenerative diseases is a collective term for a group of disorders characterized by progressive degeneration and loss of neurons in the human brain, eg. Alzheimer's disease, Parkinson's disease, etc.

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dysphagia. Leira et al. (2023) emphasized the close relationship between malnutrition and dysphagia, as well as between sarcopenia and dysphagia. Dehydration may also contribute to its development. Oda et al. (2021) described a "vicious circle" in which malnutrition, sarcopenia[5], and dehydration are not only risk factors for dysphagia but also consequences of it.

Ott et al. (2017) identified additional, lesser-known causes of swallowing disorders, including diabetes mellitus, exposure to heavy metals, vitamin deficiencies, and both gastroesophageal and extra-esophageal reflux. Dziewas et al. (2007) and Cicala et al. (2018) noted that many medications commonly prescribed to seniors against anxiety and depression may contribute to dysphagia. These include drugs that impair alertness, such as serotonin reuptake inhibitors, benzodiazepines, risperidone, and haloperidol. Studies have also found an increased risk of aspiration pneumonia in patients treated with antipsychotics.

The basic symptoms of swallowing disorders in seniors are similar to those in younger adults and include aspiration, penetration, pooling, drooling, leakage, odynophagia, hoarseness, chest burning, and others (Tedla & Černý, 2018). However, in geriatric patients, certain specific factors may influence the development and severity of these symptoms. Impaired oral intake and the symptoms described above negatively affect health, nutritional status, functional capacity, morbidity, mortality, and ultimately the quality of life of older adults. Complications such as respiratory infections and aspiration bronchopneumonia often require rehospitalization, leading to further frailty, malnutrition, dehydration, and increased dependence on institutional care (Ortega et al., 2014).

Malnutrition and dehydration are particularly serious complications of oropharyngeal dysphagia, contributing to sarcopenia, reduced functionality, impaired immunity, delayed wound healing, increased frailty, and higher morbidity and mortality in this age group (Clavé et al., 2012). Aspiration pneumonia poses a significant risk to elderly patients with dysphagia. Three main factors contribute to its development: (1) oropharyngeal dysphagia with aspiration, (2) geriatric frailty and high overall susceptibility to disease, and (3) poor oral hygiene (Baijens et al., 2016). These elements interact in a vicious circle, with each factor reinforcing the others.

Ultimately, dysphagia also represents a psychological and social burden for older adults, further diminishing their quality of life.

Research

In this article, we focus on selected aspects of extensive research conducted as part of the author's doctoral studies, which aimed to provide a comprehensive picture of swallowing disorders in geriatric patients in the post-acute inpatient setting. The study yielded several noteworthy findings, some of which are presented here. The complete research is described in detail in the dissertation *Swallowing Disorders in the Elderly within the Context of Speech Therapy Intervention* (Horynová, 2024).

Research Objectives and Hypotheses

The aim of this part of the research was to identify the primary diagnoses most commonly associated with swallowing disorders in geriatric patients in post-acute care. A secondary objective was to determine whether these patients were admitted to post-acute inpatient units with an already established diagnosis of dysphagia, or whether their swallowing disorder was first identified during hospitalization in post-acute care.

Based on these objectives, the following hypotheses were formulated.

H1: Most elderly patients admitted to post-acute care already have an established diagnosis of dysphagia from acute care.

Patients are most often transferred to post-acute units from acute care wards. Madhavan et al. (2016) reported that the most common causes of dysphagia in seniors were neurological diseases, particularly stroke (cerebrovascular accident, CVA), neurodegenerative conditions, and presbyphagia. In formulating this hypothesis, we assumed – based on previous findings – that the swallowing difficulties of patients admitted to post-acute care had already manifested during their hospitalization in acute care.

H2: Patients hospitalized in neurology departments are more likely to be diagnosed with dysphagia than patients hospitalized in other departments.

This hypothesis was based both on published findings (Madhavan et al., 2016) and on clinical experience. For example, patients who suffer a stroke are typically first hospitalized in stroke units, where in the Czech Republic a clinical speech and language pathologist (SLP) is a required member of the care team. We aimed to investigate whether and what differences exist in the management of dysphagia between patients transferred from neurology wards and those transferred from other acute care departments.

H3: Patients admitted to post-acute care with a diagnosis of dysphagia have a more severe degree of impairment than those without such a diagnosis from acute care.

This hypothesis was based on the assumption that the severity of dysphagia influences whether physicians in acute care recognize swallowing disorders and refer patients for speech therapy intervention.

Methodology

To achieve the research objectives and given the expected nature of the data, we employed a quantitative one-centre research design with corresponding methods of data collection and analysis.

