ORIGINAL RESEARCH

Nurses' knowledge of patients´' swallowing ability: a Cross Sectional Study in Portugal

Susana Marisa Loureiro Pais Batista[1], Ana Catarina Pereira Gaspar[1], Bárbara Madeira dos Santos[1], Filipa da Cunha Silva[1], Francisca Fonseca Marta[1], Isabel Pinto Pedrosa[1], Rosa Maria Lopes Martins[1], Carlos Manuel Sousa Albuquerque[1], Ana Isabel Nunes Pereira de Azevedo e Andrade[1], João Duarte Carvalho[1].

ABSTRACT

Background:
Oropharyngeal dysphagia is the result of a series of neuromuscular disorders that can impair swallowing. These alterations compromise adequate nutritional support and often endanger the safety of the person with dysphagia. The prevalence of dysphagia is known to increase with age, but it is still an underdiagnosed problem, which should be a concern for nurses.

Objective: To identify nurses' knowledge of patients' swallowing ability in a Portuguese hospital.

Methodology:
Quantitative, descriptive-correlational, cross-sectional study using a non-probabilistic convenience sample of 62 nurses. The online survey includes sociodemographic/ professional indicators, an assessment of nurses' knowledge of swallowing ability, relevant data for dysphagia diagnosis and compensatory swallowing strategies.

Results:
62 nurses were included, mostly female (80.6%), with an average age of 38.50 years, with a prevalence of those under 39 (53.2%), with a degree (71.0%) and who had been working in the profession for 14 years or less (54.8%), there was a higher percentage of men who had not had any training in dysphagia compared to women (66.7% vs. 52. 0%). The multiple linear regression showed as predictors of knowledge of swallowing ability: knowledge of relevant data to diagnose dysphagia, knowledge of compensatory strategies and inversely professional exercise (p<0.000).

Conclusions:
The higher the knowledge about compensatory swallowing strategies and the knowledge about the relevant data for diagnosing dysphagia, and the shorter the time spent in professional practice, the greater the nurses' knowledge about dysphagia. These results suggest the need of continuous education about dysphagia for more experienced professionals.

Corresponding Author:

Prof. Susana Pais Batista
Polytechic University of Viseu-School of Health,
Health Sciences and Nursing Research Unit:
sbatista@essv.ipv.pt

Authors' Affiliations:
[1]Polytechnic University of Viseu-School of Health, Portugal

Author's Contribution statement:
The authors confirm their contribution to the paper as follows. Study Conception, design, and data collection: Susana Batista, Ana Gaspar, Bárbara Santos, Filipa Silva, Francisca Marta, Isabel Pedrosa; data analysis: Susana Batista, Carlos Albuquerque, João Carvalho; literature review and interpretation of results: Susana Batista, Ana Gaspar, Bárbara Santos, Filipa Silva, Francisca Marta, Isabel Pedrosa; draft manuscript preparation: Susana Batista, Rosa Martins, Carlos Albuquerque, Ana Andrade. All authors reviewed the results and approved the final version of the manuscript.

INTRODUCTION:

The act of swallowing is a highly complex neuromuscular process that requires precise bilateral coordination of more than 25 pairs of muscles. Using different imaging techniques, numerous physiological studies have consistently shown that, in addition to the well-established role of the brainstem, different cortical areas are involved in modulating swallowing. Based on these findings, the mechanisms of reorganisation have been further explored and form the neuroscientific basis for treatment approaches using different neurostimulation modalities (Dziewas et al., 2021).

The swallowing mechanism, according to Oliveira (2020, p. 31), is a "dynamic and intermittent process that involves multiple complex and coordinated interactions, carried out by a set of neuromotor mechanisms, coordinated by the cerebral cortex, brainstem and encephalic nerves, involving both the central nervous system and the peripheral nervous system". Still according to the same author, it is a mechanism made up of several phases, "some of which are voluntary (oral and oral preparatory) and others involuntary or reflex (pharyngeal and oesophageal) according to the region in which the process takes place" (Oliveira, 2020, p. 31).

According to the World Gastroenterology Organisation (2014), dysphagia refers to the difficulty in initiating swallowing or is equivalent to the sensation that solid and/or liquid food is retained in the passage from the mouth to the stomach, which translates into the perception of the impossibility of the normal passage of swallowed food/liquids. The same organisation stresses that it is a problem considered to be a disorder with very specific signs and symptoms, characterised by alterations at any stage or between stages of the swallowing dynamics, which can be congenital or acquired (WGO, 2014). Dysphagia is usually seen as a congenital or acquired difficulty in swallowing, resulting from an acute or progressive process that interferes with the transport of the food bolus from the mouth to the stomach. It is thus a condition that results both from the interruption in the pleasure of eating and the maintenance of nutrition and hydration (Oliveira, 2020).

