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QUALITY OF COMMUNICATION AND QUALITY OF LIFE OF PEOPLE WITH APHASIA AND DYSARTHRIA AFTER STROKE

KVALITET KOMUNIKACIJE I KVALITET ŽIVOTA OSOBA SA AFAZIJOM I DIZARTRIJOM USLED MOŽDANOG UDARA

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Summary

Introduction. Aphasia and dysarthria are permanent consequences of stroke in many patients. These disorders significantly disrupt the person's functioning in everyday life. The aim of this paper is to examine the quality of communication and quality of life in patients with aphasia and dysarthria. **Material and Methods**. The clinical group included 25 patients with aphasia and 20 patients with dysarthria due to stroke. The control group included 15 post-stroke people without speech and language disorders and 15 neurologically healthy subjects. The Quality of Communication Life Scale was used to assess the quality of communication. This scale provides information about the impact of speech and language disorders on individuals' ability to communicate and quality of life in general. The scale consists of 18 items scored from 1 to 5. **Results.** Patients with aphasia and dysarthria have a significantly lower quality of communication compared to stroke survivors with preserved speech and language functions and neurologically healthy subjects. The severity of the language and speech disorder proved to be a significant factor in determining the quality of communication. Namely, patients with more severe forms of aphasia and dysarthria scored significantly lower on the Quality of Communication Life Scale compared to the patients with milder forms. It was also shown that patients with flaccid dysarthria have the worst quality of communication compared to the patients with other types of dysarthria. **Conclusion.** Aphasia and dysarthria following a stroke significantly impair the quality of communication and quality of life of the affected persons.

Key words: Aphasia; Dysarthria; Communication; Quality of Life; Stroke

Sažetak

Uvod. Afazija i dizartrija ostaju kao trajne posledice moždanog udara kod mnogih pacijenata. Ovi poremećaji značajno remete funkcionisanje osobe u svakodnevnom životu. Cilj ovog rada je utvrđivanje kvaliteta komunikacije i kvaliteta života kod pacijenata sa afazijom i dizartrijom. **Materijal i metode**. Kliničku grupu činilo je 25 ispitanika sa afazijom i 20 ispitanika sa dizartrijom usled moždanog udara. U kontrolnu grupu uključeno je 15 ispitanika sa moždanim udarom bez poremećaja govora i jezika i 15 neurološki zdravih govornika. Za procenu kvaliteta komunikacije primenjena je *Skala kvaliteta komunikacionog života.* Primenom ove skale dobijaju se informacije o uticaju govornih i jezičkih poremećaja na sposobnost komunikacije pojedinca i kvalitet života uopšte. Skala se sastoji od osamnaest tvrdnji koje ispitanici vrednuju ocenom od jedan do pet. **Rezultati.** Ispitanici sa afazijom i dizartrijom imaju značajno niži kvalitet komunikacije u poređenju sa osobama sa moždanim udarom očuvanih govornih i jezičkih funkcija i neurološki zdravim govornicima. Težina jezičkog i govornog poremećaja se pokazala značajnim faktorom u određivanju kvaliteta komunikacije. Utvrđeno je da pacijenti sa težim formama afazije i dizartrije imaju značajno niži skor na *Skali kvaliteta komunikativnog života* u odnosu na pacijente sa lakšim formama. Takođe je pokazano da pacijenti sa flacidnom dizartrijom imaju najlošiji kvalitet komunikacije u grupi ispitanika sa dizartrijom. **Zaključak.** Afazija i dizartrija nakon moždanog udara znatno narušavaju kvalitet komunikacije i kvalitet života pogođenih osoba.

Ključne reči: afazija; disartrija; komunikacija; kvalitet života; moždani udar

Introduction

Stroke is the most common vascular brain disorder causing impairments in the domain of motor skills, vision, swallowing, language, speech, etc. Language and speech disorders mainly manifest as aphasia and dysarthria.