The primary method of data collection was a detailed clinical speech therapy examination and assessment of swallowing. This was based on an analysis of patients' medical records, a qualitative clinical evaluation of motor speech production with emphasis on orofacial kinetics (mobility and strength of the lips, tongue, and jaw) and phono-respiration (respiration, respiration during phonation, phonation) and an assessment of swallowing across all consistencies. To ensure the quantifiability of the findings, the diagnosis was supplemented with the point scale of the standardized GUSS screening test, translated into Czech (University Hospital Brno, 2024). The GUSS test is primarily intended for patients after stroke (CVA) in the acute phase of illness and is widely used by nurses in stroke units (Václavík et al., 2015; University Hospital Brno, 2024). We chose

[5] Sarcopenia is recognized as a distinct clinical condition and was officially included in the ICD-10 in 2017 under code M62.84. It is characterized by progressive, generalized muscle atrophy, leading to reduced skeletal muscle strength and overall physical performance, and plays a central role in the development of geriatric frailty syndrome (Topinková, 2018).

this tool for our research because of its accessible point-based scoring system and the simplicity of its bedside administration.

The GUSS test provides both a qualitative and quantitative assessment of swallowing and determines the severity of dysphagia. As a screening tool, it typically requires discontinuation if the patient does not achieve full points in a tested item. Its primary purpose is to identify patients at risk of swallowing disorders rather than to conduct a detailed assessment. However, in our research and clinical speech-language examinations, we aimed to analyse dysphagia comprehensively. Therefore, while using the GUSS scoring system, we administered the entire test for each patient, continuing even if full points were not achieved in a preceding part. This approach enabled us to obtain scores for swallowing across all monitored consistencies.

According to the results of the GUSS test and the clinical speech-language assessment, participants were categorized into four groups: presbyphagia, mild dysphagia, moderate dysphagia, and severe dysphagia. In individuals with presbyphagia, clinical findings primarily indicated delayed oral bolus manipulation, delayed swallow initiation, and, in some cases, the need of secondary swallowing. When appropriate compensatory techniques were applied, the risk of aspiration in this group remained minimal.

Among patients with mild dysphagia, swallowing impairments were generally observed in both the oral and pharyngeal phases for specific food consistencies, most frequently for liquids and mixed textures. With the implementation of suitable compensatory strategies, aspiration risk in this group was also considered minimal.

The data were processed statistically using descriptive statistics (measures of central tendency, variability, and frequency), as well as normality testing (Shapiro-Wilk test). Because the data did not follow a normal distribution, nonparametric methods were primarily applied. Specifically, the Mann-Whitney U test and goodness-of-fit tests (e.g., Pearson's chi-square) were used to analyse the data and to test hypotheses.

Anamnestic data were extracted primarily from patients' medical records. Particular attention was given to age, sex, underlying diseases, whether dysphagia had already been diagnosed in acute care, and whether a clinical speech therapist had conducted an assessment in the acute care setting.

The main data collection took place between 2017 and 2020. The study included patients aged 65 years and older who were hospitalized in the post-acute care unit and were diagnosed with presbyphagia or dysphagia during clinical speech therapy examination while in post-acute care.

Results

Research Sample

The main research sample consisted of 168 elderly patients, with the age distribution presented in Table 1. Of these, 80 were men with a mean age of 80 ± 8 years, and 88 were women with a mean age of 83 ± 8 years.

Descriptive characteristics of the research sample				
Gender	**Number**	**Mean age (years)**	**Median age (years)**	**Standard deviation**
Women	88	83	84	8
Men	80	80	80	8

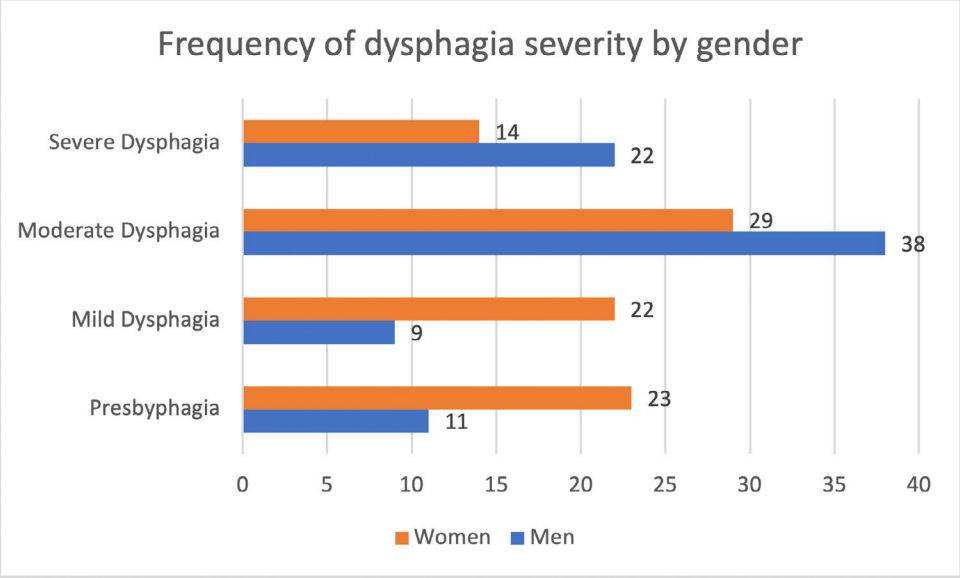
Table 1: ***Descriptive characteristics of the research sample*** *(Horynová, 2024, p. 115)*

Severity of Dysphagia in the Research Sample

The severity of dysphagia in the research sample was assessed using the GUSS test point scale (0–20 points) and clinical speech-therapy examination. The distribution of severity levels is presented in Table 2 and illustrated in Graph 1.