Despite the underlying diseases, the risk of developing a swallowing disorder increases significantly with age. Thus, dysphagia is found in 30-40% of elderly people living independently, while more than 50% of nursing home residents and approximately 70% of all patients admitted to nursing homes are affected by this condition (Dziewas et al., 2021). As with other patient groups, in geriatric patients, dysphagia increases the risk of pneumonia and

malnutrition with the critical consequences of reduced physical and mental capacities and, ultimately, increased frailty (Dziewas et al., 2021).

To screen for dysphagia, a simple bedside test protocol is recommended for all patients before they are given liquid or food. This test should be administered by nurses with expertise in the field. To improve nurses' skills in dysphagia screening, it is therefore important that they have training in the area to improve their skills and knowledge (Seedat & Strime, 2022). According to the same authors, dysphagia is a "hidden" disease which can have serious consequences, including death.

It is important to intervene early and adopt a multidisciplinary approach, with each professional demonstrating an understanding of both dysphagia and each other's role. The nurse is at the centre of care provision and is ideally placed to intervene but needs to be literate in the area, (Oliveira et al., 2021).

There is currently a higher incidence of this problem, and nurses play a fundamental role in dealing with people with swallowing disorders (Galvão et al., 2022). Even so, its prevalence has been found to be higher than the existing evidence for Portugal (Ferreira, Fernandes & Oliveira, 2022). Their intervention in this area ranges from assessment, diagnosis, implementation of compensatory strategies and referral to Rehabilitation Nursing. This referral is essential as it will help maintain and/or improve swallowing capacity through exercises, manoeuvres and techniques geared to each case (Pereira et al., 2022).

OBJECTIVE:
To identify nurses' knowledge of patients' swallowing ability in a Portuguese hospital.

METHODOLOGY:
This is a cross-sectional, quantitative, descriptive-correlational study aimed at analysing how sociodemographic and professional variables relate to nurses' knowledge of swallowing ability.

Dependent variable: Nurses' " knowledge about swallowing capacity" was operationalised by identifying the signs of dysphagia (swallowing, coughing, sialorrhoea and voice alteration) identified in the Guss scale (Trapl, M. et al., 2007).

Independent variables: age, gender, education, being a specialised nurse, workplace, time of professional practice,

formal training in the field of dysphagia, "knowledge about relevant data " for diagnosing dysphagia, "knowledge about compensatory swallowing strategies".

Data collection procedure: data were collected using a self-administered survey which includes questions formulated by the researchers. The questionnaire is divided into 5 groups of questions, with an estimated completion time of 15 minutes:

- Group 1 - Sociodemographic Characterisation contains 2 questions: age, gender.

- Group 2 - Professional Characterisation contains 5 questions: educational qualifications, being a specialist nurse, where they work, professional experience and training in dysphagia.

- Group 3 - Knowledge of swallowing ability: a group of questions with 15 items relating to knowledge of dysphagia, based on the knowledge associated with the application of the Guss scale. Each item is assessed on a Likert scale from 1 (totally disagree) to 5 points (totally agree), with items 2, 3, 5, 6, 7, 9, 11, 12 and 14 being considered "true" or items 1, 4, 8, 9, 13 and 15 being considered "false". The final rating can vary between a minimum of 15 and a maximum of 75 points, with false items being rated inversely.

- Group 4 - Knowledge about relevant data to the diagnosis of dysphagia: this is a group of 10 statements referring to data relevant to the diagnosis of dysphagia. Each item is assessed on a Likert-type scale from 1 (totally disagree) to 5 points (totally agree), with all items being true. The final score can vary between a minimum of 10 and a maximum of 50 points.

- Group 5 - Knowledge about compensatory swallowing strategies: this is a group of 10 statements referring to data relevant to the diagnosis of dysphagia. Each item is assessed on a Likert-type scale from 1 (totally disagree) to 5 points (totally agree), with items 1, 4 and 5 being false and the rest (2, 3, 6, 7, 8, 9, 10) being true. The final rating can vary between a minimum of 10 and a maximum of 50 points, with false items being rated inversely.

