

## Nutritional Statuses and Quality of Life Among Elderly Patients with Dysphagia at Sohag University Hospital

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### Abstract

**Background:** Dysphagia had high frequency in older people and its associated complications, which have a direct impact on nutritional status and quality of life. **Aim of the study:** To assess nutritional status and quality of life of elderly patients with dysphagia. **Design of the study:** A descriptive research design was used. **Setting:** This study was conducted at gastroenterology and neurologic outpatient clinics at Sohag University hospital. **Sample:** The sample composed of 220 elderly patients. **Tools:** Three tools were used: **Tool (I)** include two parts: **Part (1):** Demographic data of elderly patients. **Part (2):** Health history of elderly patients. **Tool (II):** Short Form Mini-Nutritional Assessment (MNA) questionnaire. **Tool (III):** Swallowing quality of life questionnaire. **Results:** Mean age of studied elderly was  $73.59 \pm 7.41$ . Most of elderly patients with dysphagia had nutritional disturbance and moderate SWAL-QoL mean score. **Conclusion:** The majority of studied elderly patients with dysphagia had nutritional disturbance and moderate quality of life. There was statistically significance positive correlation between Mini Nutritional Assessment and swallowing quality of life. **Recommendation:** Implementing an educational program about meal modifications to improve nutritional status among elderly patients with dysphagia.

**Keywords:** Dysphagia, Elderly Patients, Nutritional Status & Quality of Life.

### Introduction

As a result of improved living standards and medical advancements, aging has become a major issue in modern society worldwide. The number of people over 65 has topped 500 million globally as of 2022, and estimates suggest that number will increase to 1.2 billion by 2050 (Hu et al., 2024). Older adults defined people aged 60 and over (Mushtaq & Khan, 2024).

Two main types of dysphagia can be distinguished: oropharyngeal, which occurs between the upper esophageal sphincter and the oral cavity, and esophageal, which occurs between the upper and lower esophageal sphincters. Dysphagia is defined as the difficulty or inability to swallow (Roberts et al., 2024).

Geriatric patients may experience common swallowing difficulties such as pain during swallowing, difficulty chewing, a sensation of food stuck in the throat, difficulty controlling boluses, drooling, the need for multiple swallows for each bite (piecemeal deglutition), coughing right after each swallow, dyspnea during swallowing, and heartburn (Varshini et al., 2024).

The gradual changes in the swallowing mechanism of aging people, known as presbyphagia, in conjunction with neurological and neurodegenerative disorders like Parkinson's disease, dementia, or stroke, structural changes like those brought on by head and

neck cancer, surgery, or trauma, and muscular conditions like sarcopenia and achalasia, are often the cause of dysphagia in older adults (Roberts et al., 2024).

Malnutrition and dysphagia are closely related; research shows that the prevalence of dysphagia in different patient cohorts ranges from 25 to 45%. People who have dysphagia frequently have trouble eating correctly, which reduces their intake of nutrients and may result in deficiencies in vital nutrients (Karunaratne et al., 2024).

"A person's perception of their position in life in relation to their goals, expectations, standards, and concerns, as well as the culture and value systems in which they live," is how the World Health Organization defines quality of life. A person's physical and mental well-being, degree of independence, and social connections all have a complex impact on this wide-ranging notion. Overall quality of life (QoL), social life, psychological health, and physical abilities are all negatively impacted by dysphagia (Printza et al., 2020).

Over time, malnutrition develops from decreased food intake brought on by the development of dysphagia. A consequence of dysphagia, malnutrition can raise the risk of morbidity, frailty, increased strain on healthcare systems, and extended hospital admissions. Malnutrition is also a significant predictor of higher mortality and a reduction in daily

life activities. Thus, dysphagia could be a contributing factor to older persons' overall health decrease (Oliveira et al., 2023).

In addition to enhancing elderly welfare through effective nutritional care and implementing nutritional care based on nutritional scores, gerontological nurses can play a significant role in preventing malnutrition by identifying the nutritional status or malnutritional issues of the elderly. Elderly patients who have trouble swallowing or eating are supported by nurses using a variety of techniques. altered food and drink compositions, monitored mealtimes, and a ban on background noise or distracting activities like music or television (Engh & Speyer, 2022).

### Significance of the study:

The prevalence of dysphagia in older adults living in the community varies from roughly 10% to 30% to 40% worldwide. It is even more prevalent in nursing homes, where up to 60% of residents may have it, and in hospitals, where up to 80% of patients have it (Fedecostante et al., 2023).

According to earlier South Korean studies, the prevalence of dysphagia varied from 16% to 22% in adults over 50, 11.4% to 40% in the community-dwelling geriatric population over 65, and 25.5% to 60% in hospital/institutional settings (Kwon et al., 2023). Studies in Egypt have reported a prevalence of 14.7% among geriatric hospitalized patients (Abdelbaky et al., 2023) and 45% among geriatric patients with stroke (Mohamed et al., 2022).

### Aim of the study:

To assess nutritional status and quality of life of elderly patients with dysphagia.

### Research questions:

- Q1:** What is the nutritional status among elderly patients with dysphagia?
- Q2:** What is the quality of life among elderly patients with dysphagia?
- Q3:** What is the relation between nutritional status and quality of life among elderly patients with dysphagia

### Methodology

#### Research design:

A descriptive research design was used to conduct this study.

