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PERCEPTION OF THE RISK OF DYSPHAGIA IN ADULTS AND OLDER ADULTS IN A CLINIC IN THE CITY OF SINCELEJO - SUCRE, COLOMBIA

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Abstract
A cross-sectional study was conducted to evaluate the perception of dysphagia symptoms among adults and older adults with comorbidities at Clínica Santa María S.A.S., using the EAT-10 protocol. This study utilized a quantitative approach and a non-probabilistic sampling method to select a sample of 96 participants. The Glasgow scale was used to confirm that the participants were alert, and a checklist was used to collect personal, sociodemographic, and clinical history data. The EAT-10 dysphagia screening questionnaire was administered to the participants, and the Statistical Package for the Social Sciences (SPSS) version 25 program was used for statistical analysis. The results revealed that the average age of the participants was 69 years, and there were more females than males. The most commonly associated pathology was neurological, followed by respiration. Hypertension, diabetes, and cerebrovascular disease were the most frequent pathological conditions among the participants. Additionally, 84% of the sample reported symptoms that posed a risk of dysphagia regardless of the associated morbidity. Based on these findings, it can be concluded that there was a high perception of symptoms associated with the risk of dysphagia among the study participants.

Keywords: Perception, Dysphagia, Age, Risk, Comorbidity, Safety and Efficiency.

1. Introduction

Dysphagia is an alteration in the swallowing process that occurs when there are problems safely moving food or liquid from the mouth to the stomach, without entering the respiratory system. This can result in inefficiency and decreased safety of swallowing and can affect individuals of all ages and genders. Dysphagia can be caused by various diseases, disorders, and injuries and is often associated with neurological disorders because of the important role that the nervous system plays in the swallowing process. Different pathophysiological mechanisms may cause dysphagia depending on the underlying disease and associated structural and functional impairments. Dysphagia is common among individuals hospitalized with neurological disorders, cerebrovascular diseases, head and neck cancer, and in critical care and/or elderly patients, and can have serious consequences, such as malnutrition or pneumonia.

Nanjarí et al. (2021) detail the clinical characteristics of hospitalized patients with suspected dysphagia, collecting demographic information and clinical history. The study found that the patients were predominantly male, older adults aged between 60 and 90 years, and that their primary medical reasons for admission were neurological pathologies, cerebrovascular accidents (CVA), and respiratory diseases. Additionally, the patients had comorbidities, such as high blood pressure, type 2 diabetes mellitus (DM2), and a clinical history of endotracheal intubation during hospitalization. In the direct evaluation of food, the study found alterations in swallowing effectiveness, with the most frequent being multiple swallows in liquid and a deficit in bolus formation for solids. In terms of safety, the most common alteration was the presence of cough for liquids and neurogenic dysphagia in most of the subjects studied, with a neurogenic etiology. Based on these findings, the researchers concluded that extubated and tracheostomized patients as well as older people with neurological disorders or respiratory pathologies are potential candidates for swallowing evaluation. Therefore, it is essential to establish referral programs for early detection of dysphagia to avoid subsequent complications during hospitalization.

According to Lawal and Shaker (2008), the present state of knowledge regarding the epidemiology of dysphagia is limited, mainly because of the prevalence of diseases that cause dysphagia and vary across different regions and continents. Moreover, diagnosing dysphagia can be difficult, as prevalence rates can differ based on the instrument or method employed as well as the associated pathologies. Consequently, dysphagia presents a range of symptoms and signs that are used in various screening methods, formal clinical evaluations of swallowing, and instrumental techniques to detect its presence, identify physiological deficits, and assess its severity, as per Suárez-Escudero et al. (2023). The lack of understanding of dysphagia in the general population contributes to underdiagnosis. Therefore, it is essential to estimate the frequency and origin of dysphagia in the adult population of Colombia and to make greater efforts to nationally characterize its epidemiology, as recommended by Frías and Martínez (2018).