Ethical Procedures: Throughout the research process, we endeavoured to respect a set of ethical principles and deontological precepts. For data protection, the survey

was created in EUSurvey platform, supported by the European Commission's DEP-Interoperability programme. A favourable opinion was obtained from the Ethics Committee of the Polytechnic Institute of Viseu and the Ethics Committee of the Tondela-Viseu Hospital Centre (CHTV). The questionnaire was made available in digital format, with the following access:

https://ec.europa.eu/eusurvey/runner/conhecimentodisfagiaorofaringea2021.

Informed consent was obtained for voluntary participation, and it was a guaranteed anonymity and confidentiality of the information. Surveys were sent via the hospital's institutional mailing list to all nurses in post. All personal data are stored on the servers of the European Commission's Data Centre.

Statistical procedures: descriptive and analytical or inferential statistics were used. The statistical processing was carried out using the SPSS programme (Statistical Package for the Social Sciences) version 26.0 for Windows.

RESULTS:

Descriptive analysis

Regarding to age, the participants had a minimum age of 23 and a maximum of 54, corresponding to an average of 38.50 years, with a standard deviation (SD) of 8.270 years and a coefficient of variation (CV) of 21.03%, which shows a moderate dispersion around the average.

As for age according to gender, the average age for females (39.32 years) is higher than for males (37.33), and the asymmetry (Sk) and kurtosis (K) values show that these are distributions with Gaussian curves that are platykurtic and skewed to the right for both genders and for the entire sample. The coefficients of variation indicate a moderate dispersion in relation to the mean value of the participants' ages. 53.2 per cent in the sample were under 39. The figures for males and females are like those for the overall sample, so no statistically significant differences were found ($\chi2=1.080$; $p=0.299$).

About the educational qualifications, most participants have a bachelor's degree (71.0%), while the rest have a master's/doctorate (29.0%). It should be noted that there were more women with a bachelor's degree (74.0% vs. 58.3%) than men, but the Chi-square test ($\chi2$) did not reveal any statistically significant differences ($\chi2=1.153$; $p=0.232$).

Concerning the specialist nurse variable, we found that most participants (71.0%) did not have a nursing speciality, but 29.0% had the title of specialist. The figures for males and females are like those for the overall sample, so no statistically significant differences ($p> 0.05$) were found.

Regarding workplace, most participants (93.5%) work in a hospital, followed by a minority of 3 nurses (4.8%) in a primary care centre and finally 1 who works in other settings. As for gender, women were more represented in the first group (94.1% vs. 91.7%), although the differences were not statistically significant ($p=0.618$).

In terms of professional experience, most people have been in the profession for 14 years or less (54.8%), followed by people with 15 years or more of professional experience (45.2%). In relation to gender, we found that men were more represented in the first group (66.7% vs. 52.0%), although the differences were not statistically significant ($p=0.359$).

As for speciality area, out of a total of 24 specialist nurses, 13 (54.2%) are specialists in Rehabilitation Nursing, followed by 8 specialists in Medical-Surgical Nursing with 33.3% representation. Finally, the speciality areas of Community Nursing, Maternal and Obstetric Health Nursing and Mental Health and Psychiatric Nursing are represented by one member each (4.2%).

For the question "Have you ever had training in the area of dysphagia?", there was a tie between those who had and who hadn´t (50.0% vs. 50.0%). The analysis between men and women did not reveal any statistically significant differences ($\chi2=0.413$; $p=0.520$), although there was a higher percentage of men who had not had training in dysphagia (66.7% vs. 52.0%).

knowledge of swallowing ability: when asked about the basic principles to be taken into consideration when assessing swallowing capacity, most nurses disagreed with the incorrect statements (shaded) 1, 4 and 8. However, they agree with statements 9, 13 and 15, which are also incorrect (see Table 1).

About the correct statements, opinions are mostly in agreement, but there are some statements that raise doubts, with answers ranging from "neither agree nor disagree" to "totally agree". Of this group of true statements, only statement 12 received a response

contrary to expectations from most respondents, with 42.9% of the sample disagreeing in part (see Table 1).