#### The study setting:

This study was conducted at gastroenterology and neurologic outpatient clinics at Sohag University hospital in Naser city, Sohag governorate. These clinics operates five days a week except Friday and Sunday, and the number of patients attending the clinics daily who suffer dysphagia ranges from four to five.

### Sample

A convenient sample of their elderly patients with dysphagia and the total number of them were 220 male and female. The sample size was calculated using the EPI info 2000 statistical package. The calculation was done using the expected frequency of good knowledge from previous studies using 95% confidence interval, 80% power of the study, 84.5% good knowledge and worst acceptable result 5%. The sample size calculated according to the above criteria was 200 participants which increased to 220 by adding 10% to safeguard against non- response and dropout.

### Inclusion criteria:

- Elderly patients aged 60 years and above of both sex.
- Elderly patients diagnosed with dysphagia.
- Accept to participate in the study & able to communicate.

**Tools of the study:** Three tools were used

**Tool (I): Structured Interview Questionnaire:** it was developed by researcher and include two parts.

**Part (1) Demographic data of elderly patients:** which include; age, sex, level of education, occupation, marital status, residence, with whom he /she resides and smoking.

**Part (2) Health history of elderly patients:** which include; duration, risk factor and causes of dysphagia, dental condition, nutrition, medical history of elderly as cardiovascular disease, stroke, kidney disease, diabetes, arthritis, osteoporosis, hypertension, cancer and family history of dysphagia.

**Tool (II): The Short-Form Mini-Nutritional Assessment (MNA-SF) (Rubenstein et al., 2001):**

It used to assess nutritional status. the MNASF is composed of 6 items and the total score ranges from 0 to 14. The higher score, the better nutritional status.

### Scoring system:

It can be categorized in to three level malnutrition (0–7), risk of malnutrition (8–11) and normal nutritional status (12–14).

### Reliability:

The tool was valid and Cronbach's  $\alpha$  value of the full MNA tool was 0.7

and the overall accuracy of the full MNA was 91% (Rubenstein et al., 2001).

**Tool III: Swallowing Quality of Life Questionnaire (Abdou et al., 2021):**

It consisted of 44-item questionnaire that is designed to assess quality of life of patients with dysphagia. It consisted of 11 domains, which include general burden, eating duration, eating desire, food selection, communication, fear, mental health, social role, fatigue, sleep and symptom.

**Scoring system:**

Each domain is scored on a 5-point Likert scale that ranges from 1 (worst state) to 5 (best state). all domains are transformed to provide a range of 0 to 100, in which a score of "0" represents the worst score and "100" the most ideal score. The total score for each domain that ranges from 0 –100 then the Mean  $\pm$  SD measured for each subscale (Abdou et al., 2021).

**Reliability:**

The tool was reliable and test – retest reliability ranged from 0.50 to 0.99% ( $P < 0.05$ ) (Abdou et al., 2021).

**Validity:**

The face validity of the tool was reviewed by five (5) experts in gerontological nursing, Assuit University to evaluate the validity of the tools. Every member was asked to review the tool content and its structural design to ascertain, completeness and clarity of the items of questions. All comments and suggestions were considered and reworded and sequence of some statements was carried out accordingly.

**Procedure of data collection:**

Administrative phase: An official letter of approval was obtained from the Dean of the faculty of nursing at Sohag University to director of Sohag University Hospital. This letter included permission to carry out the study and explained the purpose and the nature of the study.

**Pilot study:**

Pilot study was carried out before starting data collection on 10% of the sample to examine the clarity of questions and time needed to complete the study tools. Based on the results, no modifications were done so the pilot study sample were included in the total sample of the study.

**Ethical considerations:**

The faculty of nursing ethical Committee gave an ethical code number 1120230714 its approval to the research proposal, and there was no risk to patients being researched when the study was being conducted. The study followed the common ethical principles in clinical research, and patient's oral agreement was obtained after they had been informed of the study's nature and objectives. They were informed that they had the right to refuse participation in the study at any time and that they could withdraw from it at any time without providing a reason. The privacy of study participants was taken into account when data was collected.

**Field of work:**

Data were collected in six months from the beginning of March to the end of August 2024, two days a week (Sunday and Monday). Before meeting the elderly,

the investigator met the staff of outpatient's clinics and introduce herself and explaining the purpose of the study. The investigator introduced the agreement letters of the director of hospital, asking of their permission for data collection in the outpatient clinics and asked for support from nurses as well as the agreement with elderly patients.

The investigator met the elderly in the waiting hall of the outpatient's clinics. She introduced herself and the purpose of the study the asked the elderly to participate in the study after assuring the confidentiality of their data. The average number of elderly patients which interviewed to fill questionnaire was 4-5 cases per day (two days weekly, Sunday and Monday. The questionnaire is filled by researcher; the average time was spent during filling of sheet was 20-30 minutes. The investigator assessed about nutritional status and quality of life among elderly patients with dysphagia.

**Statistical analysis:**

Data entry and data analysis were done using SPSS version 22 (Statistical Package for Social Science). Data were presented as number, percentage, mean, and standard deviation. Chi-square test was used to compare between qualitative variables. Pearson correlation was done to measure correlation between quantitative variables. P-value considered statistically significant when  $P < 0.05$ .