In the clinical observations made by the Speech Therapy Program's teachers and students at the University of Sucre, Colombia, a significant number of users with suspected dysphagia and associated health issues were noticed. Unfortunately, the lack of screening tests that aid in the early detection of swallowing disorders has resulted in delayed diagnosis, often requiring interventions such as gastrostomy. The EAT-10 is now considered a valid and reliable self-assessment tool for measuring the risk of dysphagia and identifying those who need early multidisciplinary intervention (Belafsky et al., 2008). However, the absence of these screening protocols hinders the timely detection of dysphagia risk, thus preventing secondary health prevention in a timely manner. Furthermore, there is a need to increase our knowledge on this topic by characterizing patients with dysphagia symptoms, as there are insufficient publications on this subject.

Therefore, this study aimed to understand the perception of dysphagia symptoms using the EAT-10 protocol in adults and older adults with clinical comorbidities who attended the Santa María Clinic in Sincelejo, Colombia. By incorporating and applying screening protocols in inmate users with comorbidities, early detection care routes will be activated, along with the performance of objective and diagnostic tests to verify the swallowing condition, enabling timely treatment.

Healthcare providers should be well versed in accurately identifying symptoms related to dysphagia. It is crucial to realize that speech therapists, who possess specialized knowledge of communicative disorders and oral-pharyngeal function, are the most suitable professionals for conducting this evaluation using assessment methods such as swallowing screenings. The Eating Assessment Tool (EAT-10) is a valuable instrument that helps evaluate the risk of dysphagia and facilitates timely referrals for further specialized evaluations. These evaluations involved an instrumental review to determine the presence or absence of dysphagia, providing speech therapists with a clearer understanding of the disorder during the analysis and treatment process.

2. Materials and methods

This study used a quantitative, descriptive, cross-sectional approach to study 96 adults and older adults with associated morbidities who were hospitalized in the internal medicine department of Clínica Santa María S.A.S. The study excluded patients with a history of cognitive impairment or mental disorders that affected their level of consciousness, as well as those with a life expectancy of less than 8 months. To ensure that the evaluation was conducted fairly, the researchers obtained the necessary permits to obtain informed consent from the participants, obtained approval from the bioethics committee of Clínica Santa María S.A.S., and received approval from the Speech Therapy program at the University of Sucre. Additionally, the researchers used the Glasgow Scale and researcher-subject interaction to determine whether the patient was alert and in the best possible state of consciousness.

The DANE survey was used as a tool to gather information about the sociodemographic profile of patients, as well as a checklist to collect medical-pathological data from their medical history. Additionally, the EAT-10 dysphagia screening questionnaire was administered to patients directly using a validated instrument in Colombia (Giraldo-Cadavid et al., 2016). This self-assessment and direct scoring scale is subjective and evaluates specific symptoms of dysphagia on a scale of 0–4 points. A score of 0 indicates the absence of a problem, whereas a score of 4 indicates a serious issue. A score of 2 or less indicated the absence of dysphagia, a score of 6 or more suggested a risk of dysphagia, and a score of 15 or greater indicated a diagnosis of dysphagia according to the average score of the protocol scale (EAT-10). Statistical analyses were conducted using the Statistical Package for the Social Sciences (SPSS) version 25. Measures of central tendency were calculated for the quantitative variables included in the study, allowing for a univariate descriptive analysis. Frequency distribution tables were used to describe the behavior of the variables included in the study and to estimate the corresponding absolute and relative frequencies.

3. Results

When studying sociodemographic variables such as age, sex, type of affiliation, location, socioeconomic status, and average monthly income, it was found that out of the 96 users of the internal medicine hospitalization service, the age range was between 18 and 97 years, with an average age of 69 years. The majority of the patients were female, accounting for 56% of the sample, and urban areas were the primary location (57.3 %), while 42.7% were in rural areas. The majority of the sample (65.6 %) were in socioeconomic stratum level 1, with 74% earning less than the current legal minimum wage. A comprehensive analysis of these factors is presented in Table 1.

