Swallowing-related Quality of Life in Older Patients with Dysphagia

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Abstract

Background: Dysphagia is now recognized as a common geriatric disorder and associated with significant negative outcomes, not only for their physical health but also for their emotional well-being, social interactions, and overall quality of life. **Aim of the study:** assess swallowing-related quality of life in older patients with dysphagia **Research design:** Cross-sectional descriptive research. **Setting:** The present study was conducted at the ear, nose, and throat outpatient clinic of Zagazig University Hospitals. **Sample** A purposive sample consisted of 150 older adults with dysphagia. **Tools of data collection:** two tools were used in the present study. Tool (I): A structured interview questionnaire, Tool (II) swallowing quality of life questionnaire. **Results** revealed that 59.3% of the studied older adults were aged between 60- <70 years old and 13.3% of the them used dentures. The mean score and standard deviation of total swallow-related quality of life score was 92.04±21.46. Also, 70.7% of the studied older adults had poor level of swallow-related quality of life. While, 2.6% of them had good level. **Conclusion:** Dysphagia among aged people predominated by male sex, illiteracy, rural residence, insufficient income, and comorbidity. Dysphagia has a remarkable effect on declining swallowing-related quality of life. Domains of swallowing- related quality of life were deteriorated especially communication, symptoms frequency and sleep. **Recommendations:** launching screening programs for swallowing difficulties and related oral conditions and replicate the study on a larger group to validate and generalize the results for older adults

Keywords: Dysphagia, Older adults, Swallowing- related quality of life
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Introduction

The natural aging process brings about changes as muscle atrophy and reduced muscle strength that contribute to frailty and dysfunction of swallowing mechanics **(Barron., 2024).** Dysphagia, or difficulty in swallowing, is a significant health concern that affects the ability to move food or liquids safely and effectively from the mouth to the stomach. Dysphagia is broadly categorized into three primary types: oropharyngeal dysphagia, esophageal dysphagia, and functional dysphagia, each with unique characteristics and causes **(Sun-Waterhouse et al., 2021).**

Dysphagia is a multifaceted condition that extends beyond the physical challenges of swallowing to profoundly affect an individual's quality of life. In particular, swallowing-related quality of life refers to how an individual's swallowing difficulties affect their physical, emotional, and social well-being. Dysphagia can influence various aspects of daily living, from dietary choices and social interactions to mental health and overall independence **(Ninfa et al., 2024).**

Swallowing-related quality of Life is a multidimensional concept that encompasses various aspects of an individual's life affected by swallowing difficulties. Understanding these dimensions is essential for developing effective interventions that address not only the physical challenges of dysphagia but also its emotional, social, and functional impacts. The major dimensions of Swal-QoL include physical health, psychological well-being, social relationships, environmental factors, and functional status **(Giray et al., 2023)**.

The gerontological nurse has a critical role in helping elderly patients to improve functional efficiency. Swallowing exercises have been shown to be effective in enhancing swallowing function and improving mouth opening in patients undergoing multimodal dysphagia treatment. The types of swallowing exercises are tongue range-of-motion exercise, the shaker head-lift exercise, the effortful swallow exercise, and chin-down maneuver. Under the guidance of speech-language pathologists, nurses can assist in implementing these exercises to help mitigate dysphagia-related complications **(Banda et al., 2021)**.

Aim of the study:

The current study aims to assess swallowing-related quality of life in older patients with dysphagia.

Research questions:

- What is the swallowing related-quality of life in older patients?
- What is the association between dysphagia and swallowing related-quality of life in older patients?

Subjects and methods:

Research design:

Cross-sectional descriptive research design was utilized to conduct the current study.

Study setting:

The present study was conducted in Ear, Nose, and throat outpatient clinic of Zagazig university hospital.

Subjects:

Following a purposive sampling technique, the study population consisted of 150 older persons aged 60 years or older, of both sexes, who had dysphagia, could communicate, and agreed to participate. Older adults with history of neurological diseases, that affect swallowing function were excluded.