## Results

**Table (1): Distribution of elderly patients with dysphagia according to their demographic data (No = 220);2024**

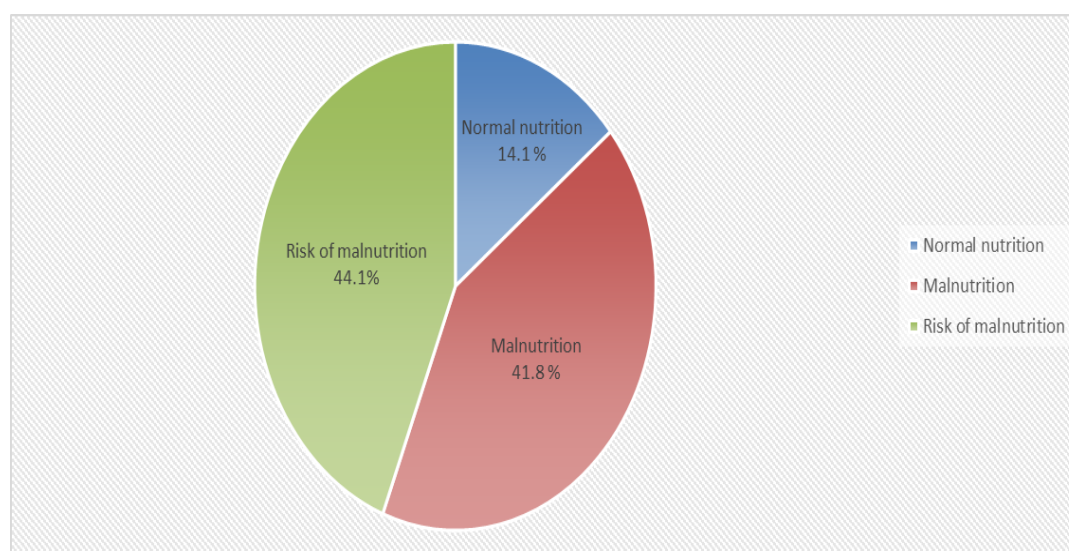
Demographic data	No. (220)	%
<b>Age: (years)</b>		
60 - < 70	75	34.1
70 - < 80	81	36.8
≥ 80	64	29.1
Mean ± SD	73.59 ± 7.41	
<b>Gender</b>		
Male	106	48.2
Female	114	51.8
<b>Level of education</b>		
Illiterate	21	9.5
Read and write	76	34.6
Basic education	62	28.2
Secondary	32	14.5
University	29	13.2
<b>Marital status</b>		
Divorced	4	1.8
Married	207	94.1
Widow	9	4.1
<b>Residence</b>		
Urban	94	42.7
Rural	126	57.3
<b>The elderly living with: #</b>		
Alone	6	2.7
Husband/ wife	207	94.1
Living with his son or her daughter	115	52.3
<b>Smoking</b>		
Yes	56	25.5
No	140	63.6
Stopped smoking	24	10.9

# More than one answer

**Table (2): Distribution of elderly patients with dysphagia according to their health history (No = 220); 2024**

Health history	No. (220)	%
<b>Past medical history #</b>		
Cardiovascular disease	52	23.6
Stroke	138	62.7
Diabetes	122	55.5
Hypertension	156	70.9
Kidney disease	70	31.8
Arthritis	64	29.1
Osteoporosis	13	5.9
Cancer	18	8.2
<b>Family history of dysphagia</b>		
Yes	30	13.6
No	190	86.4
<b>Duration of dysphagia</b>		
< 6 months	73	33.2
6 - 12 months	109	49.5
> 12 months	38	17.3
<b>Risk factors and causes of dysphagia #</b>		
Post Stroke	138	62.7
Gastro-esophageal reflux	64	29.1
Immobility	25	11.4
Tumor in the neck and head	8	3.6
<b>Nutrition type</b>		
Liquid	26	11.8
Semi-liquid	194	88.2
<b>Dental condition #</b>		
Natural teeth	15	6.8
Complete teeth loss	64	29.1
Teeth decay	89	40.5
Denture	10	4.5
Partial teeth loss	86	39.1

# More than one answer

**Figure (1): The Short Form Mini Nutritional Assessment among elderly patients regarding their dysphagia.**

**Table (3): Distribution of elderly patients regarding their mean score swallowing quality of life domains (N = 220); 2024**

	Mean $\pm$ SD	Range
General burden	49.32 $\pm$ 10.02	20.0-80.0
Eating desire	48.82 $\pm$ 10.92	20.0-73.3
Eating duration	49.64 $\pm$ 11.26	20.0-80.0
Symptoms	61.29 $\pm$ 5.06	45.7-71.4
Food selection	47.91 $\pm$ 12.50	20.0-80.0
Communication	64.45 $\pm$ 14.72	30.0-100.0
Fear of eating	59.98 $\pm$ 5.94	50.0-80.0
Mental health	56.71 $\pm$ 14.30	40.0-100.0
Social functioning	54.75 $\pm$ 9.65	36.0-76.0
Fatigue	47.24 $\pm$ 11.39	20.0-60.0
Sleep	61.36 $\pm$ 14.43	40.0-80.0
Total mean score swallowing quality of life	54.68 $\pm$ 5.31	41.8-69.2

**Table (4): Relation between demographic data of elderly patients with dysphagia and Mini-Nutritional Assessment; 2024**

