

Narrative discourse of young and older brazilian adults associated with demographic factors

Discurso narrativo de adultos jovens e idosos do brasil associado com fatores demográficos

Keywords

Narration
Communication
Language
Older adult
Young Adult

Descritores

Narração
Comunicação
Linguagem
Idoso
Adulto Jovem

ABSTRACT

Purpose: 1) Compare the discourse performance between young and older adults from the Brazilian Federal District (DF); 2) Compare the mean discourse performance of participants from the DF with the normative discourse of a population from a different region of the country; 3) Verify whether the variables age, educational level and socioeconomic status and scores on the cognitive, behavioral and functional screening tests were associated with discourse performance. **Method:** A total of 60 healthy volunteers from the DF, 30 older adults and 30 young adults, were selected. Participants were divided into two subgroups according to educational level: low education and high education. The four narrative discourse subtests of the Montreal Communication Evaluation Battery, Brazilian Portuguese version (MAC-BR) were applied to the study sample. **Results:** Discourse scores of the older adults were statistically higher than those of the young adults. The discourse scores in the high education group were also better than those in the low education group, with statistically significant difference observed in only one of the MAC-BR subtests. Discourse performance was associated with the sociodemographic variable and the scores on the cognitive and functional screening tests. The discourse performance of the DF sample differed from the national normative discourse with statistically significant difference. **Conclusion:** The discourse performance of older adults from the Brazilian Federal District differed from that of young adults from the same region, as well as from that of older adults from southern Brazil. Discourse performance was associated with several different variables.

RESUMO

Objetivo: 1) Comparar o desempenho discursivo entre adultos jovens e idosos do Distrito Federal; 2) Comparar a média discursiva dos voluntários do Distrito Federal com a média normativa, obtida em outra região do país; 3) Verificar se a idade, a escolaridade, a classe econômica e o desempenho nos testes de rastreio cognitivo, de humor e funcional estão associados ao desempenho discursivo. **Método:** Foram selecionados 60 voluntários do Distrito Federal, dos quais 30 eram idosos saudáveis e 30 adultos jovens, divididos em dois subgrupos, de menor e maior escolaridade. Os quatro subtestes de discurso narrativo oral da Bateria Montreal de Avaliação da Comunicação foram aplicados. **Resultados:** Os escores discursivos dos idosos foram estatisticamente melhores do que os dos adultos jovens. O discurso dos voluntários de maior escolaridade também foi melhor em relação ao do grupo com menor tempo de estudo, diferença estatisticamente significativa apenas para um subteste estudado. Os escores discursivos estiveram associados às variáveis sociodemográfica, cognitiva e de funcionalidade. O desempenho discursivo da amostra do Distrito Federal apresentou diferença estatisticamente significativa em relação à média normativa brasileira. **Conclusão:** O discurso do idoso do Distrito Federal é diferente do adulto jovem da mesma região e do idoso da região Sul do país. O desempenho discursivo está associado a diversas variáveis.

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INTRODUCTION

Projections for of the Brazilian Federal District (DF), one of Brazil's federative units and where the federal capital, Brasilia, is located, estimate that older adults will compose 26.1% of its population by 2060, compared with only 6.9% in 2018⁽¹⁾.

With the increased elderly population, there is a commensurate rise in the number of persons with dementia⁽²⁾. Higher prevalence of dementia was found among the younger elderly, aged 65-69 years, in Latin American countries compared with developed nations, whereas the older elderly presented a higher rate of dementia in developed countries⁽³⁾. These findings corroborate those of studies associating differences in functional or cognitive performance with social, ethnic, economic, cultural or demographic diversity^(4,5,6,7), as well as with genetic factors⁽⁸⁾. Cognitive-behavioral and functional-structural changes may occur as a result of education, a multidimensional variable that encompasses quality of life, socioeconomic level, and activities of daily living⁽⁹⁾. Sociodemographic characteristics of the population, such as education, involvement with the community, different leisure activities, contact with family members, and physical activities, can act as protective factors against cognitive decline⁽¹⁰⁾.