Table 1. Sociodemographic health factors

Sex	**Frequency**	**Percentage**
Female	54	56%
Male	42	44%
Total	96	100%
Area	**Frequency**	**Percentage**
Urban	55	57,3%
Rural	41	42,7%
Total	96	100%
Socioeconomic Stratum	**Frequency**	**Percentage**
Stratum 1	63	65,6%
Stratum 2	21	21,9%
Stratum 3	8	8,3%
Stratum 4	3	3,1%
Stratum 6	1	1,0%
Average Monthly Income	**Frequency**	**Percentage**

Less than 1 SMML	71	74%
Between 1 and 2 SMML	24	25%
Between 2 and 3 SMML	1	1,0%
Total	96	100%

Regarding the health-promoting entity (HPE) and health affiliation, the subsidized regime is the most frequent form of social security affiliation, accounting for 73% of all cases. This is followed to a lesser extent by the contributory regime, which accounts for 24% of all the cases. However, when it comes to the health promotion company with the highest number of affiliates, Nueva EPS takes the lead at 36%, followed closely by Mutual SER at 32% (see Table 2 for more information).

Table 2. Sociodemographic health factors (HPE/Type of affiliation)

HPE/Affiliation Type	Subsidized	Contributory	Special	Frequency	HPE Percentage
Trust Alliance	0	0	1	1	1,5%
Sucre Health Directorate	0	0	2	2	2,5%
Family from Colombia	11	0	0	11	11%
Mutual Ser	30	1	0	31	32%
Nueva Eps	22	13	0	35	36%
Salud Total	7	9	0	16	17%
Total	70	23	3	96	100%
Percentage by Regime	73%	24%	3%		

Table 3 shows the most common clinical diagnoses upon hospital admission, with neurological disorders being the most frequent (22%), including ischemic stroke as a prominent example. Respiratory disorders ranked second (20%), and mainly comprised chronic obstructive pulmonary disease, acute respiratory distress syndrome, and pneumonia in elderly patients.

Table 3. Admission medical diagnoses

Diagnosis	Frequency	Percentage
Cardiovascular	6	6%
Oncological	3	3%
Systemic	13	14%
Respiratory	19	20%
Neurological	21	22%
Autoimmune	2	2%
Dermatological	5	5%
Gastrointestinal	13	14%
Orthopedic	4	4%
Others	10	10%
Total	96	100%

In relation to comorbidities, the majority of patients, at 68.7%, exhibited arterial hypertension (HTN). Diabetes and cerebrovascular disease were present in equal percentages (29.2% each), whereas Parkinson's was less prevalent, accounting for 7.2% of the patient population (Table 4).

Table 4. Clinical Comorbidities

Morbidity	Yes		No	
	Frequency	Percentage	Frequency	Percentage
Hypertension	66	68,7%	30	3,1%
Diabetes	28	29,2%	68	70,8%
CVD	28	29,2%	68	70,8%
Parkinson's	7	7,3%	89	92,7%

In this study, a significant proportion of the sample, comprising 84% (81 of 96 individuals), exhibited symptoms that put them at risk of developing dysphagia. This finding remained consistent regardless of the accompanying health issues. The data are presented in Table 5 for reference.

Table 5. Perception of the risk of dysphagia

Dysphagia Risk Perception			
Risk free		**With Risk**	
Frequency	**Percentage**	**Frequency**	**Percentage**
15	16%	81	84%

The level of dedication to efficiency/safety and aspiration risk was assessed based on the symptoms reported by study participants (see Table 6). The majority of the subjects (50) experienced symptoms that indicated a risk in terms of efficiency and safety (52.1%), while 30 patients reported symptoms that posed a risk of aspiration (32.3%).