Demographic data	Mini Nutritional Assessment						P-value
	Malnutrition		Risk of malnutrition		Normal nutrition		
	No.	%	No.	%	No.	%	
<b>Age: (years)</b>							<b>0.002**</b>
60 - < 70	18	24.0	44	58.7	13	17.3	
70 - < 80	37	45.7	34	42.0	10	12.3	
≥ 80	37	57.8	19	29.7	8	12.5	
<b>Gender</b>							0.522
Male	46	43.4	48	45.3	12	11.3	
Female	46	40.4	49	43.0	19	16.7	
<b>Occupation</b>							<b>0.008**</b>
Farmer	10	32.3	21	67.7	0	0.0	
Manual work	7	36.8	6	31.6	6	31.6	
Housewife	23	47.9	18	37.5	7	14.6	
Not working	21	32.3	32	49.2	12	18.5	
Retired	22	59.5	13	35.1	2	5.4	
Free business	9	45.0	7	35.0	4	20.0	
<b>Level of education</b>							0.065
Illiterate	8	38.1	7	33.3	6	28.6	
Reads and writes	28	36.8	36	47.4	12	15.8	
Basic education	28	45.2	29	46.8	5	8.1	
Secondary	19	59.4	12	37.5	1	3.1	
University	9	31.0	13	44.8	7	24.1	
<b>Residence</b>							0.534
Urban	39	41.5	39	41.5	16	17.0	
Rural	53	42.1	58	46.0	15	11.9	
<b>Smoking</b>							0.888
Smoker	23	41.1	26	46.4	7	12.5	
Non-smoker	69	42.1	71	43.3	24	14.6	

\*Statistical significance at  $p < 0.05$ \*\* Highly Statistical significance difference  $p < 0.0$



**Table (5): Relation between the studied elderly patient`s swallowing quality of life and Mini Nutritional Assessment;2024**

Swallowing quality of life	Mini- Nutritional assessment			P-value
	Malnutrition	Risk of Malnutrition	Normal Nutrition	
	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD	
General burden	47.07 $\pm$ 8.33	50.72 $\pm$ 10.23	51.61 $\pm$ 12.67	<b>0.016*</b>
Eating desire	48.04 $\pm$ 8.70	48.04 $\pm$ 12.91	53.55 $\pm$ 9.02	<b>0.033*</b>
Eating duration	47.07 $\pm$ 9.44	51.86 $\pm$ 12.77	50.32 $\pm$ 9.83	<b>0.012*</b>
Symptoms	61.37 $\pm$ 4.78	60.90 $\pm$ 5.30	62.26 $\pm$ 5.11	0.422
Food selection	47.61 $\pm$ 13.70	48.76 $\pm$ 12.52	46.13 $\pm$ 8.03	0.569
Communication	65.65 $\pm$ 13.12	63.09 $\pm$ 16.98	65.16 $\pm$ 11.22	0.472
Fear of eating	59.73 $\pm$ 6.65	59.48 $\pm$ 4.97	62.26 $\pm$ 6.17	0.067
Mental health	51.96 $\pm$ 11.48	57.28 $\pm$ 14.70	69.03 $\pm$ 13.22	<b>0.000**</b>
Social functioning	54.61 $\pm$ 9.40	54.23 $\pm$ 9.47	56.77 $\pm$ 10.95	0.436
Fatigue	45.87 $\pm$ 10.07	48.18 $\pm$ 12.71	48.39 $\pm$ 10.61	0.317
Sleep	62.83 $\pm$ 15.00	58.97 $\pm$ 13.96	64.52 $\pm$ 13.38	0.078

\*Statistical significance at  $p < 0.05$ \*\* Highly Statistical significance difference  $p < 0.00$ **Table (6): Correlation among nutritional assessment and swallowing quality of life of the elderly patients; 2024**

		Nutritional assessment	Swallowing quality of life
Nutritional assessment	r-value		
	P-value		
	r-value		
	P-value		
Swallowing quality of life	r-value	<b>0.301</b>	
	P-value	<b>0.000**</b>	

\*Statistical significance at  $p < 0.05$ \*\* Highly Statistical significance difference  $p < 0.00$ 

**Table (1):** Regarding the distribution of elderly patients with dysphagia according to their demographic data. It was observed that 36.8% of elderly patients were aged from 70 < 80 years with Mean  $\pm$  SD 73.59  $\pm$  7.41, 51 % of them were female, 94.1% were married. Regarding education and residence, it was, 34.5 % of elderly patients were read and write and 57.3 % of them were residence in rural.

**Table (2):** Show the distribution of elderly patients with dysphagia according to their health history. It was found that 70 % of elderly patients had hypertension followed by stroke 62.7% and 55.5% of them had diabetes mellitus. It was that (86.4) of the elderly patients don't have family history of dysphagia. Regarding the duration & risk factors and causes of dysphagia, it was found that 49.5 % of the elderly had dysphagia for 6 – 12 months. 62.7% of them had dysphagia because of post stroke, 88.2% of them were eating semi liquid diet and 40.5% of them had teeth decay.

**Figure (1):** Clarifies Mini-Nutritional Assessment of elderly patients regarding their dysphagia. It was observed that (41.8 %) of elderly patients had malnutrition, (44.1%) of them had risk of

malnutrition and only (14.1%) of them had normal nutrition.