A multi-center study conducted in a number of Latin American countries showed that, for language assessments, each country has specific needs in terms of adapting normative data according to gender, age and education⁽¹¹⁾. It is, therefore, likely that sociodemographic differences across regions explain disparities in linguistic-cognitive development profiles.

Studies addressing language changes inherent in the aging process reveal the impairments that occur in this stage of life, and are important for their direct clinical relevance to guiding professionals who are engaged in therapeutic communication with the elderly on a routine basis⁽¹²⁾. Discourse is an important component in the quality of life of elderly populations⁽¹³⁾. Discourse abilities allow information to be conveyed from an interlocutor in different forms, one of which is narrative, involving the narration of a story or an event⁽¹⁴⁾.

In Brazil, narrative discourse can be assessed using the subtest of the Montreal Communication Evaluation Battery adapted, validated and standardized for Brazilian Portuguese (MAC-BR)^(14,15). Regarding narrative discourse, an effect of the sociodemographic variable education was evident; however, the effect of the age variable was not statistically significant in Brazilian and Portuguese studies^(16,17).

Given the influence of the sociodemographic background of each region on linguistic-cognitive performance and the fact that the DF is highly socioeconomically and culturally diverse, studying the discourse ability and performance of individuals from this region is paramount. Studying a sample from this federative unit, which was established in 1960, can yield knowledge on the linguistic-cognitive component of a population composed of descendants from all regions of Brazil. The hypothesis of the present study is that narrative discourse performance of DF volunteers differs from normative values from a population from the South region of the country. In addition, educational level,

age and socioeconomic status, as well as cognitive, behavioral and functional aspects, are expected to influence the discourse performance of participants from the DF.

Thus, this study aimed to 1) compare the discourse performance between young and older adults from the DF; 2) compare the mean discourse performance of participants from the DF with normative discourse values of a population located 2000 km away, in the South region of the country; 3) verify whether the variables age, education and economic status and scores on the cognitive, behavioral and functional screening tests were associated with the discourse performance of the participants from the DF.

METHOD

This study was approved by the Research Ethics Committee (CEP) of Faculdade de Ciências da Saúde, Universidade de Brasilia (UnB) (protocol no. CAAE 56190716.0.0000.0030 and permit no. 1.657.122). All participants signed a free and informed consent form approved by the CEP and were recruited in compliance with the provisions contained in item IV of Resolution 466/2012 and complementary resolutions.

The convenience sample consisted of volunteers from the DF. The study was first conducted with participants of a community group for the elderly. After assessment of the elderly individuals, young adults studying at universities or schools for Youth and Adult Education were recruited. All participants were assessed in a quiet space at their homes, schools, or other venue of their choice. The sample comprised 60 individuals who had resided in the DF for at least 10 years and was divided into two groups:

- 1) Age:
 - a) Older adults: aged 60-75 years;
 - b) Young adults: aged 19-39 years.
- 2) Education:
 - a) Low education: individuals who had completed 2-7 years of formal schooling.
 - b) High education: individuals who had completed ≥ 8 years of schooling.

First, the older adults were assessed, after that, young adults with socioeconomic and educational profiles similar to those of the older adults were recruited.

Inclusion criteria were as follows: present typical stable health status, no history of psychiatric or neurologic diseases, be right-handed, and having lived in the DF for at least 10 years. This information was collected at the initial interview through one question about the presence of neurologic or psychiatric diseases and another that asked whether the individual had seen a doctor in the past year.

The following exclusion criteria were applied: present prior or current history of alcoholism or illegal drug use; serious prior neurological or psychiatric diseases, e.g., epilepsy, carcinoma, schizophrenia; visual or hearing impairments, or use of a hearing aid, or poorly adapted dental prosthesis that could negatively affect performance on the tasks; results below the expected on the cognitive, depression and functional screening tests.