Degree of dysphagia	Women	Women (%)	Men	Men (%)	Total	Total (%)
Presbyphagia	23	26.1	11	13.7	34	20.2
Mild dysphagia	22	25.0	9	11.3	31	18.4
Moderate Dysphagia	29	33.0	38	47.5	67	39.9
Severe Dysphagia	14	15.9	22	27.5	36	21.4

Table 2: ***Severity of dysphagia in patients in the research sample*** *(Horynová, 2024, s. 124)*



Graph 1: ***Frequency of dysphagia severity by gender*** *(Horynová, 2024, p. 125)*

Among patients with GUSS scores of 18–19 points, clinical speech therapy examinations allowed us to distinguish between presbyphagia (20.2%) and mild dysphagia (18.4%). Gender differences were notable: 51.1% of women presented with presbyphagia or mild dysphagia, whereas only 25% of men showed these milder forms. Conversely, 75% of men exhibited moderate to severe dysphagia.

Underlying Diseases Associated with Swallowing Disorders

This part of the research aimed to identify which underlying diseases were associated with swallowing disorders in the elderly patients studied. Information on underlying conditions was obtained primarily from patients' medical records, particularly from the item *"current disease."* For quantification purposes, we coded three main categories of underlying disease: 1) stroke, 2) dementia, and 3) other. In addition, we examined the presence of multimorbidity, defined as the coexistence of two or more underlying diseases.

An overview of underlying diseases in relation to dysphagia, by gender and for the entire research sample, is presented in Table 3.

Underlying disease	Women	Women (%)	Men	Men (%)	Total	Total (%)
Stroke	40	45.5	22	27.5	62	36.9
Dementia	9	10.2	6	7.5	15	8.9
Other	14	15.9	20	25.0	34	20.2
Two diagnoses	23	26.1	29	36.3	52	31.0
Three or more diagnoses	1	1.1	4	5.0	5	3.0

Table 3: ***Underlying diseases related to swallowing disorders***[6] *(Horynová, 2024, p. 116)*

The data show that in 71.6% of women, dysphagia was associated with a single underlying disease. In contrast, the situation was different for men: 40% suffered from two or more underlying conditions that likely contributed to the development of dysphagia. Current research confirms that stroke is a frequent cause of dysphagia, not only in older adults (Baijens et al., 2016). In our sample, stroke as an isolated factor was also highly prevalent, accounting for 36.9% of cases.

The category *"other"* included a wide range of significant diagnoses and conditions, such as general deterioration, loss of independence, decompensated underlying diseases (e.g., diabetes mellitus, chronic obstructive pulmonary disease (COPD)), acute heart failure, renal failure, septic states, respiratory insufficiency, Parkinson's disease, oncological diseases, orthopaedic conditions (e.g., femoral or vertebral fractures), and post-polytrauma states.

Diagnosis of Swallowing Disorders

The aim of this part of the research was to determine whether elderly patients were admitted to the post-acute care department with an already established diagnosis of dysphagia. In connection with this objective, we asked several key questions:

- Did the patient undergo a clinical speech therapy examination of swallowing during hospitalization in the acute care department?

[6] To categorize the diseases contributing to the development of dysphagia in geriatric patients, it was necessary to apply a simplified approach. Only diseases directly related to the onset of dysphagia were considered. In cases of multiple coexisting conditions, individual diagnoses were not differentiated. Frequently, dysphagia was associated with a combination of stroke or neurodegenerative disease and additional comorbidities.

- If so, did this also include an objective assessment of swallowing?
- If the patient was diagnosed with dysphagia but did not undergo a clinical speech therapy examination, who established the diagnosis?
- Some patients were transferred to post-acute care with PEG tube feeding. Had these patients been examined by a clinical speech therapist while still in acute care?

To answer these questions, we analysed patients' medical records, discharge summaries from acute care departments, and reports from consultative speech therapy examinations, as well as records of FEES (fiberoptic endoscopic evaluation of swallowing) and VFSS (videofluoroscopic swallowing study). The results of this analysis are summarized in Table 4.