**Table (3):** Reveals the distribution of elderly patients according to their swallowing quality of life domains, it was noticed that, the mean of general burden, eating desire, eating duration, food selection, symptoms, communication fear of eating, mental health and social functioning, fatigue and sleep domains were (49.32 $\pm$ 10.02, 48.82 $\pm$ 10.92, 49.64 $\pm$ 11.26, 47.91 $\pm$ 12.50, 61.29 $\pm$ 5.06, 64.45 $\pm$ 14.72, 59.98 $\pm$ 5.94, 56.71 $\pm$ 14.30, 54.75 $\pm$ 9.65, 47.24 $\pm$ 11.39 and 61.36 $\pm$ 14.43) respectively. The mean total score of the SWAL-QOL among elderly patients was (54.68  $\pm$  5.31).

**Table (4):** Reveals that relationship between demographic data of elderly patients with Mini Nutritional Assessment. Which it was found that nutritional assessment of elderly patients was statistically significance with age and occupation p-value (0.002 & 0.008) respectively

**Table (5):** Reveals that relationship between swallowing quality of life and nutritional assessment, which it clarifies that that there are statistically significance differences between nutritional assessment & general burden, eating desire, eating

duration and mental health domains (p value = 0.016, 0.033, 0.012 and 0.000) respectively.

**Table (6):** Illustrate correlation among mini nutritional assessment and swallowing quality of life of the elderly patients, it was observed that there was positive correlation and highly statistically significance between Mini Nutritional Assessment and quality of life p- value (0.000 & 0.301) respectively.

## Discussion

Dysphagia and malnutrition have been shown to be closely related, and the management and intervention of these conditions in clinical practice are crucial for improving prognosis and maximizing patient quality of life (Shimizu et al., 2024).

Regarding the demographic data of the elderly patients with dysphagia, the current study found that less than two fifth of the studied elderly patient's age was 70 - < 80 with mean age of them was  $73.59 \pm 7.41$ . The result was in the same line with study done in China by Zhang et al., (2023) & Zhang et al., (2020) who revealed that the mean age was  $72.64 \pm 6.10$  years old.

On other hand, this result differs from that recorded in Juban by Nishida et al., (2021) who found that more than two third of the elderly patient's age were  $\geq 75$  years with mean age was  $77.3 \pm 6.6$ . This may be explained by the fact that various changes with aging that could affect clinical characteristics and outcomes in patients with dysphagia.

The current findings showed that dysphagia is more common in females than males, as more than half of elderly patients with dysphagia were females. These results were supported by Pontes et al., (2017), who reported that more than half of the study sample were female. In my opinion, it is due to hormonal changes that occur in women during menopause can affect the muscles involved in swallowing, making them more susceptible to swallowing difficulties. Additionally, women generally live longer than men, so they are more likely to experience age-related conditions that can contribute to dysphagia.

Regarding educational level, the current study observed that more than one third of the studied elderly patients had read and write and more than one quarter had basic education. These results were differed from study done in Egypt by Abdelmowla et al., (2022) who reported that more than one third had preparatory school and less than quarter had primary school of the studied patients. From my point of view, this results from their belief that obtaining basic education and the ability to read and write means that they have reached the pinnacle of education.

In relation to the marital status, the present study showed that vast majority of elderly patients were

married. This results consistent with study done in Brasil by Ferreira et al., (2023) who found that most of the patients were married. While these results were contrary to the study by Kurosu et al., (2021), who showed that less than two fifth of study population were widowed.

The current study recorded that more than half of the studied elderly patients were lived in rural areas and the remainder were lived in urban. This finding differs from Jones et al., (2023) who found that quarter of them were rural residents. Also, this result was disagreed with Zeng et al., (2024) who stated that more than fifth of patients were from rural areas and more than half of study sample were from urban.

Regarding living with the patients, the present study demonstrated that vast majority the studied elderly patients were lived with spouse. This result was confirmed with study done in South Korea by Lim et al., (2018) who found that less than half of elderly individual lived with spouse.

As regard the smoking habits, the present study illustrated that less than two third of the elderly patients had no smoked. This result was supported by Ferreira et al., (2023), who showed that most of the patients reported never having smoked.

In addition to, this result was similar to Kurosu et al., (2021), who found that nearly most of the studied elderly patients had no smoking. In my opinion, smoking can lead to increased dryness and inflammation of the throat, which makes swallowing more difficult, in addition to weakening the immune system and increased exposure to lung infection.

In relation to the health history, the present study demonstrated that stroke, diabetes mellitus and hypertension were the most frequent diseases among the studied elderly patients where less than two third of them had stroke, more than half of them had diabetes and more than two third of them had hypertension.

This finding was consistent with study done in Egypt by Hafez et al., (2024) who reported that diabetes and hypertension were the most frequent disease among the studied geriatric patients. This is disagreed with Savaş et al., (2024) who found that there were more ten percent of them had diabetes mellitus and nearly half of them suffered from hypertension.

According the duration of dysphagia, the current finding demonstrated that almost half of the studied elderly patients had dysphagia from 6 to 12 months. These results were contradicted to Allen et al., (2024) who showed that more than half of the studied patients had symptoms of dysphagia from 15 years or more.

From investigator point of view, this may be due to various factors such as underlying medical conditions causing dysphagia, the severity of the condition, the effectiveness of treatment or therapy, patients'



adherence to recommended interventions and presence of comorbidities can also influence the duration of dysphagia symptoms experienced by patients.

Regarding risk factors and causes of dysphagia, our present study revealed that less than two third of the studied elderly patients caused by stroke and more than one quarter of them caused by gastroesophageal reflux disease. This agrees with **Bibi et al., (2015)** who found that about half among the studied geriatric patients caused by stroke and less than quarter caused by parkinsonism.

