REVIEW

Quality of life in stroke patients with dysphagia: a systematic review

Qualité de vie des patients victimes d'un accident vasculaire cérébral avec dysphagie: une revue systématique

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Abstract

Introduction: Dysphagia is a common disorder among stroke patients. Dysphagia can lead to consequences that can negatively impact the quality of life (QoL) in stroke patients.

Aim: To investigate the impact of dysphagia on the QoL in stroke patients.

Methods: Relevant types of literature were searched from PubMed, Scopus, ProQuest, and Google Scholar databases from inception to July 2022. Peer-reviewed studies that aimed to determine the impact of dysphagia on the QoL in stroke patients were included regardless of the year of publication. The National Institutes of Health tool for observational cohort and cross-sectional studies was used to assess the methodological quality of the selected studies. In addition, data analysis was conducted using qualitative methodology with narrative synthesis.

Results: A total of 6 studies met the inclusion criteria with a total number of 381 participants. Only one study has good methodological quality while other studies have fair methodological quality. Dysphagia negatively impacts the QoL in stroke patients, especially those with severe dysphagia. However, after treatment, changes were evident through improved QoL and decreased severity of dysphagia. Moreover, the research found that patients with a higher educational level have a better QoL

Conclusion : Dysphagia has a negative impact on the QoL in stroke patients, so dysphagia in stroke patients should be diagnosed and treated as soon as possible to avoid poor QoL.

Key-words: Deglutition, deglutition disorders, depression, pleasure

Résumé

Introduction: La dysphagie est fréquente chez les patients victimes d'un accident vasculaire cérébral (AVC). La dysphagie peut avoir des conséquences qui peuvent avoir un impact négatif sur la qualité de vie (QDV) des patients victimes d'AVC.

Objectif : Etudier l'impact de la dysphagie sur la QDV des patients victimes d'AVC.

Méthodes : Les articles originaux pertinents ont été recherchés dans les bases de données PubMed, Scopus, ProQuest et Google Scholar dès la création jusqu'en juillet 2022. L'outil des National Institutes of Health pour les études de cohorts observationnelles et transversales a été utilisé pour évaluer la qualité méthodologique des études sélectionnées. L'analyse des données a été effectuée à l'aide d'une méthodologie qualitative avec synthèse narrative.

Résultats : Un total de 6 études remplissaient les critères d'inclusion avec un nombre total de 381 participants. Une seule étude a une bonne qualité méthodologique tandis que les autres 5 études ont une qualité méthodologique moyenne. La dysphagie a un impact négatif sur la QDV des patients victimes d'AVC, en particulier ceux souffrant de dysphagie sévère. Cependant, après le traitement, les changements étaient évidents grâce à une meilleure QDV et une diminution de la sévérité de la dysphagie. De plus, la recherche a révélé que les patients ayant un niveau d'éducation élevé ont une meilleure QDV.

Conclusion : La dysphagie a un impact négatif sur la QDV des patients victimes d'AVC. La dysphagie chez les patients victimes d'AVC doit être diagnostiquée et traitée d'une manière précoce pour éviter une mauvaise QDV.

Mots-clés : Déglutition, dépression, plaisir, troubles de la déglutition

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INTRODUCTION

Stroke is a brain-vascular disorder and is the main cause of death among people over sixty years of age and the second among those between 15–59 years of age (1,2). Dysphagia (i.e. difficulty swallowing) is a prevalent condition that affects about 8% of the global population (3). Dysphagia is often associated with stroke and affects 50% to 80% of stroke survivors (4-9). Following a stroke, dysphagia can cause complications such as aspiration pneumonia, dehydration, malnutrition and asphyxia, which may decrease stroke patients' quality of life (QoL) (10,11).

Dysphagia in stroke patients has psychosocial consequences because swallowing is an important part of the eating process (12,13), and eating is pleasurable and part of the social gesture (14). It is a psychological as well as a necessary daily action for optimum health that can be done alone or in a group (12).