Table 6. Degree of commitment at the level of efficiency/safety and aspiration risk

Perception	**Frequency**	**Percentage**
Does not perceive risk	15	15,6%
Perceives risk in the efficiency and safety component	50	52,1%
Perceives risk of aspiration	30	32,3%
Total	96	100%

4. Discussion

The average age of the sample in the sociodemographic data was 69 years, which aligns with the life cycle stage characterized by the elderly. Female sex was predominant in this group, and older adult women were more likely to experience difficulties in their swallowing process. The relationship between age and swallowing problems is due to physiological and anatomical changes that occur, such as loss of muscle strength, decreased sensitivity, and altered muscle coordination. These changes can increase the risk for dysphagia in adults.

Although research suggests that women may be more susceptible to swallowing problems, studies have reported conflicting findings regarding the prevalence of dysphagia in the male sex (Suárez-Escudero et al. 2023). Olchik et al. (2016) reported that women are more likely to experience dysphagia; however, none of these studies supports this finding. Turley and Cohen (2009) highlighted that older people, regardless of sex, are more likely to experience functional changes related to aging and have a higher risk of swallowing disorders due to associated diseases. The relationship between sex and swallowing problems remains debatable in the literature.

Venegas et al. (2020) highlighted the prevalence of dysphagia in older adults, which is influenced by a rise in neurological disorders, sarcopenia, and polypharmacy, which are often accompanied by aging. Older adults aged 65 years and above may exhibit variations or adaptations related to their stage in the life cycle and comorbidities, as well as oropharyngeal changes caused by aging that affect neurophysiology and anatomy (Ambiado-Lillo and Borjas, 2021). Consequently, these age-related changes can result in health complications, including difficulty in swallowing food, making age one of the variables most strongly linked to the risk of dysphagia in this population, which is particularly susceptible to chronic diseases (Silveira et al., 2023; Amaro et al., 2018). Similarly, another study found that the majority of the hospitalized sample (57.3%) resided in urban areas, followed by rural areas (42.7%). The location of an urban area makes it easier for users from diverse backgrounds to access the clinic's facilities and services, which is a strategic advantage. Moreover, socioeconomic status and/or stratification place the largest number of users at level 1 (65.6%), with 74% reporting lower than the current legal monthly minimum wage in 2023 for economic labor income. These

results indicate a social determinant of health, which suggests limited access to better health services because most people rely on informal or poorly paid jobs and have limited access to health education and medical attention.

According to Viáfara-López et al. (2021), limited access to health services is caused by accessibility gaps related to socioeconomic status, as higher disease incidence rates are correlated with poverty. This suggests that individuals with low socioeconomic status have limited access to and the ability to exercise their right to health because of the highly fragmented health security system in Colombia.

It is important to note that the most common type of social security affiliation in Colombia is subsidized, accounting for 73% of affiliates, with Nueva EPS being the largest health promotion company (36%), followed by Mutual SER (32%). The prevalence of informal jobs among the population contributes to high rates of subsidized affiliation, which leads to inequities in access to high-quality health services. Consequently, individuals in the subsidized regime are the most vulnerable group when it comes to accessing healthcare through financing (Londoño and Nieto, 2001).

These outcomes are not far removed from those reported in the National Quality of Life Survey conducted by DANE for the year 2022 (ECV). This survey, which covers the entire country, reveals that affiliation with the General Social Security System in health (SGSSS) in Colombia reached 94.7% in 2022, which is the highest level in recent years. This is largely due to greater affiliation with the subsidized regime, particularly in urban areas. Consequently, infectious and communicable diseases associated with poverty are more prevalent in this region (Vargas-Lorenzo et al., 2010).

Analyzing medical diagnoses upon hospital admission, it is evident that neurological diseases, particularly ischemic stroke, are the most common, followed by non-neurogenic causes, such as respiratory diseases, including chronic obstructive disease, acute respiratory failure, and pneumonia. Consequently, damage to the central nervous system at multiple levels due to stroke and neurodegenerative diseases leads to swallowing dysfunction. Thus, both ischemic and hemorrhagic strokes are leading causes of swallowing disorders (Dray et al., 1998).