In my opinion, aging increased the possibility of clot formation due to the accumulation of fat and cholesterol in the arteries over time and the lack of exercise. As for esophageal reflux, the gastric outlet muscle weakens with age. Which increased the possibility of stomach acid leaking into the esophagus.

As regard the nutrition type, the current study found that the majority of the studied elderly patients were eating semi liquid diet. This result agrees with **Saleedaeng et al., (2023)**, who stated that about half of participants with dysphagia were about to consume texture modified diet. In my opinion it is easier for them to swallow and reduces the risk of choking or aspiration.

As regard the dental condition, the present study revealed that about nearly two fifth had teeth decay and nearly two fifth had partial teeth loss of the studied elderly patients.

This result was similar to **Okamoto et al., (2015)** who reported that significant relationships remained between swallowing problems and a smaller number of remaining teeth, and between swallowing problems and decrease in the number of teeth during the survey. In my personal opinion, this is due to the lack of oral care, history of smoking and unhealthy eating habits, which contributes to the deterioration of dental health. Regarding the total Short Form Mini Nutritional Assessment among elderly patients with dysphagia, the present finding found that more than two fifth of them had malnutrition. These results are confirmed by **Viñas et al., (2023) & Hafez et al., (2024)**, they revealed that less than half of the elderly patients at risk of malnutrition and half of them suffered from malnutrition.

While these results are contradicted with study done by **Igarashi et al., (2020)**, who revealed that one fifth of patients had malnutrition, less than one third of them had normal malnutrition and only agree with the present study that less than half of the studied elderly patients at risk of malnutrition. This may relate to the fact that dysphagia was a condition that made it difficult for patient to swallow safely and effectively, often resulting in, the inability to consume an

adequate amount of food and nutrients which definitely affect nutritional status.

Regarding the swallowing quality of life among elderly patients with dysphagia, the current study found that the total mean score  $54.68 \pm 5.31$  of studied elderly patient's quality of life. This result was in the same line with **Plowman-Prine et al., (2009)** who reported that the mean total score SWAL-QOL was 47.09; SD, 18.37).

On other hand, the finding is contrast with **Rugaitienė et al., (2024)** who stated that total mean score of swallowing quality of life was 34.39. This could be explained by the fact that dysphagia can also result in a decreased enjoyment of meals leading to decreased appetite and overall lower quality of life.

As regard the relationship between nutritional assessment and demographic data, the current study found that there was a statistical significance association among nutritional assessment and occupation. This result agrees with study by **Ball & Crawford, (2010) Tani et al., (2015)** who concluded from previous studies and reported that socioeconomic status is associated with nutritional status among community- dwelling older adults and occupation was associated with under nutrition.

On other hand, this result was disagreed with **Saleedaeng et al., (2023)** who stated that occupation not associated with undernutrition among older adults. These might be explained by the fact that proper nutrition plays an important role in maintaining human health, strength, and activity. When you have an appropriate nutritional, can improve motor skills, increase energy, and enhance focus while working.

As regard relationship between nutritional assessment and age, the current study found that a statistical significance association among nutritional assessment and age of patient. This result was confirmed by a **Takeuchi et al., (2014) and Nishida et al., (2021)**, they found that a significantly associated with malnutrition in a representative sample of community-dwelling frail men and women aged  $\geq 65$  years in Japan and suggested that age-related differences in frailty and malnutrition would be significant in older adult.

From investigator point of view, this might be due to that individuals age became more susceptible to dysphagia and lead to nutritional challenges as they may have difficulty eating and obtaining the necessary nutrients for their body and it is important to eat healthy and nutritious food to ensure that their nutritional needs are met. If difficulty swallowing affects their ability to eat fully and properly, this may cause nutritional deficiencies and weight loss, increasing the risk of disease and poor health.

There is a statistical significance relationship between

swallowing quality of life and nutritional assessment regarding general burden, eating desire, eating duration and mental health in the current study. From investigator point of view, this may be due to when elderly patients with dysphagia had poor nutritional status, it could lead to decreased energy levels, reduced appetite, and overall decreased enjoyment of eating. this could contribute to a lack of desire to eat and may result in longer meal durations, this leading to lower quality of life among elderly patients.

Concerning the correlation between Mini Nutritional Assessment and swallowing quality of life, the current study discovered that there was a statistically significance and positive correlation between Mini Nutritional Assessment and swallowing quality of life and found that more than two fifth of older adults were undernourished, where the factor driving the older adults to have undernutrition was partial tooth loss from untreated caries, these factors were also associated with a lower quality of life..

This result was similar with **Saleedaeng et al., (2023)**, who revealed that there a significant association between nutritional assessment and quality of life. Also, this result was supported by a **Ueshima et al., (2023)** who found that malnutrition negatively affects the quality of life of patients with dysphagia. From investigator point of view, this may be due to proper nutrition plays a role in maintaining and improving overall health and well-being. In dysphagia, elderly patients may struggle to consume adequate amounts of food and liquid, leading to malnutrition and poor health outcomes.

### Conclusion

The majority of studied elderly patients with dysphagia had nutritional disturbance and moderate quality of life. There was statistically significance positive correlation between Mini Nutritional Assessment and swallowing quality of life

### Recommendation:

- 1- Implementing an educational program about meal modifications to improve nutritional status among elderly patients with dysphagia.
- 2- Application of swallowing therapy and rehabilitation programs to help improve swallowing function and quality of life in elderly patients with dysphagia.