General information such as age, gender and educational level were collected and the following assessments were performed according to the following criteria and scales: 1) Economic Classification Criteria of Brazil18, to determine socioeconomic characteristics; 2) Mini-Mental State Examination, Brazilian version^(19,20), for global cognitive screening; 3) Geriatric Depression Scale⁽²¹⁾, to identify depression symptoms; 4) Lawton & Brody scale⁽²²⁾, to assess dependence on instrumental activities of daily living; 5) narrative discourse subtests of the MAC-BR⁽¹⁴⁾, to assess discourse production and comprehension.

In the MAC-BR, the higher the scores on the discourse subtests, the better the performance. The subtests are outlined ahead:

- 1) Partial story retelling: assesses the ability to store and understand complex linguistic material and produce narrative discourse. A text containing five paragraphs is read out aloud by the examiner. Participants are instructed to recount and summarize what they understood, paragraph by paragraph, as the story is read out. The information provided is split into essential (overall gist of story) and present (other information recalled), and scored from 0-18 and 29 points, respectively;
- 2) Integral story retelling: assesses the same abilities as the previous subtest, but only after reading of the same text in full by the examiner. Participants had to retell the whole history. Minimum score is 0 and maximum is 13 points;
- 3) Questions of comprehension: Checks whether the participant understood the story, based on the brief answers given to 12 questions, scored with 1 point for each correct response.

Statistical analysis

The Kolmogorov-Smirnov test was applied and determined the distribution of the data, defining the selection of non-parametric tests for the analysis of the samples produced by the volunteers from the DF.

The Fisher's exact test was used to determine the difference between the DF groups for the distribution of the sociodemographic variable gender. The Mann-Whitney test was used to compare sociodemographic and cognitive-behavioral variables between the groups of participants from DF.

The Spearman's correlation coefficient was employed to determine the association between performance on the discourse subtests and the sociodemographic and cognitive-behavioral variables, according to group.

In addition, the means of the groups of volunteers from the DF were compared with normative means for the population from the South region of Brazil, using the Student's *t*-test.

A *p*-value of 0.05 was adopted to indicate statistical significance. All data were analyzed using the IBM SPSS Statistics 22 software.

RESULTS

Demographic, cognitive-behavioral and functional data

A total of 65 volunteers from the DF participated in this study. Five were excluded for performing below the Brazilian

average on the cognitive screening test or scoring over 10 on the Geriatric Depression Scale.

Table 1 shows the sociodemographic data for the sample from the DF and comparisons between the groups using the Fisher's exact and Mann Whitney tests.

Table 1. Comparison of sociodemographic, cognitive, behavioral and functional variables between the groups from the Brazilian Federal District

GROUP/ VARIABLE	Age		p	Education		p
	Older adults (n=30)	Young adults (n=30)		Low education (n=30)	High education (n=30)	
Gender (female)*	90	87	1.000	87	90	1.000
Age (years)"	66.77 (4.57)	28.70 (7.93)	<0.001	47.37 (21.56)	48.10 (19.18)	0.888
Education (years of study)"	7.57 (3.73)	8.17 (4.06)	0.732	4.80 (1.85)	10.93 (2.78)	<0.001
Economic status"	31.57 (9.81)	26.83 (7.77)	0.072	26.70 (7.94)	31.70 (9.62)	0.038
Depression"	1.53 (2.03)	2.87 (2.27)	0.002	2.50 (2.71)	1.90 (1.63)	0.915
Mini-Mental State"	26.20 (2.68)	26.47 (2.66)	0.686	24.87 (2.85)	27.80 (1.32)	<0.001
Activities of daily living"	26.93 (0.25)	26.57 (0.82)	0.032	26.63 (0.81)	26.87 (0.35)	0.386

Captions: *Percentage, "Mean (standard deviation)

Results of the depression and functional scales showed that the young adults presented statistically worse performance than the older adults.

Comparison between the participants with low and high education revealed that the group with higher educational level had better economic status and cognitive performance.

Analysis of the other sociodemographic and cognitive-behavioral variables showed no statistically significant differences between the groups from the DF (Table 1), except for the differences in the age and education variables previously outlined.