These health conditions are closely connected to alterations in the swallowing process, which can negatively affect the quality of life of affected individuals. Swallowing pathology is a common condition associated with respiratory and neurological diseases, particularly those that alter sensorimotor components and can disrupt various phases of swallowing (Caviedes et al., 2002). Respiratory diseases can also lead to swallowing disorders by compromising the protective mechanisms of the upper airway and coordination between breathing and swallowing, possibly resulting in laryngeal penetration (Cámpora and Falduti, 2019). Pérez et al. (2018) found a high prevalence of undiagnosed dysphagia in patients seen at the Neurology outpatient clinic, emphasizing the importance of using instruments and conducting routine studies to detect dysphagia in patients with neurological diseases, especially in older populations. Similarly, Sala et al. (1998) reported a high prevalence of dysphagia in stroke patients who often experience respiratory infections, malnutrition, and a higher risk of death. Nanjarí et al. (2021) found that the majority of participants had comorbidities, such as hypertension (68.7%), diabetes (29.2%), and cerebrovascular disease (29.2%), which can coexist in the same individual and increase the likelihood of experiencing symptoms related to the risk of dysphagia.

According to the study, 84% of the sample showed symptoms that posed a risk of dysphagia, regardless of the level of associated morbidity and degree of efficiency/safety commitment. In terms of aspiration risk, 32.3% of patients perceived symptoms that posed a risk, while 52.1% perceived symptoms that posed a risk in the efficiency and safety component. These symptoms, such as the effort to swallow solid and/or liquid foods, cough when eating, sensation of food stuck in the throat, and pain when swallowing, directly affect the efficiency and safety of swallowing. However, the clinical symptoms of dysphagia are usually nonspecific, which makes it difficult to identify all patients with dysphagia. Some common symptoms may include problems with chewing; difficulty initiating swallowing; nasal regurgitation; drooling; difficulty managing secretions; alterations in voice during and after a meal; coughing before, during, or after swallowing; or episodes of choking

while eating. Older adults with oropharyngeal dysphagia typically exhibit mixed disorders that involve both safety and efficacy as opposed to isolated safety disorders, as reported by Silviera et al. (2011).

5. Conclusions

The perception of the risk of dysphagia among adults and older adults with comorbidities who visited the Santa María S. A. clinic in Sincelejo, Colombia, was high. Age and sex were identified as factors contributing to the perception of the risk of dysphagia. The older adult population, especially women, is more likely to experience dysphagia due to the various changes that occur during aging, such as structural, physiological, and hormonal changes. However, these symptoms can occur at any age and may be influenced by other factors such as socioeconomic status, educational level, and social demographics. These factors can make it more difficult for individuals to access healthcare services and may affect their quality of life.

The participants in this study mostly had conditions that increased their perception of the symptoms related to the risk of dysphagia, such as neurological, respiratory, and chronic health conditions (including hypertension and diabetes). These conditions are often associated with swallowing problems and may affect the efficiency and safety of the swallowing process, as indicated by the Eating Assessment Tool EAT-10.

This study found that participants who perceived a high risk of dysphagia reported symptoms, such as feeling like food being stuck in their throat, coughing during meals, difficulty swallowing liquids and solids, and pain while swallowing. These symptoms are directly linked to the efficiency and safety components of the swallowing process, indicating a higher risk of dysphagia in the study population.