Table 1 - *Knowledge of swallowing ability*

	Strongly disagree		Disagree in part		Neither agree nor disagree		Agree in part		Totally agree	
	n	%	n	%	n	%	n	%	n	%
1. If the patient is drowsy but awake, he can be fed.	5	7.9	**33**	**52.4**	2	3.2	13	20.6	10	15.9
2. To be fed, the patient must be in the sitting position.	2	3.2	1	1.6	2	3.2	10	15.9	**48**	**76.2**
3. Before feeding, ask the patient to cough or sneak up hard.	2	3.2	3	4.8	15	23.8	17	27.0	**26**	**41.3**
4. If the patient is unable to cough/clear, swallowing evaluation may continue	5	7.9	**23**	**36.5**	17	27	10	15.9	8	12.7
5. If the patient is unable to swallow his or her own saliva, consider "swallowing impossible"	3	4.8	12	19.0	4	6.3	**23**	**36.5**	21	33.3
6. The swallowing test includes an indirect and a direct phase.	0	0.0	1	1.6	**25**	**39.7**	10	15.9	**27**	**42.9**
7. If the attempt at indirect swallowing testing was successful, the evaluation can be continued	0	0.0	1	1.6	**19**	**30.2**	**21**	**33.3**	22	34.9
8. Sialorrhoea in the patient does not invalidate the continuation of the swallowing test	11	17.5	**23**	**36.5**	11	17.5	10	15.9	8	12.7
9. Change in voice, after swallowing, is normal.	0	0.0	3	4.8	8	12.7	21	33.3	**31**	**49.2**
10. The gurgling after swallowing, is a sign of aspiration.	3	4.8	12	19.0	7	11.1	**32**	**50.8**	9	14.3
11. For direct swallowing test it is necessary water and bread	2	3.2	3	4.8	**27**	**42.9**	11	17.5	**20**	**31.7**
12. If, for cognitive reasons, the patient is unable to cough/whep they can continue the evaluation	8	12.7	**27**	**42.9**	16	25.4	5	7.9	7	11.1
13. To test the swallowing capacity can be used any liquid	1	1.6	5	7.9	5	7.9	15	23.8	**37**	**58.7**
14. To test the swallowing capacity, one should start with semi-liquid, liquid, and finally solid consistency	8	12.7	12	19.0	8	12.7	12	19.0	**23**	**36.5**
15. The swallowing alteration is irreversible, hence the need for chronic nasogastric intubation	0	0.0	1	1.6	3	4.8	9	14.3	**50**	**79.4**

Regarding the *knowledge about relevant data* to diagnose dysphagia, there was majority agreement with statements 1-5 and 8-10, all of which were also true. Statements 6 ("sensitivity in the oral cavity") and 7 ("velopalatine reflex"), on the other hand, divided opinion, with most nurses opting for a neutral opinion (see Table 2).

Table 2 – Knowledge about relevant data for the diagnosis of dysphagia

	Totally disagree		Disagree in part		Neither agree nor disagree		Agree in part		Totally agree	
	n	%	n	%	n	%	n	%	n	%
1. Cough up to 3 minutes after swallowing	0	0.0	2	3.2	11	17.5	23	36.5	27	**42.9**
2. Sialorreia	3	4.8	7	11.1	9	14.3	22	34.9	22	**34.9**
3. Voice change after swallowing	0	0.0	2	3.2	8	12.7	25	39.7	28	**44.4**
4. Delay in swallowing	0	0.0	4	6.3	8	12.7	24	38.1	27	**42.9**
5. Cyanosis	1	1.6	0	0.0	6	9.5	17	27.0	39	**61.9**
6. Tenderness in the oral cavity	4	6.3	7	11.1	20	**31.7**	18	28.6	14	22.2
7. Velopalatine reflex	1	1.6	2	3.2	24	**38.1**	19	30.2	17	27.0
8. Retention of food contents in the oral cavity	1	1.6	3	4.8	4	6.3	31	49.2	24	**38.1**
9. Asymmetrical tongue movement	0	0.0	4	6.3	12	19.0	24	38.1	23	**36.5**
10. Multiple swallows	2	3.2	2	3.2	16	25.4	22	34.9	21	**33.3**

Regarding the results on *knowledge about compensatory swallowing strategies* (see Table 3), most nurses agree with the incorrect statements (shaded) 1, 4 and 5. About the correct statements, opinions were mostly divided between "neither agree nor disagree", "partly agree" and "totally agree". However, statement 9 "swallowing can be improved with range-of-motion exercises" raises doubts, with most of the sample disagreeing or neither agreeing nor disagreeing with it (see Table 3)