Narrative discourse performance of the DF sample

Table 2 shows the descriptive results of the discourse subtests and the comparison of performance between the groups from the DF using the Mann-Whitney test.

• Comparison between older and young adults

The older adult group presented higher scores on the four narrative discourse subtests compared with those of the young adult group, with statistically significant difference.

• Comparison between participants with low and high education

Volunteers with high education had higher scores compared with those of participants with low education only on the partial story retelling - present information subtest. The other differences observed were not statistically significant.

Table 2. Comparison of performance on each narrative discourse subtest between the groups from the Brazilian Federal District (Mann-Whitney test)

	Min.	Max.	Median	Mean (SD)	Min.	Max.	Median	Mean (SD)	U	p
GROUP/SUBTEST	Older adults (n=30)				Young adults (n=30)				Group comparison	
Partial story retelling - essential information	3.00	18.00	14.00	13.77 (3.19)	1.00	18.00	10.00	10.26 (4.43)	230.00	<0.001
Partial story retelling - present information	4.00	25.00	18.00	17.33 (4.57)	1.00	25.00	13.50	13.57 (5.51)	252.50	<0.003
Integral story retelling	1.00	13.00	11.00	9.55 (3.20)	0.00	13.00	7.00	7.23 (3.78)	271.50	<0.013
Questions of comprehension	4.00	12.00	11.00	10.23 (2.33)	3.00	12.00	10.00	8.59 (3.15)	307.50	<0.047
GROUP/SUBTEST	High education (n=30)				Low education (n=30)				Group comparison	
Partial story retelling - essential information	6.00	18.00	14.00	13.17 (3.50)	1.00	18.00	11.00	10.87 (4.59)	321.50	0.056
Partial story retelling - present information	8.00	25.00	17.00	17.00 (4.01)	1.00	25.00	15.00	13.90 (6.13)	314.50	<0.044
Integral story retelling	1.00	13.00	10.00	9.17 (3.48)	0.00	13.00	8.00	7.55 (3.73)	320.50	0.081
Questions of comprehension	4.00	12.00	11.00	10.13 (2.47)	3.00	12.00	10.00	8.69 (3.10)	313.50	0.059

Captions: SD: Standard deviation.

Table 3. Association between performance on narrative discourse subtests and sociodemographic, cognitive, behavioral and functional variables (Spearman's correlation coefficient)

		Education	Age	Economic status	Depression	Mini-Mental State - total	Mini-Mental State - recall	Activities of daily living
Older adults								
Partial story retelling - essential information	SCC'	0.351	-0.010	0.192	-0.164	0.433*	0.095	0.086
	p	0.057	0.959	0.309	0.386	0.017	0.617	0.652
Partial story retelling - present information	SCC'	0.282	0.118	0.058	-0.284	0.400*	-0.022	0.117
	p	0.130	0.534	0.762	0.128	0.029	0.909	0.540
Integral story retelling	SCC'	0.151	-0.162	-0.051	-0.073	0.159	-0.265	0.090
	p	0.436	0.401	0.793	0.706	0.411	0.165	0.641
Questions of comprehension	SCC'	0.144	-0.064	0.158	-0.241	0.205	-0.026	0.324
	p	0.449	0.738	0.404	0.200	0.278	0.892	0.081
Young adults								
Partial story retelling - essential information	SCC'	0.396	0.149	0.214	0.051	0.283	0.107	0.202
	p	0.030	0.432	0.256	0.789	0.130	0.574	0.284
Partial story retelling - present information	SCC'	0.386	0.052	0.216	0.049	0.254	0.099	0.321
	p	0.035	0.785	0.251	0.798	0.176	0.601	0.083
Integral story retelling	SCC'	0.551	-0.098	0.307	-0.007	0.345	0.143	0.260
	p	0.002	0.606	0.099	0.972	0.062	0.452	0.164
Questions of comprehension	SCC'	0.439	0.087	0.174	0.145	0.273	-0.074	0.173
	p	0.017	0.653	0.368	0.451	0.152	0.703	0.370
Participants from the Brazilian Federal District (Low education)								
Partial story retelling - essential information	SCC'	0.170	0.547	0.181	-0.392	0.272	0.272	0.193
	p	0.368	0.002	0.339	0.032	0.145	0.146	0.307
Partial story retelling - present information	SCC'	0.161	0.467	0.125	-0.368	0.272	0.197	0.238
	p	0.397	0.009	0.509	0.046	0.146	0.297	0.206
Integral story retelling	SCC'	0.198	0.399	-0.023	-0.212	0.107	0.061	0.264
	p	0.304	0.032	0.908	0.271	0.581	0.754	0.166
Text Comprehension	SCC'	0.169	0.361	0.088	-0.230	0.200	-0.028	0.168
	p	0.381	0.054	0.652	0.231	0.299	0.884	0.384