Sample Size Calculation

Lu et al. (2020) found an inverse association between masticatory performance and quality of life; hence the sample size was estimated accordingly. The sample size was calculated to be 150 older individuals using a regression coefficient of -0.09, 80% power, and a 95% confidence level, rounding up to allow for potential dropouts or incomplete data.

Tool for data collection

Tool 1: A structured interview questionnaire with two parts, explained as follows:

Part 1: Demographic Characteristics: included eight questions about the older adult's age, educational level, gender, residence, marital status, current occupation, who they live with, and monthly income.

Part 2: The medical history included three questions about the history of chronic diseases such as hypertension, diabetes, heart disease, anemia, osteoporosis, and arthritis. It also included the pharmaceuticals used to treat health issues and the smoking habit.

Tool II: Swallowing Quality of Life [Swal-QOL] Questionnaire

The SWAL-QOL questionnaire is a comprehensive tool designed to assess the swallowing-related quality of life in individuals with dysphagia. It was adapted by **McHorney et al. (2002)** and consisted of 44 items that cover nine key domains: general burden, eating desire, eating duration, symptoms frequency, fear of eating, food selection, social functioning, mental health, and communication. Two additional domains were included to measure fatigue and sleep.

Scoring System

The scores of each item ranged from one to five and the scores of the 44 items were summed up and swallowing-quality of Life were classified according to the total score gained by the older adults in the test as follows; from 44-<110 indicates poor Swal-QOL, from 110-<165 indicates moderate Swal-QOL, and from166-220 indicates severe Swal-QOL.

Content validity and reliability

Three experts in the field of medical and surgical nursing, gerontological, and community health nursing in Zagazig University. The expert panel revised the Arabic-translated tools for clarity, relevance, comprehensiveness, and ease of understanding. Cronbach's alpha test was used to assess the reliability of the tool items, with a value of 0.954 for total swallowing-related-quality of life.

Field work

- Once approval was granted to proceed with the study, the researchers began organizing a schedule for data collection.

- The researchers visited the outpatient clinics of the Ear, Nose, and Throat (ENT) and the department of Rheumatology and Rehabilitation to familiarize with the workflow, the schedule, and to observe the elderly patients attending these clinics in order to set a convenient schedule for data collection.

- The researchers visited the clinics on scheduled days and waited in the designated areas for interviewing the older adults who met the inclusion criteria. The criteria were confirmed after reviewing the patients' medical records. Each participated older adult was interviewed individually in a private room by the researcher, who introduced herself, explained the study's purpose, and assured the participants that all information provided would remain confidential and would only be used for research purposes.

- The study tool questions were answered privately by each participant. The time required to complete the interview ranged from 25 to 35 minutes, depending on the participant's understanding, cooperation, and cognitive status. The fieldwork was carried out from mid-October 2024 to mid-January 2025; three days per week.

Pilot study

A pilot study constructed 15 older adults, representing (10%) of the total study sample to evaluate the, clarity and feasibility of the translated tools. These participants were included in the final study sample as no modifications were needed.

Administration and ethical consideration:

A formal letter from the postgraduate department at Zagazig University's Faculty of Nursing was submitted to the director of the Outpatient Clinics Hospital as part of the administrative process. The letter was then

forwarded to the manager of the ENT outpatient clinic and the department of rheumatology and rehabilitation for final approval to proceed with the study.

The Research Ethics Committee (REC) of Zagazig University's Faculty of Nursing authorized with the code of M.D.Z.U.N.U.R\212\10\6\2024. The older persons who participated were given a verbal description of the study's objectives, their freedom to refuse participation, and the ability to withdraw from the study at any time without providing a reason. They were informed that their participation was entirely optional, and that all data collected would be kept strictly confidential. Each participant's identity was safeguarded by the use of unique identifying numbers.