Table 3 - Knowledge about compensatory swallowing strategies

	Totally disagree		Disagree in part		Neither agree nor disagree		Agree in part		Totally agree	
	n	%	n	%	n	%	n	%	n	%
1. Swallowing can be improved by tilting the head back before swallowing.	2	3.2	9	14.3	9	14.3	7	11.1	36	**57.1**
2. Swallowing can be improved by tilting the head forward before swallowing.	5	7.9	10	15.9	8	12.7	11	17.5	29	**46.0**
3. Swallowing can be improved by tilting the head to the side and turning the head to the affected side before swallowing	12	19.0	5	7.9	28	**44.4**	12	19.0	6	9.5
4. Swallowing worsens with spoon pressure on the tongue.	4	6.3	4	6.3	21	**33.3**	18	28.6	16	25.4
5. The application of ice worsens the process of swallowing rehabilitation.	2	3.2	5	7.9	35	**55.6**	6	9.5	15	23.8
6. Citrus fruits can improve oral sensory capacity, improving the ability to swallow.	2	3.2	2	3.2	31	**49.2**	15	23.9	13	20.6
7. Changing the consistency of the food can improve swallowing	1	1.6	0	0.0	6	9.5	18	28.6	38	**60.3**
8. The Mendelsohn manoeuvre can improve the efficiency of swallowing by elevating the larynx	0	0.0	1	1.6	31	**49.2**	17	27.0	14	22.2
9. Swallowing can be improved with range-of-motion exercises	**15**	**23.8**	**22**	**39.4**	**21**	**33.3**	1	1.6	4	6.3
10. Swallowing can be improved with exercises to strengthen the tongue, lips, jaw, pharynx, and cheeks	0	0.0	1	1.6	6	9.5	25	39.7	31	**49.2**

To better analyse *knowledge of swallowing ability*, the results of each group of questions were added together. In other words, for *knowledge of swallowing ability,* a minimum score of 15 and a maximum of 75 points were considered. These values were converted into percentage values so that they could be compared, ranging from 0% (15 points) to 100% (75 points).

For the variables relating to *knowledge about relevant data* and *compensatory strategies*, a minimum score of

10 and a maximum of 50 points were considered. These values were transformed into percentage values and could vary between 0% (10 points) and 100% (50 points).

knowledge of swallowing ability varies between a minimum of 45.00%, and maximum of 96,67%, with a mean of 67,28% (+/-12.087). *Knowledge about relevant data* varies between a minimum of 45,00%, and maximum of 100,00%, with a mean of 75.87% (+/- 15.385). *Knowledge about compensatory strategies* varies between a minimum of 42.50% and maximum of 100,00%, with a mean of 65.43% (+/-13.526).

To better analyse knowledge, the results were grouped into *poor knowledge* (<25%), *moderate knowledge* (between 26% and 74%) and *high knowledge* (>75%). We can see that the majority shows moderate *knowledge of swallowing ability* (46.8%), *relevant data* (37.1%), and *compensatory strategies* (56.5%).

Inferential analysis

The relationship between the dependent variable *knowledge of swallowing ability* and the independent variables (*age, gender, professional experience, training in dysphagia, knowledge about relevant data* and *knowledge about compensatory swallowing strategies*) was studied though Pearson correlations.

The negative correlation values observed for the factors *age* (r=-0.144; p=0.113) and *professional experience* (r=-0.163; p=0.103), suggest that the lower the *age* and *professional experience*, the greater the *knowledge of swallowing ability*, however the differences are not statistically significant. On the other hand, *training in dysphagia* (r=0.458; p=0.000), *knowledge about relevant data* (r=0.602; p=0.000) and *knowledge about compensatory strategies* (r=0.675; p=0.000), were predictors of *knowledge of swallowing ability*.

A multiple linear regression was then carried out using the stepwise method to test the predictive value of the independent variables on the dependent variable (see Table 4). The first variable to enter the regression model was factor 6 (*knowledge about compensatory strategies* in dysphagia), as it has the highest correlation coefficient in absolute terms with

knowledge of swallowing ability, explaining 48.9 per cent of its variability with a regression standard error of 0.082, corresponding to the difference between the observed and estimated indices of *knowledge of swallowing ability*.

The second step led to the addition of factor 5 (*knowledge about relevant data* to diagnose dysphagia). These two variables together explained 76.9 per cent of *knowledge of swallowing ability*, with the estimated error dropping slightly to 0.071.

In the third and final step, we observed that factor 3 (professional experience) was associated. The correlation between these three variables and *knowledge of swallowing ability* is high (r = 0.787), and the percentage of variance explained is now 61.9% with an estimation error of 7.710. In other words, the model explains around 61.9 per cent of the observed variation in *knowledge of swallowing ability* in the different variables (see Table 4).

The F-test is statistically significant, leading to the rejection of nullity between the factors under study. As the t-value is statistically significant, we can infer that the variables included in the regression model have explanatory power for *knowledge of swallowing ability*.