		Education	Age	Economic status	Depression	Mini-Mental State - total	Mini-Mental State - recall	Activities of daily living
Participants from the Brazilian Federal District (High education)								
Partial story retelling – essential information	SCC'	0.374	0.249	0.333	-0.100	0.132	-0.167	0.303
	P	0.042	0.184	0.072	0.598	0.488	0.379	0.104
Partial story retelling – present information	SCC'	0.280	0.198	0.311	-0.117	0.067	-0.225	0.399
	P	0.134	0.293	0.095	0.538	0.724	0.231	0.029
Integral story retelling	SCC'	0.439	-0.021	0.443	-0.059	0.269	-0.187	0.240
	P	0.015	0.912	0.014	0.756	0.151	0.323	0.201
Text Comprehension	SCC'	0.068	0.121	0.303	-0.109	-0.072	-0.112	0.368
	P	0.722	0.523	0.104	0.561	0.704	0.554	0.045

Captions: SCC = Spearman's correlation coefficient

Table 4. Comparison of performance on narrative discourse subtests between the groups from the Brazilian Federal District (DF) vs. the normative values for southern Brazil

	Older adults Low education			Older adults High education			Young adults Low education			Young adults High education		
	DF Mean (SD)	Normative mean (SD)	p	DF Mean (SD)	Normative mean (SD)	p	DF Mean (SD)	Normative mean (SD)	p	DF Mean (SD)	Normative mean (SD)	p
Partial story retelling - essential information	12.93 (3.73)	10.48 (3.76)	0.023	14.60 (2.38)	13.40 (2.13)	0.072	8.80 (4.54)	9.44 (3.56)	0.594	11.73 (3.92)	14.98 (2.43)	0.006
Partial story retelling - present information	16.27 (5.55)	14.50 (5.24)	0.238	18.40 (3.18)	18.58 (3.02)	0.830	11.53 (5.91)	13.18 (5.26)	0.299	15.60 (4.36)	20.90 (3.48)	<0.001
Integral story retelling	9.29 (3.27)	7.30 (3.21)	0.041	9.80 (3.23)	10.18 (1.79)	0.656	5.93 (3.47)	7.34 (3.48)	0.139	8.53 (3.72)	10.82 (2.22)	0.032
Questions of comprehension	9.53 (2.80)	8.44 (2.70)	0.153	10.93 (1.53)	10.12 (1.82)	0.059	7.79 (3.24)	8.74 (2.50)	0.290	9.33 (2.99)	10.78 (1.63)	0.082

Association between narrative discourse and sociodemographic, cognitive, behavioral and functional variables

Table 3 shows the associations between performance on the narrative discourse subtests and the sociodemographic, cognitive, behavioral and functional variables.

The following statistically significant associations were observed for the two age groups: 1) for the older adult group, performance on the partial story retelling subtest (essential and present information) was associated with performance on the cognitive screening test; 2) for the young adult group, performance on all discourse subtests was associated with the variable education. The statistically significant associations for the two education groups were as follows: 1) discourse performance of the low education group was associated with the variable age and the depression test score; 2) discourse performance of the high education group was associated with the variables education and socioeconomic status and the functional test score (Table 3).