Statistical Analysis

The statistical analysis of data was done by using the computer software of Microsoft Excel Program and Statistical Package for Social Science (SPSS) version 25. Data were presented using descriptive statistics in the form of frequencies and percentage for categorical data, the mean (X) and standard deviation (SD) for quantitative data. Qualitative variables were compared using chi square test ($X2$). Quantitative variables were compared using Wilcoxon test. Correlation coefficient test (r) was used to test the correlation between studied variables. Linear regression model was used to examine the predictors of older adults' severity of dysphagia symptoms, oral health status, quality of masticatory function and swallowing related-quality of life. Reliability of the study tools was done using Cronbach's Alpha. Degrees of significance of results were considered as follows; P-value ≥ 0.05 for not significant (NS), P-value < 0.05 for significant (S), and P-value < 0.01 for highly significant (HS).

Results

Table 1 shows that 59.3% of the studied older adults were aged between 60- <70 years old. Also, 52.7% and 66.7% of them were male and married, respectively. Furthermore, 54.7% of them reside at rural areas. Additionally, 40.0% of them were illiterate. Also, 72.0% of them don't work. Furthermore, 66.0% of them don't have sufficient income. In addition, 77.3% of them live with one of the family members.

Table 2 displays that, 88.0% of the studied older adults had chronic diseases and take regular treatments, 51.5% of them had diabetes mellitus. Also, 84.0% of them don't smoke.

Table 3 shows that the highest mean score and standard deviation (6.11±1.99) was for "Communication" which represent (61.1%), while the lowest mean score and standard deviation (2.34±0.99) was for " Eating duration" which represent (23.4%). The mean score and standard deviation of total swallow-related quality of life score was 92.04±21.46.

Figure 1 shows that 70.7% of the studied older adults had poor level of swallow-related quality of life. Also, 26.7% of them had fair level. While, 2.6% of them had good level.

Table 4 displays the presence of a highly significant model, as indicated by the F-test result of 591.67 with a p-value of 0.000. This model explains 95.4% of the variation in total older adults' swallowing related-quality of life score, with an R-squared value of 0.954.

Table (1): Frequency distribution of the studied older adults according to their demographic data **(n=150)**

Demographic data	No.	%
Age (years)		
60-<70	**89**	**59.3**
70-<80	49	32.7
≥80	12	8.0
Mean ± SD 68.76 ± 7.70		
Gender		
Male	**79**	**52.7**
Female	71	47.3
Residence		
Rural	**82**	**54.7**
Urban	68	45.3
Marital status		
Married	**100**	**66.7**
Unmarried	50	33.3
Educational level		
Illiterate	**60**	**40.0**
Read and write	29	19.4
Primary education	23	15.3
Preparatory education	20	13.3
Secondary education	14	9.3
University education/postgraduate studies	4	2.7
Current work status		
Working	42	28.0
Not working	**108**	**72.0**
Monthly income		
Sufficient	35	23.3
Not sufficient	**99**	**66.0**
Sufficient and save	16	10.7
Living condition		
Alone	34	22.7
One of the family members	**116**	**77.3**

SD: Standard deviation.

**Table (2):** Frequency distribution of the studied older adults according to their medical history **(n=150).**

Medical history	No.	%
History from chronic diseases		
Yes	**132**	**88.0**
No	18	12.0
***If yes, what is the disease? (n=132)**		
Hypertension	36	27.3
Anemia	22	16.7
Heart diseases	14	10.6
Diabetes mellitus	68	51.5
Osteoporosis	17	12.9
Arthritis	10	7.6
Take medication for health problems		
Yes	**132**	**88.0**
No	18	12.0
If yes, what is this? (n=132)		
Drug for hypertension	36	27.3
Drug for diabetes mellitus	**68**	**51.5**
Drug for heart diseases	22	16.7
Analgesic	53	35.3
Vitamin & minerals	32	24.2
Drug for arthritis	10	7.6
Smoking		
Yes	24	16.0
No	126	84.0

(*) Responses not mutually exclusive

Table (3): Frequency distribution of the studied older adults according to total swallow-related quality of life **(n=150)**