Swallowing examinations in acute care department	Number of patients	% of total (N = 168)
No swallowing examination performed by an SLP	**113**	**67.3**
Of these: patients without dysphagia	*93*	*55.4*
Of these: patients diagnosed with dysphagia by a physician	*20*	*11.9*
Swallowing examination was performed by an SLP	**37**	**22.0**
Of these: patients without dysphagia	*4*	*2.4*
Of these: patients with dysphagia	*33*	*19.6*
Swallowing examination performed by an SLP + objective assessment[7], with diagnosis of dysphagia	**18**	**10.7**

Table 4: ***Swallowing examinations in acute care departments*** *(Horynová, 2024, p. 118)*

The data obtained are striking. Of the 168 patients in the study, 113 (67.3%) did not undergo a clinical swallowing examination by a speech and language pathologist (SLP) during their stay in acute care. Among these, 20 patients were diagnosed with a swallowing disorder by a physician, while in 93 patients (55.3%) there was no record of dysphagia, eating difficulties, or related issues in their acute care documentation. However, clinical speech therapy examinations conducted after admission to post-acute care confirmed the presence of swallowing disorders in all of these patients. Only 55 patients (32.7%) were examined by an SLP in acute care, and 51 of them were confirmed to have dysphagia.

We also investigated whether the percentage of patients examined by an SLP varied according to their primary diagnosis, which often reflected the acute care department where they had been hospitalized. Table 5 lists the acute care departments from which patients were admitted to post-acute care, together with their underlying diseases. The results show that referrals for swallowing examinations were most frequently made by physicians in neurology, particularly for patients after stroke. The opposite trend was observed in other acute care departments, where only a very small percentage of elderly patients were referred for SLP assessment. For example, among 49 patients hospitalized in internal medicine department, only 3 were examined by an SLP, even though documentation indicated that 9 of these patients (without SLP examination) had undergone PEG tube insertion due to "insufficient oral intake" or carried diagnoses such as "terminal Alzheimer's disease" or "severe dementia." Similarly, of the 16 elderly patients hospitalized in an orthopaedic department, none were referred for a swallowing examination, despite evidence from presbyphagia research that seniors with presbyphagia undergoing, for example, orthopaedic surgery are at considerable risk of developing dysphagia as their health deteriorates.

[7] Objective assessment refers to FEES (fiberoptic endoscopic evaluation of swallowing) or VFSS (videofluoroscopic swallowing study).

Acute care unit	Underlying Diagnosis	SLP examination	No SLP examination
Surgery	Ileus	0	4
Internal Medicine	Deterioration of overall condition	3	46
Neurology	Cerebrovascular accidents	47	21
Neurosurgery	Traumatic brain injury	0	3
Otorhinolaryngology	Oncological diseases	1	2
Pulmonology	Bronchopneumonia, acute exacerbation of COPD, respiratory failure	2	9
Cardiology	Angina pectoris	0	1
Orthopaedics	Pertrochanteric fractures, etc.	0	16
Post-acute Unit	Post-stroke state, deterioration of overall condition	0	6
Spine Surgery	Vertebral fracture	0	2
Rehabilitation	Cerebrovascular accident	2	0
Home	Cerebrovascular accident	0	2
Long-term Intensive Nursing Care	Cerebrovascular accident	0	1
Total		**55**	**113**

Table 5: ***Overview of patients examined/not examined by a clinical SLP in the acute phase of the disease*** *(Horynová, 2024, p. 120)*

Testing Hypotheses

Analysis of the distribution of GUSS test scores using the Shapiro-Wilk normality test showed that the data were not normally distributed in the research sample (SW – W = 0.87; p<0.001). Consequently, nonparametric tests were applied to verify the research hypotheses.

H1: Most elderly patients admitted to post-acute care already have an established diagnosis of dysphagia from acute care.

To test this hypothesis, we analysed absolute and relative frequencies in the patient sample (Table 6). Of the 168 patients, 97 (57.7%) did not have a diagnosed swallowing disorder at the time of transfer to the post-acute care unit, despite having dysphagia symptoms shortly after admission[8]. Based on these findings, Hypothesis H1 cannot be accepted.

H2: *Patients hospitalized in neurology departments are more likely to be diagnosed with dysphagia than patients hospitalized in other departments.*

To test Hypothesis H2, we applied goodness-of-fit tests, supported by an auxiliary contingency table (Table 6).

Dysphagia	Neurology	Other acute care units	Total
Yes	49	22	71
No	18	79	97
Total	67	101	168

Table 6: ***Absolute frequencies of subjects with and without an initial diagnosis of dysphagia and the acute care department from which they were transferred to the post-acute care department*** *(Horynová, 2024, p. 131)*

According to Table 6, 49 of the 67 patients hospitalized in the neurology department were diagnosed with a swallowing disorder. In contrast, among patients hospitalized in other acute care departments, 79 of 101 were not diagnosed with dysphagia, i.e. their medical records contained no documentation indicating the presence of a swallowing disorder.

The results of the goodness-of-fit tests (Table 7) showed a statistically significant difference (p<0.05). Therefore, Hypothesis H2 is accepted: patients hospitalized in neurology departments are more likely to be diagnosed with dysphagia than those hospitalized in other departments.