Comparison of narrative discourse scores of groups from the DF with normative discourse means for the Brazilian population

Table 4 shows the comparison of the mean scores on the narrative discourse subtests between the groups from the DF and the Brazilian normative values for the South region of the country. For this comparison, the age and education groups

from the DF were subdivided to reflect those in the Brazilian normative study.

The discourse performance of the group of older adults with low education from the DF was above the Brazilian normative mean, whereas the performance of the group of young adult with high education was below the normative mean.

Inference generation of narrative discourse of groups from the DF

The inference generation percentage of the group of older adults with low education from the DF was 67%, whereas the percentage for the young adult group was 40%. The inference generation percentage of the group of older adults with high education was 73%, whereas the percentage for the young adult group was 60%.

DISCUSSION

The main statistically significant results of present study were as follows: 1) The older adults from the DF showed better narrative discourse performance than the young adults; 2) Relative to Brazilian normative values for the South region of the country, the older adults from the DF with low educational level had better performance, where young adults with high educational level presented worse performance; 3) Association between narrative discourse and educational level was observed for the group of young adults, whereas association between narrative

discourse and cognitive performance was found for the group of older adults; 4) In the low education group, age and performance on the depression screening test were associated with discourse performance, whereas association between discourse and the variables education, socioeconomic status and functional scores was evidenced in the high education group.

With regard to the comparison of narrative discourse performance between older and young adults, statistically significant difference was verified in all discourse subtests (Table 2), with older adults exhibiting better performance. This superior performance was observed for both scores and inference generation analysis. This result contrasts with the findings of another Brazilian study that employed the same assessment battery and which failed to find a difference between the two age groups⁽¹⁷⁾. Sociodemographic and cultural differences might explain these disparities, considering that the participants of these investigations lived almost 2000 km apart. Interestingly, in the study by Scherer et al. (2012), accuracy of responses by the older adults on the text comprehension test was statistically similar to the performance of the young adults, except for the information which depended on metaphor or cultural knowledge⁽²³⁾. In this respect, the DF presents high cultural diversity because it is only 60 years old, is the administrative center of Brazil, and is geographically located centrally in the country. Hence, it is likely that the older adults assessed in the present study have a high degree of cultural diversity, because they are from different regions of Brazil, whereas most of the young adults were born in the federative unit and raised amidst a more defined regional culture. Exposure to greater cultural diversity during the establishment of the DF is believed to favor the discourse performance of the older adults compared with that of the young adults.

In a study conducted in another country, age impacted performance on a different cognitive-communicative assessment battery, with shorter response times and higher scores observed among younger participants⁽²⁴⁾. Thus, discourse performance can be associated not only with sociodemographic variables, but also with variables intrinsic to the assessment itself, such as the tasks applied, response recording method used, and type of discourse assessed. Davis, Alea and Bluck (2015) found that older adults more accurately recalled the gist of when the event occurred, whereas young adults more accurately recalled the gist of why the event occurred⁽²⁵⁾. The authors related these differences between older and younger participants to episodic memory ability and education⁽²⁵⁾. In the DF, however, discourse performance was not associated with episodic memory (Table 3).

Using neuropsychological batteries, Scherer et al. (2012) assessed the narrative processing of young and older adults, and observed worse overall cognitive performance for the older adult group, in addition to an association between some cognitive abilities and narrative processing⁽²³⁾. In the present study, association was detected between discourse processing and overall cognitive performance for the older adults, but not for the younger adults (Table 3). Moreover, none of the sociodemographic variables were associated with discourse performance in the older adults, whereas education was statistically associated with narrative discourse among the young adults

(Table 3). Fonseca et al. (2015) reported a tendency towards a reduction in the impact of demographic variables on the older adult population, but related this to the greater heterogeneity of communicative performance in the elderly population⁽¹⁷⁾. The results presented in Table 3 corroborate this tendency and heterogeneity.