Aphasia occurs as a result of damage to the dominant (mainly left) hemisphere of the brain. It manifests with impaired production and comprehension of spoken and written language. Due to its tendency to a chronic course, aphasia is one of the most severe disorders of psychological functions caused by stroke. Of all disorders of higher mental function that are caused by stroke, aphasia impoverishes personality the most [1]. Furthermore, aphasia significantly limits communication and impairs the individual to such an extent that some affected people

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BDAE – Boston Diagnostic Aphasia Examination
TSA – transcortical sensory aphasia
QCL – Quality of Communication Life Scale

remain debilitated for the rest of their lives [2]. Many empirical data show that aphasia negatively affects communication abilities, social relations, and activities of these people [3–6]. It has also been shown that patients with aphasia develop negative emotions, such as low mood (depression), frustration, anxiety, alienation, and low self-esteem [7]. Finally, findings show that people with aphasia are socially isolated and generally have a poor quality of life [8, 9].

Dysarthria is caused by damage to the central and/or peripheral nervous system. It is a motor speech disorder caused by paralysis, slowness, weakness, inaccuracy and uncoordinated movements of the speech musculature. Dysarthria manifests as impaired speech production: phonation, resonance, articulation and prosody. Often, the most noticeable deficits are in the domain of articulation, which significantly impairs the intelligibility of speech [10].

Although it has been previously shown that examination of the quality of life of people with aphasia contributes to a better understanding of the nature of the disorder and better assessment of outcomes and treatment planning, this topic remains under-researched [11]. In particular, there is a lack of papers dealing with self-perception of the quality of communication and quality of life in relation to the type and severity of aphasic syndrome.

Unlike with aphasia, there is very little data on the quality of communication and quality of life of people with dysarthria. There are practically no papers that examine the self-perception of one's own communication ability and quality of life in patients with different types and severity of acquired dysarthria. Finally, as far as we are aware, there are no studies that compare the self-perception of one's own communication ability among people with aphasia and dysarthria.

In this paper, we investigated the self-perception of the quality of communication and the quality of life of people with aphasia and dysarthria due to stroke, in comparison with people without speech and language disorders. Also, our aim was to examine whether there are differences in the quality of communication and quality of life between the respondents with aphasia and dysarthria, as well as whether the type and severity of aphasia and dysarthria affect the self-perception of communication abilities and quality of life.

Material and Methods

The clinical group included 25 subjects with aphasia and 20 subjects with dysarthria due to stroke in the left hemisphere. The control group included 15 subjects with a stroke in the right hemisphere, without speech and language disorders, and 15 neurologically healthy subjects. Exclusion criteria for post-stroke patients were: apraxia of speech, severe reading disorder, dementia, visual neglect, and psychiatric disorders. All participants were from 34 to 81 years of age, with 8 to 16 years of education. They were all native Serbian speakers.

The groups were matched according to age: no statistically significant differences in age were found between subjects with aphasia and dysarthria ($t = 0.74$, $df = 43$, $p = .46$), or between these groups and neurologically healthy subjects ($t = 0.48$, $df = 28$, $p = .64$). Also, no statistically significant differences were found between subjects with aphasia and dysarthria and post-stroke patients without speech and language disorders ($t = 1.03$, $df = 73$, $p = .31$).

There were no statistically significant differences in the level of education between respondents with aphasia and dysarthria ($t = 0.05$, $df = 43$, $p = .96$), subjects with aphasia and post-stroke patients without speech and language disorders ($t = 0.39$, $df = 38$, $p = .70$), subjects with aphasia and neurologically healthy subjects ($t = -0.45$, $df = 38$, $p = .65$), subjects with dysarthria and post-stroke patients without speech and language disorders ($t = 0.34$, $df = 33$, $p = . 73$), patients with dysarthria and neurologically healthy subjects ($t = 0.49$, $df = 33$, $p = .63$), and between subjects with stroke without speech and language impairments and neurologically healthy subjects ($t = 0.76$, $df = 28$, $p = .46$). Finally, the groups were also matched in gender ($\chi^2 = 0.12$, $df = 1$, $p = .73$).

The Serbian Aphasia Screening Test [12] and the Boston Diagnostic Aphasia Examination (BDAE) [13] were used in order to determine presence and type of aphasia. The patients were then classified into the following types of aphasia: Broca's aphasia, Wernicke's aphasia, conduction, anomic, and transcortical sensory aphasia (TSA). The severity of aphasia was determined by the BDAE Aphasia Severity Rating Scale and based on the scores the subjects were divided into three groups: mild, moderate and severe aphasia. Mild aphasia includes patients with non-fluent speech, without any significant limitations in expressing ideas and formulation of spoken language, and without any deficits in auditory comprehension. Moderate aphasia includes subjects with a reduced ability to speak spontaneously and/or understand, but who can converse on almost all topics from everyday life, with a little help of the interlocutor. Patients with a severe aphasia are often unable to clearly communicate ideas; they can discuss familiar topics, but with a significant help of the interlocutor [2].