A number of questionnaires were developed to examine the impact of dysphagia on the QoL (15). The Swallowing Quality-of-Life questionnaire (SWAL-QoL) is the most commonly used (16). It consists of 44 items that are distributed into 10 subscales: eating duration, eating desire, food selection, communication, burden, fear, social role, mental health, fatigue, and sleep (16). Another common questionnaire is the Dysphagia Handicap Index (DHI) (17). It is a 25-item questionnaire in three subsections: physical (9 items), functional (9 items), and emotional (7 items) (17).

Examining studies on the QoL of stroke patients with dysphagia from different populations could provide important insights and comparisons to guide overarching policies and practices (16,17). Therefore, this review aimed to conduct a systematic review of research on the effect of dysphagia on the QoL in stroke patients. Our hypothesis was that dysphagia negatively impacts the QoL of stroke patients.

METHODS

The review protocol was registered with the International Prospective Register of Systematic Reviews (PROSPERO) (CRD42022302798). During this systematic review's design, analysis, and reporting stages, the Preferred Reporting Items for Systematic Reviews and Meta-Analyses 2020 (PRISMA 2020) (18) criteria were followed. Our question was put under the PICO format to better select studies:

P (participants): Stroke patients with dysphagia.

I (intervention): Dysphagia therapy.

C (comparison): Stroke patients without dysphagia.

O (Outcomes): QoL in stroke patients with dysphagia.

Search strategy

A systematic search was conducted on PubMed, Scopus, ProQuest, and Google Scholar from inception to July 2022. Ancestry searches and forward citations of the articles that were included were used to check them against the inclusion and exclusion criteria. This study did not consider grey literature as we focused on peer-reviewed literature.

The search strategy was used by combining keywords and Boolean operators. We used the following combinations of terms in PubMed: ("dysphagia" OR "swallowing disorder"), AND ("quality of life" OR "pleasure" OR "social participation") AND ("stroke "). To limit the search to relevant articles on other databases, a more restrictive search string was used: "dysphagia" AND "quality of life" AND "stroke".

Eligibility criteria

The inclusion criteria included (1) All types of studies aiming to determine the impact of dysphagia on the QoL in stroke patients, (2) Studies until July 2022, (3) Complete articles in English, and (4) Peer-reviewed articles. Whereas, exclusion criteria included (1) systematic review studies, (2) qualitative studies, (3) articles without available full text, (4) articles not in English, (5) Grey literature, and (6) letters to editor.

Study selection

First, papers were screened for title and abstract by the five authors. Disagreements were solved by discussion. Then, three authors (MOH, FAR, NOR) independently applied the inclusion and exclusion criteria to the full texts, and the consensus was reached through discussion.

Methodological quality assessment

The National Institutes of Health (NIH) tool for observational cohort and cross-sectional studies (19) was used to assess the methodological quality of the selected quantitative studies. Three authors (MOH, FAR, AZM) independently evaluated each study, and disagreements were solved by discussion. Each of the six studies was scored according to 14 items. The total score is determined by summing all of the item scores as yes equals one, and no and not applicable equals zero. In addition, every study was given a score to describe it as poor, fair, or good, where a score from 0-4 was considered poor, 5-10 as fair, and 11-14 as good.

Data extraction

Three reviewers (MOH, FAI, NOR) used a standard data extraction form for the following study characteristics: first author, year of publication, location, sample size, study design, measurement tool, and results. Through this process, data about the QoL of stroke patients with dysphagia were extracted from the studies.

Data analysis

Data analysis was conducted using qualitative methodology with narrative synthesis. Included studies were categorized based on the variant of interest. Meta-analysis was not possible because of substantial differences across investigation methods

RESULTS

Literature search results

The systematic database search yielded 524 studies, with 13 extra publications discovered through ancestry searches and forward citations. After deleting duplicates, there were 162 records left to evaluate. A total of 138 studies were eliminated after the title and abstract screening, and the full text of the remaining 19 studies was assessed for eligibility. Finally, 6 articles met all inclusion criteria (Figure 1).