The standardised beta coefficients show that knowledge of compensatory strategies has the highest predictive value, followed by knowledge of data relevant to the diagnosis of dysphagia and finally length of professional practice. The first two variables establish a direct relationship with *knowledge of swallowing ability* and the latter an inverse relationship. It can therefore be said that the greater the *knowledge of compensatory swallowing strategies*, such as *data relevant* to the diagnosis of dysphagia, and the shorter *professional experience*, the greater the *knowledge of swallowing ability*.

VIF (variance inflation factor) was used to diagnose multicollinearity, which ranged from (VIF = 1.021) for time spent working to (VIF = 1.279) for compensatory strategies, and the results show that the factors in the model are not collinear, as they are less than 5.0, as recommended by Pestana & Gageiro (2014).

Using the constant and the β coefficients (see Table 4), we can determine the final adjusted model for *knowledge of swallowing ability*, which in this case is given by the following formula:

knowledge of swallowing ability = 19.479 + 0.489 (compensatory strategies) + 0.280 (relevant data) + (0.353 professional experience)

Table 4 - Multiple linear regression with the dependent variable

DEPENDENT VARIABLE =	*"knowledge of swallowing ability"*

R Multiple = 0.787

R^2 = 0.619

R^2 Adjusted = 0.600

Standard error of the estimate = 7.710

F= 7.839

p= 0,007

REGRESSION SUMMARY						
Variables Independents	Standardized coefficient	Standard regression error	R^2 increment	t	Sig.	VIF
Constant	19.479	5.949	---	3.274	0.002*	---
Compensatory strategies	0.489	0.082	0.544	5.941	<0.001*	1.279
Relevant data	0.280	0.071	0.356	3.916	<0.001*	1.259
Professional experience	-0.353	0.126	-0.229	-2.800	0.007*	1.021

ANÁLISE DE VARIÂNCIA					
Fonte	Sum Squares	gl	Average Squares	F	p
Regression	5608.110	3	1869.370		
Residual	3447.983	58	59.448	31.445	<0.001*
Total	9056.093	61	---		

According to the results, we can say that the hypothesis was partially accepted, with the following variables being predictive of *knowledge of swallowing ability*: *knowledge of relevant data to diagnose dysphagia, knowledge of compensatory swallowing strategies, professional experience*.

DISCUSSION:

Our results are much in line with the study by Pereira et al (2023), based on semi-structured interviews with 10 nurses and observation of swallowing assessment practices with 12 nurses from an Intensive Care Unit in a hospital in the northern region of Portugal. Although their practices, when assessing swallowing and approaching people with dysphagia, were in line with the literature, their interventions were not uniform and systematic, and they expressed training needs. The fact that they hadn't had any training in dysphagia, became a factor that hindered their practice. However, the author states that the presence of the Rehabilitation Nurse was a facilitating factor in the assessment of swallowing, aided by the existence of a protocol.

Similarly, evidence from the study by Seedat & Strime (2021) shows that most nurses felt they needed more training to deal with dysphagia. The authors described nurses' experiences of caring for dysphagic patients and their opinion on the need for more training in two hospitals in Johannesburg, South Africa. They found that nurses with more time in the profession had greater knowledge of dysphagia. However, they also had gaps in their knowledge of dysphagia, and the inexperience of younger nurses and contextual challenges had a negative impact on the care efficiency for patients with dysphagia. Nurses recognised the need for more training in the area, given that they play a central role in caring for patients with dysphagia in acute situations, which is reinforced by the team of Rehabilitation Nurses in the Stroke Unit of a Portuguese hospital (Batista et al, 2023).

Behera et al. (2018), in their study of 130 nurses, with an average age of 29.16±11.81 years, mostly female (64 per cent), found that 87 per cent demonstrated adequate knowledge of the pathologies that can result in altered swallowing and 94.66 per cent reported that they have the knowledge to identify cases in which patients show some sign or symptom of altered swallowing. This was particularly true of nurses with more time in the profession.

These results contradict our findings; however, the knowledge assessment can depend on the type of questions that were made, can depend on the new nursing course programs (different countries), on the lack of continuous education for more experienced professionals.

Knight et al. (2020), in their study on the management of oropharyngeal dysphagia, found that nurses working in hospital settings had significantly better knowledge than those working in primary healthcare settings, with the former scoring significantly higher in the three dimensions assessed, i.e. the study revealed that nurses with knowledge of compensatory strategies had more knowledge of the relevant data for diagnosing dysphagia. Which validates our findings.