The Screening Dysarthria Assessment was used in order to detect the presence of dysarthria, and we identified flaccid, spastic, ataxic, and hypokinetic dysarthria [10]. Based on the perceptual analysis of speech, carried out by two speech therapists, patients with dysarthria were divided into three groups: mild dysarthria, moderate dysarthria, and severe dysarthria.

The Quality of Communication Life Scale (QCL) [14], which was translated and adapted for Serbian language [1], was used to assess the quality of communication and quality of life. The QCL is intend-

ed for adults with acquired aphasia, dysarthria or communication disorders following traumatic brain injury. Using this scale, information are obtained about the impact of speech and language disorders on the ability to communicate, relationships with others, participation in various everyday activities and quality of life in general. The scale consists of 18 items scored from 1 to 5. Score 1 means that the respondent does not agree with the statement at all, and score 5 means that he/she completely agrees with it. The total raw score is obtained by adding up the scores for statements 1 to 17, and then calculating the average score. Statement number 18 "On the whole, my quality of life is good" represents a measure of quality of life, and is evaluated separately [1, 14].

The research was carried out at the Rehabilitation Clinic "Dr. Miroslav Zotović" in Belgrade from July to November 2022. All respondents gave their consent to participate in the research, which was approved by the Ethics Committee of the Clinic (N. 03-3475/1).

Statistical data processing was performed using a program for statistical data processing (IBM SPSS 26 Statistics for Windows). Descriptive statistical measures were frequency, mean, standard deviation, median, minimum, maximum and interquartile range. The χ^2 test and T-test were used to compare groups according to gender, age and years of education, while Kruskal-Wallis and Mann-Whitney U test were used to compare the results between the groups. The threshold for statistical significance was $p < 0.05$. The obtained results are shown in tables.

Results

First we examined the quality of communication and then the quality of life.

The results of the Kruskal-Wallis test showed that there were statistically significant differences in the average score of the communication quality between the tested groups ($H = 38.36$, $df = 3$, $p < .001$). Furthermore, the results of Mann-Whitney U test revealed statistically significant differences between the scores of patients with aphasia and neurologically healthy subjects ($U = 17.50$, $p < .001$) as well as between patients with aphasia and post-stroke patients without speech and language disorders ($U = 28.00$, $p < .001$). Differences were also found between patients with dysarthria and neurologically healthy subjects ($U = 27.00$, $p < .001$) and patients with dysarthria and post-stroke patients without speech and language disorders ($U = 31.50$, $p < .001$). No statistically significant differences were found between patients with aphasia and dysarthria ($U = 236.00$, $p = .749$), or between post-stroke patients without speech and language disorders and neurologically healthy subjects ($U = 94.500$, $p = .454$) **(Table 1)**.

The results of the Kruskal-Wallis test showed that there were statistically significant differences between the groups related to the quality of life ($H = 25.91$, $df = 3$, $p < .001$). Furthermore, the results of Mann-Whitney U test revealed that in terms of quality of life there were statistically significant differences between patients with aphasia and neurologically healthy subjects ($U = 50.00$, $p < .001$), patients with aphasia and post-stroke patients without speech and language disorders ($U = 89.00$, $p < .01$), patients with dysarthria and neurologically healthy subjects ($U = 40.00$, $p < .001$), and patients with dysarthria and post-stroke patients without speech and language disorders ($U = 67.00$, $p < .01$). No statistically significant differences were found between patients with aphasia and dysarthria ($U =$

Table 1. Distribution of groups of respondents related to the quality of communication
Tabela 1. *Distribucija grupa ispitanika prema kvalitetu komunikacije*

Group/*Grupa*	No./*Br.*	M/*M*	SD/*SD*	Min/*Min*	Max/*Maks*	Mdn/*Mdn*	IQR/*IQR*
Aphasia/*Afazija*	25	3.51	0.71	2.00	4.35	3.76	0.80
Dysarthria/*Dizartrija*	20	3.38	0.84	2.21	4.76	3.53	1.63
Post-stroke patients without speech and language disorders *Osobe sa moždanim udarom očuvanih govornih i jezičkih funkcija*	15	4.40	0.40	3.11	4.82	4.53	0.36
Neurologically healthy subjects/*Neurološki zdravi govornici*	15	4.53	0.34	3.88	5.00	4.55	0.41