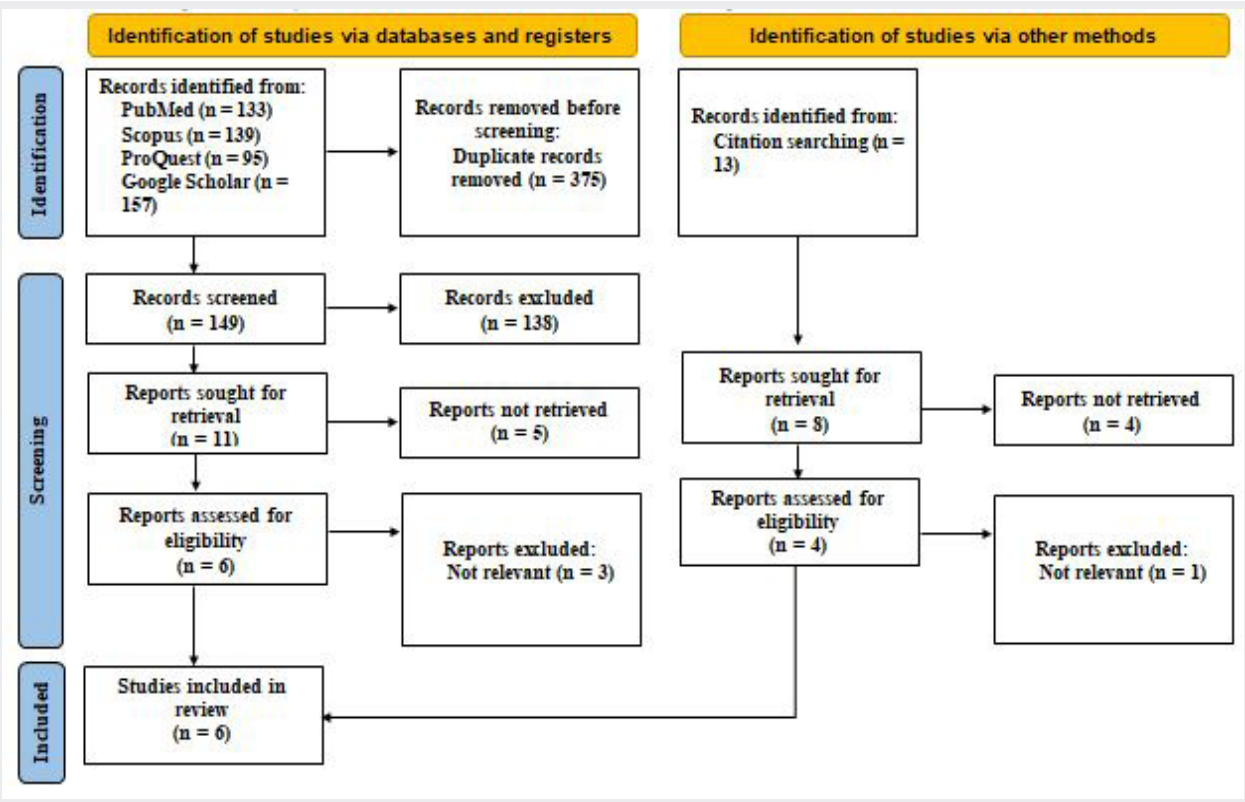

Figure 1. PRISMA study selection flow diagram

Study Characteristics

Description of included studies

The characteristics of the 6 included studies are listed in table 1. The articles in this extraction were published between 2009 and 2020. The sample size ranged from 35 to 79 patients, with a total number of 381 participants. Moreover, four studies used the SWAL-QOL questionnaire, one employed the DHI questionnaire, and only one used the 36-Item Short Form Survey (SF-36) questionnaire to determine the effect of dysphagia on the QoL of stroke patients.