Swallow-related quality of life domains	No of items	Min	Max	Mean ± SD	Mean (%)	Ranking
General burden	2	2.00	8.00	2.80±1.18	28.0%	10
Eating desire	3	3.00	12.00	5.45±2.19	36.3%	7
Eating duration	2	2.00	7.00	2.34±0.99	23.4%	11
Symptoms Frequency	14	18.00	54.00	34.5±8.61	49.3%	2
Fear of eating	4	4.00	17.00	6.76±2.88	33.8%	9
Food selection	2	2.00	8.00	3.41±1.30	34.1%	8
Social functioning	5	5.00	20.00	9.24±3.29	37.0%	6
Mental health	5	5.00	23.00	10.71±4.09	42.8%	4
Communication	2	2.00	10.00	6.11±1.99	61.1%	1
Fatigue	3	3.00	12.00	5.97±2.30	39.8%	5
Sleep	2	2.00	8.00	4.67±1.47	46.7%	3
Total swallow-related quality of life score	44	52.00	169.00	92.04±21.46		41.8%

SD: Standard deviation.
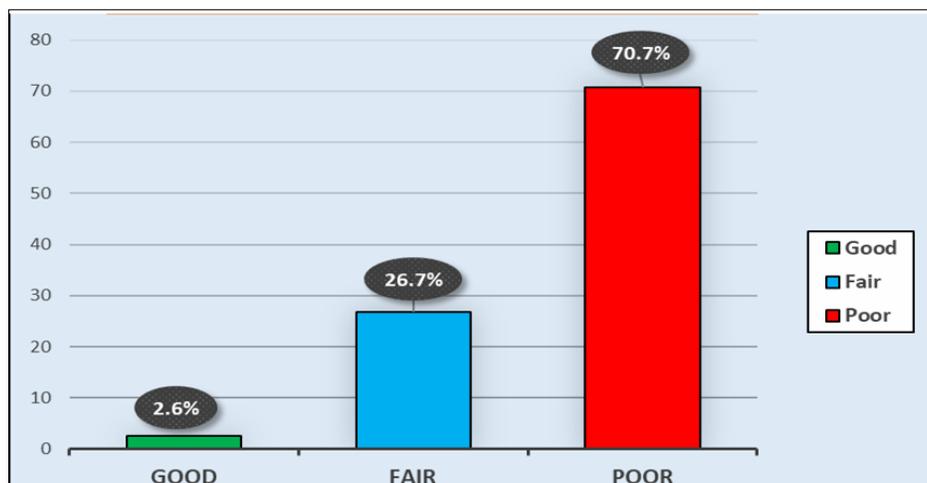
Figure (1): Total swallowing-related quality of life in older patients**(n=150)**

Table (4): Multiple linear regression model examining the predictors of older adults' swallowing related-quality of life **(n=150)**.

Items	Unstandardized Coefficients		Standardized Coefficients	t	P. value	95% Confidence interval	
	B	Std. Error	βeta			Lower	Upper
(Constant)	346.513	13.202		26.248	.000**	320.419	372.607
Natural condition of teeth (Completely lost)	-35.015-	3.102	-.614-	-11.29-	.000	-41.146-	-28.885-
Use dentures	-37.975-	3.189	-.604-	-11.91-	.000	-44.277-	-31.672-
Model Summary							
Model	**R**		**R^2**	**Adjusted R^2**		**Std. Error of the Estimate**	
1	0.977		0.954	0.952		4.70313	
ANOVA							
Model	**Df.**			**F**		**P. value**	
Regression	4			591.67		0.000**	

Dependent Variable: Total swallowing related-quality of life score. **Variables entered and excluded**: Age, gender, residence, marital status, education level, Current work status, income, living condition, history from chronic diseases, smoking and total quality of masticatory function score. **Notes: B**=Unstandardized Coefficients.**Beta**=Standardized Coefficients. **t:** Independent t-test. **R^2** = Coefficient of multiple.* $p < 0.05$. ** $p < 0.01$.