Legend: M – mean; SD - Standard deviation; Mdn – Median; IQR - Interquartile range
Legenda: M – Srednja vrednost; SD – Standardna devijacija; Mdn – Medijana; IQR – Interkvartilni raspon

Table 2. Distribution of groups of respondents related to the quality of life
Tabela 2. *Distribucija grupa ispitanika prema kvalitetu života*

Group/*Grupa*	No./*Br.*	M/*M*	SD/*SD*	Min/*Min*	Max/*Maks*	Mdn/*Mdn*	IQR/*IQR*
Aphasia/*Afazija*	25	3.60	0.71	2	5	4.00	1.00
Dysarthria/*Dizartrija*	20	3.40	0.94	2	5	3.50	1.00
Post-stroke patients without speech and language disorders *Osobe sa moždanim udarom očuvanih govornih i jezičkih funkcija*	15	4.33	0.62	3	5	4.00	1.00
Neurologically healthy subjects/*Neurološki zdravi govornici*	15	4.67	0.49	4	5	5.00	1.00

Legend: M – mean; SD - Standard deviation; Mdn – Median; IQR - Interquartile range
Legenda: M – Srednja vrednost; SD – Standardna devijacija; Mdn – Medijana; IQR – Interkvartilni raspon

222.00, p = .492), post-stroke patients without speech and language disorders and neurologically healthy subjects (U = 80.00, p = .124) **(Table 2)**.

The results of the Kruskal-Wallis test showed that there was no statistically significant difference in the quality of communication between patients with different types of aphasia (H = 9.04, df = 4, p = .060). On the other hand, there was a statistically significant difference in the quality of communication of patients with different degrees of aphasia severity (H = 14.50, df = 2, p = .001), with the highest average value of respondents with mild aphasia **(Table 3)**.

The results of the Kruskal-Wallis test showed a statistically significant difference between patients with different types (H = 6.89, df = 3, p = .075) and severity of dysarthria (H = 12.26, df = 2, p < .005). The patients with spastic dysarthria and those with mild dysarthria had the highest average scores **(Table 4)**.

The results of the Kruskal-Wallis test showed no statistically significant difference between patients with different types of aphasia related to the perception of their quality of life (H = 4.55, p = .337), but significant differences were found between patients with different severity of aphasia (H = 8.65, p = .01).

Table 3. Distribution of subjects with different types and severity of aphasia related to the quality of communication
Tabela 3. *Distribucija ispitanika različitih tipova i težina afazije prema kvalitetu komunikacije*

		No./*Br.*	M/*M*	SD/*SD*	Min/*Min*	Max/*Maks*	Mdn/*Mdn*	IQR/*IQR*
Types of aphasia *Tipovi afazije*	Broca's/*Brokina*	5	3.64	0.29	3.17	3.88	3.76	0.47
	Wernicke's/*Vernikeova*	5	3.28	0.83	2.24	3.94	3.76	1.56
	Conduction/*Konduktivna*	5	3.41	0.85	2.00	4.29	3.59	1.21
	TSA	5	3.07	0.83	2.06	3.94	3.11	1.64
	Anomic/*Anomička*	5	4.08	0.20	3.88	4.35	4.12	0.38
Severity of aphasia *Težina afazije*	Mild/*Blaga*	8	4.13	0.21	3.82	4.35	4.06	0.41
	Moderate/*Umerena*	8	3.68	0.25	3.17	3.94	3.70	0.32
	Severe/*Teška*	9	2.84	0.75	2.00	3.94	2.53	1.49

Legend: M – mean; SD - Standard deviation; Mdn – Median; IQR - Interquartile range; TSA - Transcortical sensory aphasia
Legenda: M – Srednja vrednost; SD – Standardna devijacija; Mdn – Medijana; IQR – Interkvartilni raspon; TSA – Transkortikalna senzorna afazija

Table 4. Distribution of subjects with different types and severity of dysarthria related to the quality of communication
Tabela 4. *Distribucija ispitanika različitih tipova i težine dizartrije prema kvalitetu komunikacije*