References

1. Ambiado-Lillo, M., y Borjas, J. (2021). Presbifagia Una mirada a los procesos de alimentación y deglución en los adultos mayores. *Revista Areté, 21*(1), 105 -112. https: //arete.ibero.edu.co /article/view/2129
2. Belafsky, P., Mouadeb, D., Rees, C., Pryor, J., Postma, G., Allen, J. & Leonard, R. (2008). Validity and reliability of the Eating Assessment Tool (EAT-10). *Ann Otol Rhinol Laryngol, 117*(12),919-924. https://pubmed.ncbi.nlm.nih.gov/19140539/
3. Cámpora, H. y Falduti, A. (2019). *Deglución de la A a la Z*. (2nd ed). Ediciones Journal.
4. Caviedes, I., Buchi, D., Yazigi, R. y Lavado, P. (2002). Patología de la deglución y enfermedades respiratorias. *Rev. chil. enferm. Respir, 18* (1) 22 - 34. http://dx.doi.org/10.4067/S0717-73482002000100004
5. Clavé, P., Terré, R., De Kraa, M, Serra, M. (2004). Approaching oropharyngeal dysphagia. *Rev Esp Enferm Dig, 96*(2), 119–131.
6. Departamento Administrativo Nacional de Estadísticas DANE. (2022). *Encuesta Nacional de calidad de vida ECV*.
7. Dray, T., Hillel, A. & Miller, R. (1998). Dysphagia caused by neurologic deficits. *Otolaryngol Clin North Am, 31* (3), 507-524. https: //www.sciencedirect.com /science/article/abs/pii /S0030666505700670
8. Frías, J., y Martínez, J. (2018). Características de la disfagia en pacientes de un centro de gastroenterología en Bogotá DC, Colombia. *Revista Colombiana de Gastroenterología, 33*(4), 372-378. https://www.revistagastrocol.com/index.php/rcg/article/view/212/270
9. Giraldo-Cadavid, L., Gutiérrez-Achury, A., Ruales-Suárez, K., Rengifo-Varona, M., Barros, C., Posada, A., Romero, C. y Galvis, A. (2016). Validation of the Spanish Version of the Eating Assessment Tool-10 (EAT-10spa) in Colombia. A Blinded Prospective Cohort Study. *Dysphagia*, *31*(3), 398–406. http://dx.doi.org/10.1007/s00455-016-9690-1
10. Lawal, A. & Shaker, R. (2008). Esophageal dysphagia. *Physical medicine and Rehabilitation clinics of north america, 19*(4),729-745. https: //www.sciencedirect.com /science/article/abs