Discussion

Dysphagia is a prevalent and significant health concern among the older adult, with far-reaching implications for their overall health, functional status, and quality of life **(De Sire et al., 2022)**. In terms of sex of the studied older adults in the current study, there was a male preponderance. This sex dominance might be attributed to the demographic distribution in the community and the greater tendency among men to seek healthcare services. Likewise, male preponderance was reported by **Yu et al, (2022)** in China where more than half of older adults were male. On the contrary, **El-Gilany et al. (2021)** in Egypt found a balanced gender distribution among community-dwelling older adults.

Concerning the comorbidities reported by older adults, most of them had chronic diseases, most commonly diabetes mellitus, and hypertension, followed by anemia, osteoporosis, heart diseases and arthritis. This result might be attributed to the physiological changes associated with aging, which increase the risk of developing chronic conditions, particularly those related to the cardiovascular and metabolic systems. In the same line, these findings are supported by **Nassar et al. (2023)** in Egypt were found that most of participants had chronic diseases such as diabetes mellitus, hypertension, and liver diseases.

The current study found that over two-third of older adults had poor swallow-related quality of life. Such result might be due to that dysphagia often results in increased dependency, psychological distress, and social isolation due to fear of choking or embarrassment during meals, ultimately leading to a decline in the individual's psychosocial well-being and health-related quality of life. This aligns with **Smith et al. (2023)** who conducted study in the United Kingdom and indicated that three-quarter of older adults with dysphagia experienced a significant decline in quality of life, including emotional distress and social withdrawal. Additionally, **Park et al. (2024)** in a United States reported that two-thirds of participants had significantly reduced quality of life.

Fear of eating and avoiding dining out emerged as a significant theme, with many participants expressing anxiety and social strain related to meal time management, suggesting the emotional toll of swallowing impairment on patient. This aligns with **Bartlett et al. (2025)** in the United States where more than half of individuals with dysphagia avoided certain foods due to fear of choking. In the same line, **Asefa et al. (2025)** in Ethiopia, where found that more than three quarter of older adults with dysphagia avoided community meals, reporting dietary monotony and social withdrawal as consequences of swallowing difficulties. Swallowing issues hindered their ability to maintain a social life. In the same stream, **Park et al. (2024)** in a United States reported that more than half of food-insecure adults experienced social isolation, and nearly two-thirds reported feelings of loneliness.

The total swallow-related quality of life in the study reflects moderate-to-high impairment across the various domains. The domains most significantly affecting quality of life included communication, mental health, and symptom frequency. These findings are consistent with **Shune et al, (2020)**, which have found that swallowing difficulties significantly impact multiple aspects of daily life, including social interactions, emotional well-being, and physical health**.**

Finally, the current study concluded that complete tooth loss, denture use, higher dysphagia severity, and lower oral health status were significant negative predictors of swallowing-related quality of life. These findings underline the cumulative burden of oral dysfunctions on the psychosocial and functional aspects of life in older adults. **Lu et al. (2020)** similarly reported that impaired oral conditions substantially lowered the quality-of-life scores in geriatric populations with swallowing difficulties. Moreover, **Zeng et al. (2024)** noted that nutritional interventions and swallowing therapy could mediate some of these negative impacts, suggesting a potential area for future interventional research.

Conclusion and recommendations

Dysphagia among aged people predominated by male sex, illiteracy, rural residence, insufficient income, and comorbidity. It is important to highlight that dysphagia have a remarkable effect on declining swallowing-related quality of life. Domains of swallowing- related quality of life were deteriorated especially

communication, symptoms frequency and sleep. Based on the study findings, there is need for launching regular oral health screening programs for older adults as part of their routine medical evaluation for early identification and management of swallowing difficulties and related oral conditions. It is necessary to implement patient centered interventions such as customized dentures and dietary adjustments to improve masticatory efficiency and swallowing-related quality of life and replicate the study across different healthcare settings and geographic regions to validate and generalize the results for older adults.

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Declaration of Conflicting Interests

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