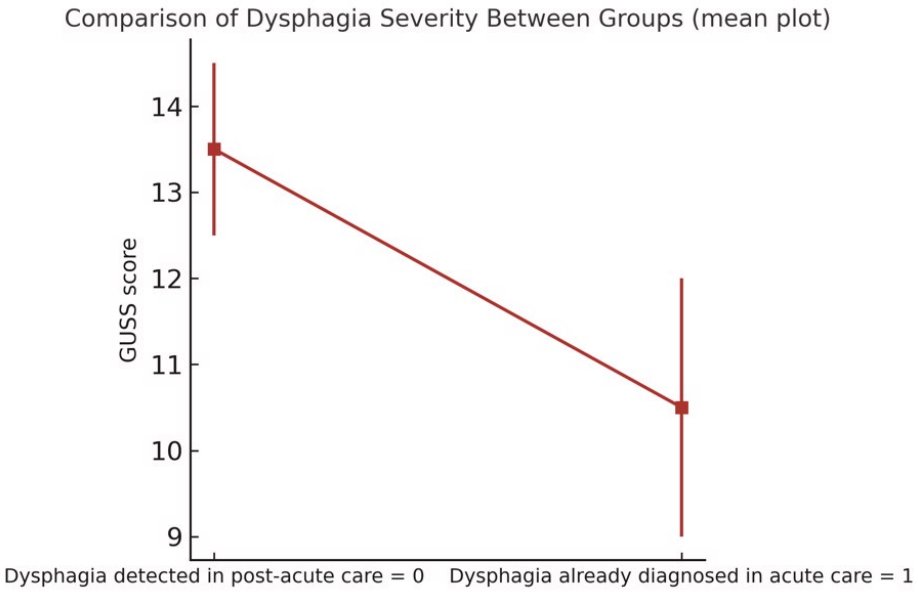
[8] Clinical speech-therapy examination of swallowing was performed in these patients within the first two days after their transfer to the post-acute care unit.

Statistical test	χ2 (critical value)	Df	*p* value
Pearson's chi-square	43.53	1	$p<0.001$
Yates correction χ2	45.01	1	$p<0.001$
Fisher's exact test	–	–	$p<0.001$
Maximum likelihood chi-square	41.45	1	$p<0.001$

Table 7: ***Results of goodness-of-fit tests for Hypothesis H2*** *(Horynová, 2024, p. 132)*

H3: Patients admitted to post-acute care with a diagnosis of dysphagia have a more severe degree of impairment than those without such a diagnosis from acute care.

To test this hypothesis, we compared GUSS test scores between patients with and without a prior diagnosis of dysphagia in acute care. The nonparametric Mann-Whitney U test was applied to verify the two-tailed alternative hypothesis. The results ($U = 2237$; $p = 0.00038$, $p < 0.01$) indicate a significant difference in the severity of swallowing disorders between the two groups. Hypothesis 3 is accepted.



Graph 2: ***Comparison of dysphagia severity between the patients with the diagnosis of dysphagia detected in post-acute care and the patients with dysphagia already diagnosed in acute care (Horynová, 2024, p. 133)***

Graph 2 shows the mean GUSS scores and 95% confidence intervals for two patient groups. Group 0 represents patients in whom dysphagia was first identified in post-acute care, while Group 1 includes patients already diagnosed with dysphagia in acute care. Patients with pre-existing dysphagia demonstrated lower mean GUSS scores, indicating more severe swallowing impairment.

Discussion

Our research focused on swallowing disorders in a group of 168 patients aged 65 and older, all diagnosed with dysphagia and hospitalized in post-acute care units. The research population was relatively balanced in terms of gender and age, with 80 men (average age 80 ± 8 years) and 88 women (average age 83 ± 8 years).

The primary aim of this study was to identify underlying diseases associated with swallowing disorders in the examined population. We found that the most common conditions likely contributing to dysphagia were cerebrovascular accidents, neurodegenerative diseases, general physical deterioration, and loss of self-sufficiency due to decompensation of other chronic conditions such as diabetes mellitus, COPD, and heart or renal failure. These conditions frequently co-occurred, reflecting the polymorbidity often observed in geriatric patients.

These findings align with the fact that most patients admitted to post-acute care units were transferred from neurology and internal medicine departments. Interestingly, in 71.6% of women in the study group, the underlying disease was relatively isolated. In contrast, 40% of men had two or more conditions directly associated with swallowing disorders. These results are consistent with previous studies, which report cerebrovascular accidents and neurodegenerative diseases as the most common causes of dysphagia in older adults (Baijens et al., 2021; Ney et al., 2009).

A secondary objective of the study was to determine whether patients arrived at post-acute care units with an existing diagnosis of dysphagia or whether the swallowing disorder was identified only during hospitalization. Three hypotheses were established in relation to this objective. We found that 67.3% of patients had not been examined by a clinical SLP during their stay in acute care units. Furthermore, 57.7% did not have a diagnosis of dysphagia at the time of transfer, and 11.9% were diagnosed

with dysphagia or eating disorders by a physician. Consequently, Hypothesis H1 could not be accepted.