Table 1. Characteristics of the included studies

Study	Year	Country	Questionnaire	Sample size	Main results
Pontes et al. (1)	2017	Brazil	Brazilian version of the SWAL-QOL	35	There is a weak negative correlation between age and the SWA-QOL subdomain «Food selection».
Kim et al. (22)	2020	Republic of Korea	Korean version of the SWAL-QOL	75	There is a negative association between the severity of dysphagia and the SWA-QOL subdomains "Food selection", "Burden", "Social functioning", "Mental health", and "Fatigue".
Brandão et al. (20)	2009	Brazil	Brazilian version of the SF-36	60	Stroke patients without dysphagia showed better overall quality of life than those with dysphagia.
Hong and You (23)	2017	Republic of Korea	Korean version of the SWAL-QOL	79	Oral intake patients have a significantly better quality of life than non-oral intake patients in all areas of the SWAL-QOL questionnaire except sleep.
Bakhtiyari et al. (21)	2020	Iran	Iranian version of the DHI	60	Functional subscale of the DHI was associated with the education level.
Bahcecı et al. (24)	2017	Turkey	Turkish version of the SWAL-QOL	72	Quality of life improved significantly after treatment.

DHI: Dysphagia Handicap Index
SF-36: 36-Item Short Form Survey
SWAL-QOL: Swallowing Quality-of-Life

Quality of included studies

According to the NIH tool, the reporting results showed that only one study has good methodological quality, while other studies (n = 5) have fair methodological quality (table 2).

Table 1. Methodological quality of included studies

Study	Pontes et al. (1)	Kim et al. (22)	Brandão et al. (20)	Hong and You (23)	Bakhtiyari et al. (21)	Bahcecı et al. (24)
Was the research question or objective in this paper clearly stated?	Yes	Yes	Yes	Yes	Yes	Yes
Was the study population clearly specified and defined?	Yes	Yes	No	No	Yes	Yes
Was the participation rate of eligible persons at least 50%?	Yes	Yes	Yes	Yes	Yes	Yes
Were all the subjects selected or recruited from the same or similar populations?	Yes	Yes	No	Yes	Yes	Yes
Was a sample size justification, power description, or variance and effect estimates provided?	No	No	No	No	No	No
For the analyses in this paper, were the exposure(s) of interest measured prior to the outcome(s) being measured?	Yes	Yes	Yes	Yes	Yes	Yes
Was the timeframe sufficient so that one could reasonably expect to see an association between exposure and outcome if it existed?	No	No	No	No	No	No
For exposures that can vary in amount or level, did the study examine different levels of the exposure?	No	Yes	No	No	Yes	Yes
Were the exposure measures (independent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?	No	Yes	Yes	Yes	Yes	Yes
Was the exposure(s) assessed more than once over time?	NA	NA	NA	NA	NA	Yes
Were the outcome measures (dependent variables) clearly defined, valid, reliable, and implemented? consistently across all study participants?	Yes	Yes	Yes	Yes	Yes	Yes
Were the outcome assessors blinded to the exposure status of participants?	NA	NA	NA	NA	NA	NA
Was loss to follow-up after baseline 20% or less?	Yes	Yes	Yes	Yes	Yes	Yes
Were key potential confounding variables measured and adjusted statistically for their impact on the relationship? between exposure(s) and outcome(s)?	No	Yes	Yes	No	Yes	Yes
Summary Quality	Fair	Fair	Fair	Fair	Fair	Good

QoL in stroke patients with dysphagia

Comparison between stroke patients with and without dysphagia

Regarding the QoL in stroke patients with dysphagia and those without dysphagia, a study found that functional capacity, including the following: the ability to feed oneself, wash, go to the bathroom, dress, continence and maintain independence, was similar in both groups of stroke patients (p >.05); However, the subset without dysphagia showed better overall QoL than that with dysphagia (20).

Demographic characteristics and QoL

Two studies (1,21) examined the relationship between QoL and demographic characteristics. According to those studies, the mean SWAL-QOL score between men and women did not significantly differ (p >.05). However, the findings also revealed a weak negative correlation (r = -.339) between age and the "Food selection" field, indicating that as one's age increased, their score in this area decreased (1). Additionally, the latter study found no statistically significant association between age, sex, time from stroke onset, and the physical and emotional subscales of the DHI (p >.05). Still, it found that the functional subscale of the DHI was associated with the education level (r =.27, p =.037), indicating the negative impact of dysphagia on the functional aspect of the DHI decreases, with increasing the educational level (21).

