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Federal University of Rio de Janeiro State



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## RESEARCH

### Quality of life comparasion of elderly urban and rural stroke victims\*

Comparação da qualidade de vida de idosos com acidente vascular encefálico, urbanos e rurais

Comparación de la calidad de vida de los anciano con accidente cerebro vascular, urbanos y rurales

Nilce Maria de Freitas Santos <sup>1</sup>, Darlene Mara dos Santos Tavares <sup>2</sup>, Flavia Aparecida Dias <sup>3</sup>

### ABSTRACT

**Objective:** Compare the quality of life of older people with a history of Strokes residing in urban and rural areas. **Method:** A cross-sectional household survey was conducted with 56 elderly urban and 28 rural residents in Uberaba-MG. Data were collected through a structured instrument, World Health Organization Quality of Life-BREF (WHOQOL-BREF) and World Organization Quality of Life Assessment for Older Adults (WHOQOL-OLD). The projects were approved by the Ethics in Research of UFTM, protocol No. 897 and 1477. Proceeded by a descriptive analysis and t-Student test ( $p < 0.05$ ). **Results:** The elderly in urban areas had lower quality of life scores in the physical domain and the facets past, present and future activities and social participation compared to the rural area. **Conclusion:** There is the need of the healthcare team to develop strategies to improve the functionality of the elderly in urban areas, as well as future expectations and expanding opportunity for social activities. **Descriptors:** Quality of life, Elderly, Stroke, Rural population, Aging.

### RESUMO

**Objetivo:** Comparar a qualidade de vida dos idosos com histórico de Acidente Vascular Encefálico residentes nas zonas urbana e rural. **Método:** Inquérito domiciliar transversal realizado com 56 idosos residentes na área urbana e 28 na rural do município de Uberaba-MG. Coletaram-se os dados através de instrumento estruturado, World Health Organization Quality of Life-BREF (WHOQOL-BREF) e World Organization Quality of Life Assessment for Older Adults (WHOQOL-OLD). Os projetos foram aprovados pelo Comitê de Ética em Pesquisa da UFTM, protocolos N°897 e 1477. Procedeu-se análise descritiva e teste t-Student ( $p < 0,05$ ). **Resultados:** Os idosos da área urbana apresentaram menores escores de qualidade de vida no domínio físico e nas facetas atividades passadas, presentes e futuras e participação social comparados aos da área rural. **Conclusão:** Verifica-se a necessidade da equipe de saúde desenvolver estratégias para melhorar a funcionalidade dos idosos da área urbana, assim como expectativas futuras e ampliação de oportunidade de atividades sociais. **Descritores:** Qualidade de vida, Idoso, Acidente cerebrovascular, População rural, Envelhecimento.

### RESUMEN

**Objetivo:** Comparación de la calidad de vida de las personas mayores con antecedentes de Accidente Cerebro Vascular que viven en las zonas urbanas y rurales. **Método:** Encuesta domiciliar transversal realizado con 56 ancianos residentes en la zona urbana y 28 en la zona rural del municipio de Uberaba - MG. Fueron recolectados datos a través del instrumento estructurado, World Health Organization Quality of Life-BREF (WHOQOL-BREF), World Health Organization Quality of Life Assessment for Older Adults (WHOQOL-OLD). Los proyectos fueron aprobados por el Comité de Ética en Investigación UFTM, protocolo N° 897 y 1477. Se realizó análisis descriptiva y test t-Student ( $p < 0,05$ ). Los proyectos fueron aprobados por Comité de Ética en Investigación UFTM, protocolos No 897 y 1477. **Resultados:** los ancianos del área urbana tuvieron menor las puntuaciones de calidad de vida en el dominio físico y las facetas actividades pasadas, presente y futuro y la participación social comparado con el área rural. **Conclusión:** Existe la necesidad del equipo de salud para desarrollar estrategias para mejorar la funcionalidad de los ancianos en las zonas urbanas, así como las expectativas futuras y la ampliación de oportunidad de las actividades sociales. **Descriptores:** Calidad de vida, Anciano, Accidente cerebrovascular, Población rural, Envejecimiento.