CONCLUSION:

Dysphagia is a clinical condition characterised by difficulty in swallowing, which can occur at any stage or between stages of swallowing, making it impossible to swallow safely and efficiently. It is therefore a condition that has significant implications for the person in terms of nutrition, hydration, and lung health. Scientific evidence shows that dysphagia has a very significant impact on people's lives at a personal and clinical level. Therefore, we believe that the commitment to safe nutrition and hydration, should be a focus of greater attention for nurses, considering the impact it has on the person's/family's quality of life.

The higher the knowledge about compensatory swallowing strategies and the knowledge about the relevant data for diagnosing dysphagia, and the shorter the time spent in professional practice, the greater the nurses' knowledge about swallowing ability. Some of these results, can sound contradictious however, they can reveal a lack of continuous education for more experienced nurses.

Implications for practice: A greater commitment to training nurses in dysphagia diagnosis and appropriate intervention is suggested. We believe that the development of projects aimed at continuous quality improvement can benefit patient safety.

REFERENCES:

Antunes, V. (2022). On Nursing Research and Evidence-Based Practice: Topics for researchers and practitioners. International Healthcare Review (online), 1(1). https://doi.org/10.56226/ihr.v1i1.12

Batista, S. M. L. P., Campos, D., Ramos, D., Figueiredo, E., Marques, F., Cardoso, M., & Caldeira, S. (2023). Disfagia pós-AVC: importância de uma avaliação de enfermagem estruturada na prevenção de complicações. Studies In Health Sciences, 4(2), 311–326. https://doi.org/10.54022/shsv4n2-002

Behera, A., Read, D., Jackson, N., Saour, B., Alshekhlee, D., & Mosier, A. K. (2018). A Validated Swallow Screener for Dysphagia and Aspiration in Patients with Stroke. Journal of stroke and cerebrovascular diseases, 27(7), 1897–1904. https://doi.org/10.1016/j.jstrokecerebrovasdis.2018.02.037

Chen, S., & Qin, Y. (2023). On Ethics, Biomedical Education and Health Promotion: International and Chinese Perspectives. International Healthcare Review (online). https://doi.org/10.56226/46

Chen, Y., Moreira, P., Liu, W., Monachino, M., Nguyen, T. L. H., & Wang, A. (2022). Is there a gap between artificial intelligence applications and priorities in health care and nursing management? Journal of Nursing Management, 1–7. https://doi.org/10.1111/jonm.13851

Dsouza B, Prabhu R, Unnikrishnan B, Ballal S, Mundkur SC, Chandra Sekaran V, Shetty A, and Moreira, Paulo. (2023) Effect of Educational Intervention on Knowledge and Level of Adherence among Hemodialysis Patients: A Randomized Controlled Trial. Glob Health Epidemiol Genom. 2023 Mar 31;2023:4295613. doi: 10.1155/2023/4295613. PMID: 37033597; PMCID: PMC10081894.   https://ops.hindawi.com/author/4295613/

Dsouza, B. (2022). On Sustainable Health Systems: A Research Emergency in Pandemic times. International Healthcare Review (online), 1(1). https://doi.org/10.56226/ihr.v1i1.7

Dziewas, R., Allescher, HD., Aroyo, I. et al. (2021). Diagnosis and treatment of neurogenic dysphagia – S1 guideline of the German Society of Neurology. Neurol. Res. Pract.; 23, 2-30. https://doi.org/10.1186/s42466-021-00122-3

Ferreira, F. F., Fernandes, L. V., & Oliveira, I. de J. (2022). Prevalência da disfagia em idosos institucionalizados. Revista Portuguesa De Enfermagem De Reabilitação. https://doi.org/10.33194/rper.2022.218

Galvão, J., Rodrigues, M., Sabino, P., & Santos, R. (2022). Influência das dotações seguras de enfermeiros na segurança dos cuidados prestados ao paciente internado: uma revisão sistemática. Revista Ibero-Americana De Humanidades, Ciências E Educação, 8(2), 546–556. https://doi.org/10.51891/rease.v8i2.4204

Han T, Han M, Moreira P, Song H, Li P and Zhang Z (2023) Association between specific social activities and depressive symptoms among older adults: A study of urban-rural differences in China. Frontiers in Public Health 11:1099260. DOI: 10.3389/fpubh.2023.1099260 .