The association between dysphagia severity and QoL

Two studies (21,22) investigated the association between dysphagia severity and QoL in stroke patients. They found a negative association between the severity of dysphagia and QoL, implying that QoL decreases as the dysphagia severity increases. Moreover, the first study (21) found a significant negative association between the severity of dysphagia and the SWA-QOL subdomains "Burden" (r = -.392, p=.001), "Social functioning" (r = -.370, p=.001), "Mental health" (r = -.362, p=.014), and "Fatigue" (r = -.401, p=.041). Moreover, the latter study (22) found that the severity of dysphagia positively correlated with the functional subscale of the DHI, indicating that the impact of dysphagia on the functional subdomain of the DHI increases as the severity of dysphagia increases.

Feeding type and QoL

Two articles (22, 23) compared the impact of dysphagia on the QoL according to the type of feeding. According to Kim et al. (22), the burden and sleep subdomains of the SWAL-QOL were significantly different between the two groups (p =.005 and p =.012, respectively). The tube-feeding group had lower burden and sleep scores on SWAL-QOL than the oral-feeding group (22). The second study found that the oral-intake group has a significantly better QoL than the non-oral intake group in all areas of the SWAL-QOL questionnaire except sleep (23).

Impact of dysphagia therapy on QoL

The importance of therapy was discussed in one article (24). This study looked at the QoL before and after dysphagia treatment, and showed that patients' QoL improved significantly after treatment (p =.001).

DISCUSSION

The findings of prior studies investigating the experiences and views of stroke patients with dysphagia are vital to understanding the impact of dysphagia on the QoL in stroke patients. In this review article, valuable insights into the experiences of stroke patients with dysphagia reveal the extra effort required for them to improve their QoL. The findings of this study showed that dysphagia had a detrimental effect on the QoL of stroke patients, and the QoL of stroke patients decreased as the severity of dysphagia increased. In addition, results showed that dysphagia therapy improves the QoL in stroke patients.

Our findings were consistent with a previous study (25) that looked at the relationship between QoL, the severity of dysphagia and the effect of swallowing therapy on patients' QoL. It found a negative relationship between QoL and dysphagia severity. Additionally, it showed that the QoL improved after the treatment of dysphagia. Stroke patients with dysphasia demonstrate a low QoL because of difficulty meeting a fundamental physiological need: eating. Therefore, oral intake therapy for stroke patients with dysphagia is anticipated to improve the swallowing function and QoL. Moreover, the patients' motivation for rehabilitation may be increased when a modified diet reflecting the patients' needs for oral intake is provided.

Regarding the relationship between demographic characteristics and QoL, our results indicated that patients with a higher educational level have a better QoL. This could be because patients with a higher education level develop problem-solving skills to adapt to problems. This finding was in line with Ross et al. (26), which showed that individuals with a high level of education have a better QoL than those with a lower level of education.

Regarding the QoL in stroke patients with and without dysphagia, our findings imply that the QoL rises as swallowing function improves. Furthermore, oral intake may be linked to the QoL because it satisfies basic human needs. This result is consistent with Tan et al. (27), which compared the QoL in palliative patients with and without dysphagia. It showed that patients with dysphagia have a lower QoL than those without dysphagia.

Strengths and Limitations of the study

Multiple databases were searched, and reference lists of relevant articles were checked. In addition, five authors participated, and any disagreement was resolved by discussion until a consensus was reached. However, the limitations of this review were that this article reviewed English-language articles solely, and grey literature was not included.

CONCLUSION

In conclusion, dysphagia can substantially impact the QoL in stroke patients. Thus, clinicians should consider the patients' QoL when assessing and managing dysphagia. The findings of this review article across demographics demonstrate that dysphagia can have a detrimental effect on the QoL of stroke patients, notably on their psychosocial well-being and social isolation. Moreover, there is an urgent need for research on improving the QoL of stroke patients with dysphagia.

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