		No./*Br.*	M/*M*	SD/*SD*	Min/*Min*	Max/*Maks*	Mdn/*Mdn*	IQR/*IQR*
Types of dysarthria *Tipovi dizartrije*	Flaccid/*Flacidna*	6	2.30	0.79	2.23	4.17	2.91	1.37
	Spastic/*Spastična*	5	4.18	0.41	3.76	4.76	4.23	0.76
	Ataxic/*Ataksična*	5	3.19	0.75	2.35	4.11	3.41	1.44
	Hypokinetic/*Hipokinetička*	4	3.19	0.99	2.12	4.06	3.29	1.81
Severity of dysarthria *Težina dizartrije*	Mild/*Blaga*	6	4.17	0.44	3.41	4.76	4.20	0.52
	Moderate/*Umerena*	7	3.52	0.47	2.59	4.06	3.59	0.47
	Severe/*Teška*	7	2.56	0.65	2.12	4.00	2.35	0.24

Legend: M – mean; SD - Standard deviation; Mdn – Median; IQR - Interquartile range
Legenda: M – Srednja vrednost; SD – Standardna devijacija; Mdn – Medijana; IQR – Interkvartilni raspon

Table 5. Distribution of subjects with different types and severity of aphasia related to their self-assessed quality of life
Tabela 5. *Distribucija subjekata različitih tipova i težine afazije prema oceni kvaliteta života*

		No./*Br.*	M/*M*	SD/*SD*	Min/*Min*	Max/*Maks*	Mdn/*Mdn*	IQR/*IQR*
Type of aphasia *Tipovi afazije*	Broca's/*Brokina*	5	3.60	0.55	3	4	4.00	1.00
	Wernicke's/*Vernikeova*	5	3.60	0.55	3	4	4.00	1.00
	Conduction/*Konduktivna*	5	3.20	0.84	2	4	3.00	1.50
	TSA	5	3.40	0.55	3	4	3.00	1.00
	Anomic/*Anomička*	5	4.20	0.84	3	5	4.00	1.50
Severity of aphasia *Težina afazije*	Mild/*Blaga*	8	4.13	0.64	3	5	4.00	0.75
	Moderate/*Umerena*	8	3.63	0.52	3	4	4.00	1.00
	Severe/*Teška*	9	3.11	0.60	2	4	3.00	0.50

Legend: M – mean; SD - Standard deviation; Mdn – Median; IQR - Interquartile range; TSA - Transcortical sensory aphasia
Legenda: M – Srednja vrednost; SD - Standardna devijacija; Mdn – Medijana; IQR - Interkvartilni raspon; TSA - Transkortikalna senzorna afazija

Table 6. Distribution of subjects with different types and severity of dysarthria related to their self-assessed quality of life
Tabela 6. *Distribucija ispitanika različitog tipa i težine dizartrije prema proceni kvaliteta života*

		No./*Br.*	M/*M*	SD/*SD*	Min/*Min*	Max/*Maks*	Mdn/*Mdn*	IQR/*IQR*
Types of dysarthria *Tipovi dizartrije*	Flaccid/*Flacidna*	6	2.83	0.98	2	4	2.50	2.00
	Spastic/*Spastična*	5	4.00	0.71	3	5	4.00	1.00
	Ataxic/*Ataksična*	5	3.20	0.84	2	4	3.00	1.50
	Hypokinetic/*Hipokinetička*	4	3.75	0.96	3	5	3.50	1.75
Severity of dysarthria *Težina dizartrije*	Mild/*Blaga*	6	3.67	1.03	2	5	4.00	1.50
	Moderate/*Umerena*	7	3.57	0.89	2	4	4.00	1.00
	Severe/*Teška*	7	3.00	1.00	2	5	3.00	1.00

Legend: M – mean; SD - Standard deviation; Mdn – Median; IQR - Interquartile range
Legenda: M – Srednja vrednost; SD - Standardna devijacija; Mdn – Medijana; IQR - Interkvartilni raspon

Namely, patients with mild aphasia had significantly higher scores compared to patients with severe aphasia ($U = 10.00$, $p < .01$), as well as patients with moderate aphasia compared to those with severe aphasia ($U = 20.00$, $p = .082$). The differences between subjects with mild and moderate aphasia were not statistically significant ($U = 19.00$, $p = .113$) **(Table 5)**.

The results of the Kruskal-Wallis test showed no statistically significant difference in the quality of life between subjects with different types of dysarthria ($H = 4.57$, $p = .206$) or between subjects with different severity of dysarthria ($H = 2.53$, $p =. 283$) **(Table 6)**.