### Reference

▪ **Abdelbaky, A., Abdel Aziz, A., Mohamed, E., Eltomy, E., Mohamed, A., & AbdelHakim, E., (2023):** Shaker Exercises, Feeding Modification, and Associated- depression Relief as Dysphagia Care Bundle: A quasi-Experimental Study in Elderly Patients, Assiut Scientific Nursing Journal ,Vol

(11).No (36): p. p :194-207.

- **Abdelmowla, R., Abdelmowla, H., Abdel Aziz, S., Fahem, E., & Azer, S., (2022):** Effect of Swallowing Exercises on Swallowing Function for Patients with Neurogenic Dysphagia. Assiut Scientific Nursing Journal, 10(31), 15-26.
- **Abdou, R., Elsayed, H., & Adel, S., (2021):** Validation of the Arabic version of swallowing quality of life questionnaire, The Egyptian Journal of Otolaryngology, Vol (37) .p : 1-7.
- **Allen, J., Stone-Ghariani, A., Quezada, G., Banks, D., Rose, F., Knight, W., & Smith, C., (2024):** Living with dysphagia: a survey exploring the experiences of adults living with neuromuscular disease and their caregivers in the United Kingdom. Journal of Neuromuscular Diseases, (Preprint), 1-22.
- **Ball, K., & Crawford D., (2010):** socioeconomic status and weight change in adults: a review. soc sci Med;60:1987–2010.
- **Bibi, S., Iqbal, A., Ayaz, S., Khan, A., & Matee, S., (2015):** The impact of oropharyngeal dysphagia on quality of life in individuals with age over 50 years. Head and neck, 1(2.5), 141.
- **Engh, M., & Speyer, R., (2022):** Management of dysphagia in nursing homes, a national survey. Dysphagia, Vol( 37) . No (2): p.p: 266-276.
- **Fedecostante, M., Dell'Aquila, G., & Cherubini, A., (2023):** Screening for Dysphagia: Time Is Now, The journal of nutrition, health & aging, p.p:1-2.
- **Ferreira, R., Alves, L., & Mangilli, L., (2023):** Swallowing-related quality of life in hospitalized elderly patients: A cross-sectional analytical study. Acta Paulista de Enfermagem, 36, eAPE01502.
- **Hafez, N., Adly, N., Elbedewy, R., & Mohamed, M., (2024):** Association between sarcopenia and dysphagia among elderly. The Egyptian Journal of Geriatrics and Gerontology, 11(1), 141-156.
- **Hu, X., Ma, Y., Karako, K., Tang, W., Song, P., & Xia, Y., (2024):** Comprehensive assessment and treatment strategies for dysphagia in the elderly population: Current status and prospects. BioScience Trends, 18(2), 116-126.
- **Igarashi, K., Kikutani, T., Tamura, F., Yajima, Y., & Tohara, T., (2020):** Factors predicting the effects of dysphagia rehabilitation on multidimensional functional status in elder outpatients: A prospective cohort study. Gerodontology, 37(3), 271- 278.
- **Jones, H., Leiman, D., Starr, K., North, R., Pieper, C., Robison, R., & Cohen, S., (2023):** Older adults with dysphagia have increased odds of being food insecure and homebound. Journal of applied gerontology: the official journal of the Southern Gerontological Society, 42(9), 1993.
- **Karunaratne, T., Clavé, P., & Ortega, O., (2024):** Complications of oropharyngeal dysphagia in older