The frequency of patients examined by a clinical SLP varied depending on the acute care department. Of 68 patients treated in the neurology department, 47 were examined by an SLP. In contrast, only 3 of 49 patients in the internal medicine department received such an examination, and none of the geriatric patients in surgical or orthopaedic departments were referred for speech therapy consultation. Using the goodness-of-fit test, Hypothesis H2 was verified and accepted: patients hospitalized in the neurology clinic were more frequently diagnosed with dysphagia than those treated in other acute care departments.

Additionally, using the nonparametric Mann-Whitney U test to compare GUSS scores and dysphagia diagnoses from acute care hospitalizations, Hypothesis H3 was also verified and accepted. Patients admitted to post-acute care units with a prior dysphagia diagnosis exhibited a more severe degree of dysphagia than those without such a diagnosis. The severity of dysphagia in patients in the acute care unit appears to have strongly influenced both the likelihood of referral for evaluation by a clinical speech-language pathologist and the formal diagnosis of dysphagia during hospitalization at acute care. In contrast, patients presenting with presbyphagia or very mild dysphagia often escaped clinical detection and were frequently discharged to the post-acute care unit without a documented diagnosis.

These findings are crucial for addressing swallowing disorders in older adults. Given the polymorbidity and frailty of geriatric patients, especially at an advanced age, preventing swallowing disorders and mitigating the progression of presbyphagia to dysphagia is essential. All patients included in our study showed symptoms of dysphagia during clinical speech therapy examinations in the post-acute care department; however, most patients – particularly those transferred from acute care departments other than neurology – had no record of swallowing disorders or oral intake difficulties in their transfer reports.

Several factors may explain this discrepancy. It appears that both healthcare professionals and the general public may still lack sufficient awareness regarding dysphagia in older adults and the critical role of clinical speech and language pathologists. Additionally, the limited availability of speech and language pathologists for consultation in certain departments may contribute to underdiagnosis. These findings underscore the need for increased education, awareness, and resource allocation to improve the early detection and management of dysphagia in geriatric populations.

However, certain limitations of this study should be acknowledged. It was conducted at a single post-acute care facility. All participants underwent detailed clinical speech-language assessments and were evaluated using the GUSS test for data quantification. However, most patients did not undergo instrumental assessments (FEES, VFSS) due to both operational constraints and medical conditions that precluded transfer, introducing a potential bias inherent to subjective assessment methods.

Another limitation was the necessary simplification adopted to ensure clarity and to facilitate patient categorization. For patients with two or more concurrent diseases, we did not examine the individual diagnoses forming these combinations. A more detailed analysis would likely have increased the number of patients classified as post-stroke or as having a dementia syndrome.

The study also did not differentiate between types of dysphagia (oral, pharyngeal, or oropharyngeal), nor did it analyse data regarding the specific consistency of problematic foods. These aspects could be addressed in possible future research.

Finally, the findings are specific to geriatric patients aged 65 and older hospitalized in post-acute care units and therefore cannot be generalized to the broader elderly population.

Conclusions and Recommendations for Practice

This study presents the results of a partial investigation aimed at identifying the primary diagnoses associated with swallowing disorders in the elderly in post-acute care, as well as determining whether these patients arrive with a previously diagnosed swallowing disorder. The research produced both expected and surprising findings, which are summarized below, along with specific recommendations for practice.

First and foremost, there is a clear need to raise awareness among healthcare professionals and the general public about presbyphagia, age-related changes in swallowing, and dysphagia in geriatric patients. It is crucial to highlight the serious consequences of dysphagia, including respiratory infections, malnutrition, dehydration, and other health complications.

Raising awareness should also include education on basic lifestyle measures that can help prevent complications related to swallowing disorders. Equally important is ongoing professional education regarding the role of clinical speech and language pathologists in the management of dysphagia, opportunities for interdisciplinary collaboration, and current research findings on care strategies and preventive measures for geriatric patients with swallowing disorders.

High-quality training of future clinical SLPs is essential, as their expertise is critical for establishing trust and effective collaboration with physicians and other healthcare professionals. Strong interdisciplinary cooperation is a key factor in ensuring high-quality care for patients with swallowing disorders, particularly in older adults.

We concur with the recommendations of Umay et al. (2022), who advocate that all hospitalized seniors aged 80 and above, not only those with neurological conditions, should undergo a swallowing screening examination. According to Umay et al. (2022), the same approach should be applied to younger older adults (aged 65 and above) who present with risk factors for dysphagia. Such a strategy would allow early detection of worsening presbyphagia in frail patients, such as those undergoing orthopaedic surgery, in whom dysphagia may develop as a result of weakened health, potentially leading to severe or fatal complications.

Currently, the Czech Republic lacks a standardized treatment protocol for geriatric patients with dysphagia. Establishing such a protocol could incorporate the preventive and management measures outlined above, standardizing care, defining hospitalization algorithms for elderly patients, and reducing the risk of dysphagia and its complications.