Jacennik, B.; Zawadzka-Gosk, E.; Moreira, J.P.; Glinkowski, W.M. Evaluating Patients' Experiences with Healthcare Services: Extracting Domain and Language-Specific Information from Free-Text Narratives. Int. J. Environ. Res. Public Health 2022, 19, 10182. https://doi.org/10.3390/ ijerph191610182

Kehinde, O., Dixon-Lawson, K., & Mendelsohn, A. (2023). On Community Pharmacists and Promotion of Lifestyle Modification in Adults with Hypertension: Practice Protocol. International Healthcare Review (online). https://doi.org/10.56226/49

Knight, K., Pillay, B., Van der Linde, J., & Krüger, E. (2020). Nurses' knowledge of stroke-related oropharyngeal dysphagia in the Eastern Cape, South Africa. The South African journal of communication disorders, 67(1), e1–e7. https://doi.org/10.4102/sajcd.v67i1.703

Li, N., GUO, M., YOU, S., & JI, H. (2022). On Patient Readiness for Hospital Discharge: an update on recent Evidence. International Healthcare Review (online). https://doi.org/10.56226/ihr.v1i2.30

Lloyd Williams, D. (2022). On Healthcare Research Priorities in the USA : From Long COVID to Precision Health, what else is new?. International Healthcare Review (online), 1(1). https://doi.org/10.56226/ihr.v1i1.14

Monachino, M. . (2022). On Healthcare Research for Disease Prevention: Critical Knowledge Gaps in European Public Health. International Healthcare Review (online), 1(1). https://doi.org/10.56226/ihr.v1i1.6

Moreira, P. (2022). On New Clinical Research Methods and Technologies: From decentralised designs to Artificial Intelligence. International Healthcare Review (online), 1(1). https://doi.org/10.56226/ihr.v1i1.11

Nguyen, T. L. H. (2022). On Improving Healthcare with a world perspective: Evidence for Global Health Programs. International Healthcare Review (online), 1(1). https://doi.org/10.56226/ihr.v1i1.10

Oliveira, D., Batista, C., & Silva, R. (2021). [ID 41] Qualidade de vida em disfagia pós-acidente vascular encefálico. Revista Vitae - Educação, Saúde & Meio Ambiente, 1(9). Recuperado de https://revistas.unicerp.edu.br/index.php/vitae/article/view/2525-2771-v1n9-4

REFERENCES (cont)

Oliveira, D., Batista, C., & Silva, R. (2021). [ID 41] Qualidade de vida em disfagia pós-acidente vascular encefálico. Revista Vitae - Educação, Saúde & Meio Ambiente, 1(9). Recuperado de https://revistas.unicerp.edu.br/index.php/vitae/article/view/2525-2771-v1n9-4

Pereira de Sá, N. M., Marques de Oliveira, F., Gonçalves Sacramento, C. L., dos Santos Oliveira, M. I., & Tavares Almeida, F. L. (2023). Programa de Enfermagem de Reabilitação na pessoa com Deglutição Comprometida em contexto de AVC: Estudo Exploratório. Revista Portuguesa De Enfermagem De Reabilitação, 6(1), e265. https://doi.org/10.33194/rper.2023.265

Pereira, I., Galvão, J., & Rodrigues, M. (2022). Papel do enfermeiro de reabilitação na promoção da independência dos doentes com AVC. Revista Ibero-Americana De Humanidades, Ciências E Educação, 8(2), 109–127. https://doi.org/10.51891/rease.v8i2.4140

Seedat, J. & Strime, N. (2022). 'Finishing that plate of food …' The role of the nurse caring for the patient with dysphagia, South African Journal of Clinical Nutrition, 35:2, 39-43, https://doi.org/10.1080/16070658.2021.1940717

Tian, M., Li , X., Zhou, F., Wang , Y., Wang, Q., Pan , N., & Ji , H. (2023). On the Psychological experiences of Hematopoietic stem cell donors: an update on International Evidence. International Healthcare Review (online). https://doi.org/10.56226/31

Trapl, M., Enderle, P., Nowotny, M., Teuschl, Y., Matz, K., Dachenhausen, A., & Brainin, M. (2007). Dysphagia bedside screening for acute-stroke patients: The gugging swallowing screen. Stroke, 38, 2948–2952. https://doi.org/10.1161/STROKEAHA.107.483933

World Gastroenterology Organisation (2014). WGO Practice Guideline, Dysphagia. https://www.worldgastroenterology.org/guidelines/dysphagia

Zhang, L., Lei, J., Zhang, J. et al. Undiagnosed Long COVID-19 in China Among Non-vaccinated Individuals: Identifying Persistent Symptoms and Impacts on Patients' Health-Related Quality of Life. J Epidemiol Glob Health (2022). https://doi.org/10.1007/s44197-022-00079-9

Zhang, L., Moreira, J. P., & Xi, Y. (2022). What is Long COVID-19? Clarifying Definitions and Symptoms. International Healthcare Review (online). https://doi.org/10.56226/ihr.v1i2.28