- individuals and patients with neurological disorders: insights from Mataró hospital, Catalonia, Spain. *Frontiers in Neurology*, 15, 1355199.
- **Kurosu, A., Osman, F., Daggett, S., Peña-Chávez, R., Thompson, A., Myers, S., & Rogus-Pulia, N., (2021):** Factors associated with self-reported dysphagia in older adults receiving meal support. *The Journal of nutrition, health and aging*, 25(10), 1145-1153.
  - **Kwon, S., Cha, S., Kim, J., Han, K., Paik, N., & Kim, W., (2023):** Trends in the incidence and prevalence of dysphagia requiring medical attention among adults in South Korea, 2006–2016, A nationwide population study. *Plos one*, Vol(18). No(6): p .p:e0287512.
  - **Lim, Y., Kim, C., Park, H., Kwon, S., Kim, O., Kim, H., & Lee, Y., (2018):** Socio- demographic factors and diet-related characteristics of community-dwelling elderly individuals with dysphagia risk in South Korea. *Nutrition Research and Practice*, 12(5), 406-414.
  - **Mohammed, M., & Li, J., (2022):** Stroke-Related Sarcopenia among Two Different Developing Countries with Diverse Ethnic Backgrounds (Cross National Study in Egypt and China). In *Healthcare*, Multidisciplinary Digital Publishing Institute, Vol(10). No(11):p .p: 2336.
  - **Mushtaq, A., & Khan, M., (2024):** Social isolation, loneliness, and mental health among older adults during COVID-19: A scoping review. *Journal of Gerontological Social Work*, 67(2), 143-156.
  - **Nishida, T., Yamabe, K., & Honda, S., (2021):** The influence of dysphagia on nutritional and frailty status among community-dwelling older adults. *Nutrients*, 13(2), 512.
  - **Okamoto, N., Morikawa, M., Yanagi, M., Amano, N., Tomioka, K., Hazaki, K., & Kurumatani, N., (2015):** Association of tooth loss with development of swallowing problems in community-dwelling independent elderly population: the Fujiwara-kyo study. *Journals of Gerontology Series A: Biomedical Sciences and Medical Sciences*, 70(12), 1548-1554.
  - **Oliveira, L., Marquitti, F., Ramos, S., Almeida, E., Nascimento, W., & Dantas, R., (2023):** Relationship between nutritional status, dysphagia, and functional eating level in adult patients with cerebral palsy in long institutional stays. *Arquivos de Gastroenterologia*, 60(2), 194-200.
  - **Plowman-Prine, E., Sapienza, C., Okun, M., Pollock, S., Jacobson, C., Wu, S., & Rosenbek, J., (2009):** The relationship between quality of life and swallowing in Parkinson's disease Florida. *Movement disorders: official journal of the Movement Disorder Society*, 24(9), 1352-1358.
  - **Pontes, É., Amaral, A., Rêgo, F., Azevedo, E., & Silva, P., (2017):** Quality of life in swallowing of the elderly patients affected by stroke. *Arquivos de gastroenterologia*, 54(01), 27-32.
  - **Printza, A., Triaridis, S., Kalaitzi, M., Nikolaidis, I., Bakirtzis, C., Constantinidis, J., & Grigoriadis, N., (2020):** Dysphagia prevalence, attitudes, and related quality of life in patients with multiple sclerosis. *Dysphagia*, 35, 677-684.
  - **Roberts, H., Lambert, K., & Walton, K., (2024):** The Prevalence of Dysphagia in Individuals Living in Residential Aged Care Facilities: A Systematic Review and Meta-Analysis. In *Healthcare* (Vol. 12, No. 6, p. 649). MDPI.
  - **Rubenstein, L., Harker, J., Salvà, A., Guigoz, Y., & Vellas, B., (2001):** Screening for undernutrition in geriatric practice: developing the short-form mini-nutritional assessment (MNA-SF)., *J Gerontol A Biol Sci Med Sci*, vol (56) , No(6):P.P:M366-72. Doi : available at: <https://doi.org/10.1093/gerona/56.6.m366>.
  - **Rugaitienė, M., Lesauskaitė, V., Ulozienė, I., Smičius, L., & Damulevičienė, G., (2024):** Impact of Modified Diet, Swallowing Exercises, and Electrostimulation on Quality of Life of Older Patients Suffering from Oropharyngeal Dysphagia , Lithuania. *Medicina*, 60(7), 1021.
  - **Saleedaeng, P., Korwanich, N., Muangpaisan, W., & Korwanich, K., (2023):** Effect of dysphagia on the older adults' nutritional status and meal pattern Thailand. *Journal of Primary Care & Community Health*, 14, 21501319231158280.
  - **Savaş, E., Demir, N., Kilavuz, A., & Saraç, Z., (2024):** Determination of Dysphagia with Different Tools in Turkish Nursing Home Residents. *Eur J Geriatric Gerontol*, 6(1), 39-45.
  - **Shimizu, A., Yamaguchi, K., & Maeda, K., (2024):** Malnutrition in dysphagia: nutritional assessment and management in clinical practice. *Frontiers in Nutrition*, 11, 1416797.
  - **Takeuchi, K., Aida, J., Ito, K., Furuta, M., Yamashita, Y., & Osaka, K., (2014):** Nutritional status and dysphagia risk among community-dwelling frail older adults. *The journal of nutrition, health & aging*, 18, 352-357.
  - **Tani, Y., Kondo, N., Takagi, D., (2015):** Combined effects of eating alone and living alone on unhealthy dietary behaviors, obesity and underweight in older Japanese adults: results of the JAGES. *Appetite*;95:1-8. doi:10.1016/j.appet.2015.06.005
  - **Ueshima, J., Momosaki, R., Shimizu, A., Motokawa, K., Sonoi, M., Shirai, Y., & Sakai, K., (2023):** Nutritional assessment in adult patients with dysphagia: a scoping review. *Nutrients*, 13(3), 778.

- Varshini, M., Maria, J., Anusha, M., & Anand, D., (2024): Knowledge of Dysphagia among Geriatrics. Journal of Indian Speech Language & Hearing Association, 38(1), 29-36.
- Viñas, P., Martín-Martínez, A., Cera, M., Riera, S., Escobar, R., Clavé, P., & Ortega, O., (2023): Characteristics and Therapeutic Needs of Older Patients with Oropharyngeal Dysphagia Admitted to a General Hospital. The Journal of nutrition, health and aging, 27(11), 996-1004
- Zeng, H., Zeng, X., Xiong, N., Wang, L., Yang, Y., Wang, L., & Zhao, W., (2024): How stroke-related dysphagia relates to quality of life: the mediating role of nutritional status and psychological disorders, and the moderating effect of enteral nutrition mode. Frontiers in Nutrition, 11, 1339694.
- Zhang, H., Guo, F., Tang, M., Dai, H., Sheng, J., Chen, L., & Chen, K., (2020): Association between skeletal muscle strength and dysphagia among Chinese community-dwelling elderly adults. The Journal of nutrition, health and aging, 24(6), 642-649.
- Zhang, H., Ye, C., Zhang, S., Yang, D., Gong, X., Li, S., & Tang, M., (2023): Association between health literacy and dysphagia in the community-dwelling older population: a cross-sectional study. Aging Clinical and Experimental Research, 35(10), 2165-2172.

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