The findings presented here are part of a larger study on swallowing disorders in elderly patients in post-acute care. This research has produced additional insights and recommendations, which are detailed in the cited dissertation. The topic of presbyphagia and swallowing disorders in the elderly remains highly relevant and offers significant opportunities for further study, which will continue to shape future care practices.

Literature

BAIJENS, L. W.; CLAVÉ, P.; CRAS, P.; EKBERG, O.; FORSTER, A. et al., 2016. *European Society for Swallowing Disorders – European Union Geriatric Medicine Society white paper: oropharyngeal dysphagia as a geriatric syndrome.* Online. Clinical interventions in aging, vol. 11, pp. 1403-1428. DOI: 10.2147/CIA.S107750. Available from: European Society for Swallowing Disorders - European Union Geriatric Medicine Society white paper: oropharyngeal dysphagia as a geriatric syndrome - PubMed.

BANDA, K. J.; CHU, H.; KANG, L. X.; LIU, D.; PIEN, L. C. et al., 2022. *Prevalence of dysphagia and risk of pneumonia and mortality in acute stroke patients: a meta-analysis.* Online. BMC geriatrics, vol. 22, no. 1, article 420. DOI: 10.1186/s12877-022-02960-5. Available from: Prevalence of dysphagia and risk of pneumonia and mortality in acute stroke patients: a meta-analysis - PubMed.

CABRÉ, M.; SERRA-PRAT, M.; PALOMERA, E.; ALMIRALL, J.; PALLARES, R. et al., 2010. *Prevalence and prognostic implications of dysphagia in elderly patients with pneumonia*. Online. Age and ageing, vol. 39, no. 1, pp. 39-45. DOI: 10.1093/ageing/afp100. Available from: Prevalence and prognostic implications of dysphagia in elderly patients with pneumonia - PubMed.

CARRIÓN, S.; CABRÉ, M.; MONTEIS, R.; ROCA, M.; PALOMERA, E. et al., 2015. *Oropharyngeal dysphagia is a prevalent risk factor for malnutrition in a cohort of older patients admitted with an acute disease to a general hospital.* Online. Clinical nutrition, vol. 34, no. 3, pp. 436-442. DOI: 10.1016/j.clnu.2014.04.014. Available from: Oropharyngeal dysphagia is a prevalent risk factor for malnutrition in a cohort of older patients admitted with an acute disease to a general hospital - Hledat.

CICALA, G.; BARBIERI, M. A.; SPINA, E. & DE LEON, J., 2018. *A comprehensive review of swallowing difficulties and dysphagia associated with antipsychotics in adults.* Online. Expert Review of Clinical Pharmacology, vol. 12, no. 3, pp. 219-234. DOI: 10.1080/17512433.2019.1577134. Available from: A comprehensive review of swallowing difficulties and dysphagia associated with antipsychotics in adults - PubMed.

CLAVÉ, P.; ROFES, L.; CARRIÓN, S.; ORTEGA, O.; CABRÉ, M. et al., 2012. *Pathophysiology, relevance and natural history of oropharyngeal dysphagia among older people*. Online. Nestlé Nutrition Institute Workshop Series, vol. 72, pp. 57-66. DOI: 10.1159/000339986. Available from: Pathophysiology, relevance and natural history of oropharyngeal dysphagia among older people - PubMed.

DEJAEGER, M.; LIESENBORGHS, C. & DEJAEGER, E., 2015. Presbyphagia. Online. In: SPEYER, R. & BOGAARDT, H. (eds.). *Seminars in Dysphagia*. ISBN 978-953-51-4217-1. DOI: 10.5772/60780. Available from: Presbyphagia | IntechOpen.

DZIEWAS, R.; WARNECKE, T.; SCHNABEL, M.; RITTER, M.; NABAVI, D. G. et al., 2007. *Neuroleptic-induced dysphagia: case report and literature review*. Online. Dysphagia, vol. 22, no. 1, pp. 63-67. DOI: 10.1007/s00455 006-9032-9. Available from: Neuroleptic-induced dysphagia: case report and literature review - PubMed.

HORYNOVÁ, J., 2024. *Poruchy polykání u seniorů v následné péči v kontextu logopedické intervence.* Dissertation thesis. Prague: Charles University, Faculty of Education. Supervisor: doc. PaedDr. Jiřina Klenková, Ph.D. Available from: https://dspace.cuni.cz/bitstream/handle/20.500.11956/194179/140122272.pdf?sequence=1&isAllowed=y.

KRAFT, M., 2023. *Presbyfagie versus dysfagie – role logopeda v řešení poruch polykání.* Online. Geriatrie a gerontologie, vol. 12, no. 2, pp. 94-96. Available from: https://www.prolekare.cz/casopisy/geriatrie-gerontologie/2023-2-22/presbyfagie-versus-dysfagie-role-logopeda-v-reseni-poruch-polykani-134893.