Discussion

This study examined patients with aphasia and dysarthria due to stroke. Our aim was to investigate their quality of communication and quality of life by comparing them with control groups including post-stroke patients without speech and language disorders and neurologically healthy subjects.

The results of our study showed that subjects with aphasia and dysarthria had significantly lower scores related to their quality of communication and quality of life compared to the control groups. Additional analysis showed that there was no statistically significant difference in the quality of communication between patients with different types of aphasia. However, the results showed a tendency for patients with Wernicke's aphasia and TSA to rate their communication abilities lower compared to patients with other types of aphasia, which indicates a possible influence of the type of aphasia on the quality of communication. Given that the type of aphasia may affect the quality of communication, as shown in some earlier studies [5, 6, 15], the question of the relationship between the type of aphasia and the self-assessment of the quality of communication remains open. In order to get a valid answer to this question, it is necessary to include a larger number of respondents for each type of aphasia and to equalize them according to the severity of the language disorder.

The results of research also showed that people with aphasia have a poor quality of communication. For example, Pallavi et al. found that patients with Broca's aphasia had significantly lower scores on the QCL compared to the control group of neurologically healthy subjects [15]. Similar findings were reported by Vuković, who determined a significantly worse quality of communication in patients with Broca's and conduction aphasia compared to neurologically healthy subjects [5].

The current research further showed that the quality of communication depends on the severity of aphasia. The lowest self-assessment scores of communicative abilities were observed in patients with severe aphasia, while the highest scores were observed in patients with mild aphasia. The results obtained by comparison within the same type of aphasic syndrome in another study [5] also lend support to the influence of the severity of aphasia on the quality of communication. Specifically, that study found that people with a severe form of conduction aphasia have significantly worse scores on the QCL Scale compared to people with a milder form [5].

Concerning the assessment of quality of life, the present study shows that patients with aphasia, regardless of its type, rate their quality of life significantly lower compared to subjects without speech and language disorders. It also shows that subjects with a more severe degree of aphasia rate their quality of life lower compared to those with milder aphasic disorders.

The analysis of the results of subjects with dysarthria also revealed a lower quality of communication compared to neurologically healthy subjects and post-stroke patients without speech and language disorders. The type of dysarthria proved to be a significant factor in determining the quality of communication. Namely, subjects with flaccid dysarthria had the lowest scores on the QCL, while the highest scores were found in the group of subjects with spastic dysarthria**.** Since the most noticeable signs of flaccid dysarthria are difficulty in pronouncing consonants and hypernasality [10, 16], it is to be assumed that these deficits in speech contribute most to the poor quality of communication. In addition to the type, it was found that the severity of dysarthria also significantly impacts the quality of communication of people with dysarthria. People with a severe degree of dysarthria were the least satisfied with their quality of communication, while people with mild dysarthria rated their communication abilities the highest.

Regarding self-perception of the quality of life, our results show that patients with dysarthria, regardless of type and severity, rate it significantly lower compared to subjects without speech and language disorders.

Finally, our results showed that people with aphasia and dysarthria included in this research rated their communication quality equally poorly. However, bearing in mind that the study did not include persons with very severe aphasia (global aphasia, transcortical mixed aphasia, severe forms of Wernicke's or Broca's aphasia), we cannot say with certainty that aphasia and dysarthria impair the QCL to the same extent. In order to get a valid answer to this question, it is necessary to develop and apply scales adapted to people with very severe aphasic disorders.

Conclusion

People with aphasia and dysarthria have a significantly impaired quality of communication and quality of life compared to people without speech and language disorders. The severity of aphasia was identified as an important factor in determining the quality of communication and quality of life. Patients with severe aphasia have significantly worse quality of communication and quality of life compared to those with moderate or mild aphasia. The quality of communication of patients with dysarthria is affected by the severity and type of dysarthria. Patients with flaccid dysarthria and severe form of dysarthria have the worst quality of communication. Judging from our results, we strongly believe that, as a part of speech-language therapy, patients with aphasia and dysarthria should be encouraged to communicate, regardless of the severity of disorder.

One of the limitations of this study is the small number of respondents within different types of aphasia and dysarthria. In addition, communication assessment scales adapted to patients with very severe forms of aphasia should be applied in future research.

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