Despite the exclusion of participants with scores suggestive of depression and who were dependent on others for activities of daily living, the results in Table 1 show that young adults performed worse on the depression and functional subtests. These results suggest that the older adult group presented smaller risk of depression and greater engagement in activities of daily living compared with the young adult group. Previous studies have associated depressive symptoms with worse episodic memory performance⁽²⁶⁾ and poor episodic memory performance with more accurate recalling of the story details and fewer errors⁽²⁵⁾. In the present study, however, assessment of the relationship between the variables revealed no association of episodic memory with discourse performance for the groups studied. Nevertheless, one cannot rule out that the fewer symptoms of depression and lower engagement in activities of daily living found among the young adults may have contributed to their worse discourse performance compared with that of the older adults. The sample studied may have had other inherent sociodemographic and cultural characteristics that might be related to cognitive-linguistic, behavioral and functional performance, such as the use of smart phones by young and older adults. According to estimates by eMarketer research company⁽²⁷⁾, the estimated percentage of mobile phone users was over 95% for young adults vs. 41% for older adults. A greater tendency for use of mobile devices and digital technology among individuals with serious mental illnesses has also been reported⁽²⁸⁾. There are numerous cultural variables, depending on the characteristics of each region, which are beyond the scope of the present study, but that may have influenced its results.

The cultural role will be addressed in the ensuing discussion on the results of the comparison of discourse performance between participants with low and high educational level. The high education group had a statistically better discourse performance in only one subtest of the MAC-BR, namely, partial story retelling - present information. The better narration of information, beyond essential information, exhibited by highly educated participants corroborates another Brazilian study that analyzed discourse in the Cookie Theft picture description task of the Boston Diagnostic Aphasia Examination⁽²⁹⁾. The association of education, economic status and functional scores with discourse performance in the high education group (Table 3) highlights the importance of the role of education in quality of life. Other variables were associated with discourse performance for the low education group: age and depressive symptoms (Table 3). These data show the greater impact of the demographic variable age for the group with less access to education, further confirming the impact of cultural diversity on cognitive-discursive performance. It is likely that the low education group had fewer cultural opportunities than the high education group.

Results of the comparison between the performance of participants from the DF and the Brazilian normative mean values obtained for the South region of Brazil again highlight the impact of education, particularly among young adults. This is because the young adults with higher educational level from the DF had statistically poorer performance than participants in the normative study. Only the performance of older adults with low educational level differed between the studies, where this elderly group presented better performance. This result is believed to be associated with education because the young adult group from the DF had lower mean years of study than the young participants in the normative study⁽¹⁴⁾. However, this analysis should consider other sociodemographic aspects, given that the normative sample of older adults with poorer performance relative to the participants of the present study had higher educational level.

Some limitations to the present study should be considered when analyzing the results: 1) a qualitative analysis would have provided further information on the response patterns of the participants from the DF; 2) Response times for each discourse subtests were not measured, a variable which would have enabled identification of more discourse disparities between adults with different educational levels; 3) Scores for the recall task of the Mini-Mental State Examination were employed for the analysis of episodic memory. Considering that this task is only a part of a larger cognitive screening test, the results lacking statistical significance for the association of discourse performance should be interpreted with caution, because results on a more specific test of episodic memory might have revealed an association with discourse performance in individuals from the DF.

Taken together, the results illustrate the importance of conducting specific studies on the discourse for each region that assess demographic, cognitive and behavioral variables, as well as engagement in activities of daily living. The findings also underscore the importance of access to formal education, a variable with the potential to narrow the gap in linguistic-cognitive performance between the groups.

CONCLUSION

The high education group presented better discourse performance than the low education group. In addition, the discourse performance of older adults was better than that of young adults. Compared with the Brazilian normative discourse mean values, the group of older adult with low educational level presented better performance, whereas the group of young adults with high educational level had worse performance.

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Author contributions

MLC devised the research project; MLC and LDS were responsible for the collection, analysis and discussion of data and writing of the manuscript.