LEIRA, J.; MASEDA, A.; LORENZO-LÓPEZ, L.; CIBEIRA, N.; LÓPEZ, R. et al., 2023. *Dysphagia and its association with other health-related risk factors in institutionalized older people: A systematic review.* Online. Archives of Gerontology and Geriatrics, vol. 110, e. 104991, pp. 1-21. DOI: 10.1016/archger.2023.104991. Available from: Dysphagia and its association with other health-related risk factors in institutionalized older people: A systematic review - PubMed.

MADHAVAN, A.; LAGORIO, L. A.; CRARY, M. A.; DAHL, W. J. & CARNABY, G. D., 2016. *Prevalence of and Risk Factors for Dysphagia in the Community Dwelling Elderly: A Systematic Review.* Online. The Journal of nutrition, health & aging, vol. 20, no. 8, pp. 806-815. DOI: 10.1007/s12603-016-0712-3. Prevalence of and Risk Factors for Dysphagia in the Community Dwelling Elderly: A Systematic Review - PubMed.

NEY, D.; WEISS, J.; KIND, A. & ROBBINS, J., 2009. *Senescent Swallowing: Impact, Strategies and Interventions.* Online. Nutrition in Clinical Practice, vol. 24, no. 3, pp. 395-413. DOI: 10.1177/0884533609332005. Available from: Senescent swallowing: impact, strategies, and interventions - PubMed.

ODA, K.; MONTAVRE, J.; PARSONS, J. & BOYD, M., 2021. *Oral Care in Hospital Settings: Breaking the Vicious Circle of Older Adult Deconditioning.* Online. Journal of Gerontological Nursing, vol. 47, no. 6, pp. 7-12. DOI: 10.3928/00989134-20210507-01. Available from: Oral Care in Hospital Settings: Breaking the Vicious Circle of Older Adult Deconditioning - PubMed.

ORTEGA, O.; PARRA, C.; ZARCERO, S.; NART, J.; SAKWINSKA, O. et al., 2014. *Oral health in older patients with oropharyngeal dysphagia.* Online. Age and ageing, vol. 43, no. 1, pp. 132-137. DOI: 10.1093/ageing/aft164. Available from: Oral health in older patients with oropharyngeal dysphagia - PubMed.

OTT, A.; VERONESE, N.; DAMULEVIČIENE, G.; KASIUKIEWICZ, A. & TSIANTOUL, E., 2017. *Oral health and dysphagia in the older population: Report of the 2nd EICA-ESSD EUGMS train the trainers course.* Online. European Geriatric Medicine, vol. 8, no. 2, pp. 191-195. DOI: 10.1016/j.eurger.2017.01.013. Available from: https://www.sciencedirect.com/science/article/abs/pii/S1878764917300347?via%3Dihub.

SERRA-PRAT, M.; HINOJOSA, G.; LÓPEZ, D.; JUAN, M.; FABRÉ, E. et al., 2011. *Prevalence of oropharyngeal dysphagia and impaired safety and efficacy of swallow in independently living older persons.* Online. Journal of the American Geriatrics Society, vol. 59, no. 1, pp. 186-1877. DOI: 10.1111/j.1532-5415.2010.03227.x. Available from: Prevalence of oropharyngeal dysphagia and impaired safety and efficacy of swallow in independently living older persons - PubMed.

TEDLA, M. & ČERNÝ, M., 2018. Definícia základných pojmov a epidemiológia porúch prehĺtania. In TEDLA, M.; ČERNÝ, M. et al. *Poruchy polykání*. 2nd edition. Havlíčkův Brod: Tobiáš, 2018, pp. 18-23. ISBN 978-80-7311-188-5.

UMAY, E.; EYIGOR, S.; BAHAT, G.; HALIL, M. & GIRAY, E., 2022. *Best Practice Recommendations for Geriatric Dysphagia Management with 5Ws and 1H.* Online. Annals of Geriatric Medicine and Research, vol. 26, no. 2, pp. 94-124. DOI: 10.4235/agmr.21.0145. Available from: Best Practice Recommendations for Geriatric Dysphagia Management with 5 Ws and 1H - PubMed.

UNIVERSITY HOSPITAL BRNO, Department of Neurology, Clinical Speech and Language Pathology Centre, 2024. *Screening dysfagie – GUSS*. Online. Brno: University Hospital Brno. Available from: https://www.fnbrno.cz/areal-bohunice/neurologicka-klinika/screening-dysfagie-guss/t4943.

VÁCLAVÍK, D.; SOLNÁ, G.; LASOTOVÁ, N.; LEBEDOVÁ, Z.; HOFMANOVÁ, J. et al., 2015. *Péče o pacienty s dysfagií po cévní mozkové příhodě. Standard léčebného plánu.* Online. Česká a slovenská neurologie, vol. 78/111, no. 6, pp. 721-727. DOI: 10.14735/amcsnn2015721. Available from: https://www.csnn.eu/casopisy/ceska-slovenska-neurologie/2015-6-7/pece-o-pacienty-s-dysfagii-po-cevni-mozkove-prihodestandard-lecebneho-planu-56596.