/pii/S1047965108000636
11. Londoño, J. y Nieto, E. (2001). Factores socio económicos y aseguramiento en salud en el área urbana de Colombia. *Rev Fac Nac Salud Publica*, *19*(1), 25−40. https://www.redalyc.org/articulo.oa?id=12019103
12. López-Liria., R, Fernández-Alonso, M., Vega-Ramírez, F., Salido-Campos, M., Padilla-Góngora, D. (2014). Treatment and rehabilitation of dysphagia following cerebrovascular disease. *Rev Neurol, 58*(6): 259–267. https://europepmc.org/article/med/24610693
13. Nazar, G., Ortega, A., y Fuentealba, I. (2009). Evaluación y manejo integral de la disfagia orofaríngea. *REV. MED. CLIN. CONDES, 20*(4), 449 – 457.
14. https://pesquisa.bvsalud.org/portal/resource/pt/lil-530390?lang=es
15. Nanjarí, A., Guzmán, C. y León, A. (2021). Caracterización de pacientes hospitalizados con sospecha dedisfagia en el Hospital San Camilo de San Felipe. *Revista de Otorrinolaringología y cirugía de Cabeza y Cuello,81*(4),502–509. https://www.scielo.cl/scielo.php?pid=S0718-48162021000400502&script=sci_abstract
16. Olchik, M., Ayre., A, Signorini, A. & Flores, L. (2016). Impacto das alterações das estruturas do sistema estomatognático na deglutição de idosos acamados. *Revista Brasileira de Ciências do Envelhecimiento Humano,13*(2),135-42. https://seer.upf.br/index.php/rbceh/article/view/5673
17. Pérez-Cruz, E., González-Muñoz, A., Barrientos-Jiménez, M., Camacho-Guerra, C., Tapia-Gómez, Y., Torres-González, K. y Uribe-Quiroz, G. (2018). Evaluación de la disfagia en pacientes con enfermedades neurológicas y su relación con riesgo de desnutrición. *Med. interna Méx, 34* (3), 359-365.
18. Sala, R., Muntó, M., De la Calle, J., Preciado, I., Miralles-Pérez, M., Cortés, A., Molla, R. y Alcaide, M. (1998). Alteraciones de la deglución en el accidente cerebrovascular: incidencia, historia natural y repercusiones sobre el estado nutricional, la morbilidad y la mortalidad. *Rev Neurol,27*(159),759-766. https://neurologia.com/articulo/98077/esp
19. Silveira Guijarro, L. J., Domingo García, V., Montero Fernández, N., Osuna del Pozo, C. M.ª, Álvarez Nebreda, L., & Serra-Rexach, J. A. (2011). Disfagia orofaríngea en ancianos ingresados en una unidad de convalecencia. *Nutrición Hospitalaria*, *26*(3), 501-510. https://scielo.isciii.es/scielo.php?script=sci_arttext&pid=S0212-16112011000300011
20. Silveira, R., Otero, M., Tomasi, E., Demarco, F., Gonzalez, M. & Moraes, R. (2023). Validation of dysphagia perception to predict the risk for dysphagia in non-institutionalized older adults. *Clinical Nutrition ESPEN*, (57), 358-336. https://doi.org/10.1016/j.clnesp.2023.07.014
21. Suárez-Escudero, J., Martínez-Moreno, L., Gómez-Ríos, E. y Rueda-Vallejo, Z. (2023). Percepción temporal de síntomas de disfagia en una cohorte de pacientes con disfagia orofaríngea neurogénica. *Salud UIS*, *55*, 1-13.
22. https://revistas.uis.edu.co/index.php/revistasaluduis/article/view/13230
23. Takizawa, C., Gemmell, E., Kenworthy, J. & Speyer, R. (2016). A Systematic Review of the Prevalence of Oropharyngeal Dysphagia in Stroke, Parkinson's Disease, Alzheimer's Disease, Head Injury, and Pneumonia. *Dysphagia*, *31*(3), 434-441.
24. Turley, R. & Cohen, S. (2009). Impact of voice and swallowing problems in the elderly. *Otolaryngol Head Neck Surg*, *140*(1), 33-6. doi: 10.1016/j.otohns.2008.10.010.
25. Vargas-Lorenzo, I., Vázquez-Navarrete, M. y Mogollón-Pérez, A. (2010). Acceso a la atención en salud en Colombia. *Rev Salud Publica,12*(5), 701−12.
26. Venegas, M., Navia, R., Fuentealba, I., Medina, M. & Kunstmann, P. (2020). Manejo hospitalario de la persona mayor con disfagia. *Rev Méd Clín Condes*, *31*(1), 50-64. https://www.elsevier.es/es-revista-revista-medica-clinica-las-condes-202-pdf S0716864019301117
27. Viáfara-López, C., Palacios-Quejada, G. y Banguera-Obregón, A. (2021). Inequidad por la condición étnico-racial en el aseguramiento de salud en Colombia: un estudio de corte transversal. *Revista panamericana de salud pública*, 45, 1-9. https://www.scielosp.org/article/rpsp/2021.v45/e18/

28. Villamayor Blanco, L. (2018). Prevalencia de la disfagia orofaríngea en una unidad de medicina interna y utilidad del Eating Assessment Tool 10 test en la evaluación rutinaria, *Rev. OFIL·ILAPHAR, 28*(2), 107-112. https://www.ilaphar.org/prevalencia-de-la-disfagia-orofaringea-en-una-unidad-de-medicina-interna-y-utilidad-del-eating-assessment-tool-10-test-en-la-evaluacion-rutinaria/
29. Warnecke, T., Labeit, B., Schroeder, J., Rekels, A., Ahring, S., Lapa, S., Claus, I., Muhle, P., Suntrup-Krueger, S. & Dziewas, R. (2021). Neurogenic Dysphagia: Systematic Review and Proposal of a Classification System. *Neurology, 96*(6), 876–889. https://pubmed.ncbi.nlm.nih.gov/33318164/