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## INTRODUCTION

In Brazil, as well as in large part of the world, aging population is a reality. The Brazilian elderly, between the years of 1999 and 2009, rose from 9.1% to 11.3% of the population. It stands out that between the Brazilian regions this percentage is variable being 12.7% in the South East, 12.3% in the South, 10.5% in the Northeast, 9.5% in Midwest and 7.3% in the North.<sup>1</sup>

It is known that the aging process brings several physiological and functional changes<sup>(2)</sup>. These changes make the elderly more susceptible to submit poly-morbidities, especially chronic diseases, especially for cerebrovascular accident (CVA).<sup>2</sup>

The incidence of CVA doubles every decade after 55 years of age, making it occupy a prominent position among the elderly.<sup>2</sup> In Brazil this disease is on the list of the six major causes of hospitalization among the elderly, being that among men it corresponds to 5% and among women 6.2%.<sup>3</sup> It is a morbidity with high mortality rate, being responsible for presence of physical and intellectual limiting sequels, which generate a high social cost, affecting these elderly's quality of life.<sup>4</sup>

Research conducted in the state of São Paulo, Brazil found that the physical dimension, followed by the physical and emotional aspects showed a lower average quality of life, through the instrument, 36-Item Short Form Health Survey (SF-36) among the elderly affected by CVA.<sup>5</sup> Since, in Tanzania, elderly patients with a history of stroke, residents in rural areas, they had lower scores in all domains of the WHOQOL-BREF when compared to the control group, consisting of elderly without CVA.<sup>6</sup>

A Study conducted in the United States of America has found that there is no influence from environment in which the elderly lives and the chances of developing CVA.<sup>7</sup> Under this assumption it is believed that the quality of life of elderly patients with stroke may also be different depending on their place of residence.

No studies were found that compare the quality of life of elderly patients with a history of stroke considering the place of residence. Thus, considering the scarcity of scientific literature, especially when you have a disabling morbidity such as CVA, it is proposed to conduct this study.

It is believed that the data from this investigation may assist in the outlining of actions, on the part of health professionals, who seek the face of the difficulties encountered by elderly people with a history of CVA.

In this context, the objectives of this study were to compare the socio-demographic variables and the scores of quality of life of elderly patients with a history of CVA residents in the urban and rural areas of the municipality of Uberaba-MG, Brazil.

## METHODOLOGY

A comparative Study, cross-sectional and observational developed with elderly residents in urban and rural areas of the municipality of Uberaba-MG, Brazil.

In the municipality, the total population of elderly residents in the rural area, registered by the Family Health Strategy (ESF) and made available by the Primary Healthcare Information System (SIAB) in May 2009 was 1,297 inhabitants. From the 850 elderly interviewed the following were excluded from this study: 105 (8.1%) did not meet the MMSE score; 75 (5.8%) refused; 11 (3.8%) died; 57 (4.4%) could not be found after three visits; 117 (9%) changed their address; 3 (0.2%) hospitalization; 79 (6.1%) canceled for other reasons.

For the definition of the population in the urban area, the population sample conducted by the Nucleus of Research in Public Health was used. The sample size was calculated at 2,892 elderly individuals whereas 95% confidence, 80% power of the test, margin of error of 4.0% for the interval estimates and an estimated proportion of  $\pi=0.5$  for the proportions of interest. However, in 2005, 2,683 elderly participated. In 2008, there were 2142 elderly interviewed, since 541 elderly were excluded, of which, 200 were not found after three visits, 174 refused, 142 died and 25 were hospitalized.

In the rural area, the data were collected in the period from June 2010 to March 2011; in the urban area from August to December 2008.

The elderly were interviewed at home. In the rural area, the location of the residence counted with the collaboration of Community Health Agents. Authorization was obtained from the Municipal Health Department for this activity.

For this present research the following inclusion criteria was used: more than 60 years of age; lived in urban or rural areas in the municipality of Uberaba-MG; obtain a minimum score on the cognitive assessment, self-referred CVA and agreed to participate.

In the urban area 90 elderly patients met the inclusion criteria and in the rural, 28. The elderly were matched by gender and age group in the proportion of 2:1.

Before starting the interview, a cognitive assessment was performed with the elderly, looking to evaluate their conditions in answer the proposed questions. The cognitive assessment was performed by using the Mini Mental State Examination (MMSE), translated and validated in Brazil<sup>(8)</sup>. The MMSE score varies from 0 points, which indicates the highest degree of cognition impairment, up to 30 points, which corresponds to the best cognitive capacity. For the urban area, a cut-off point of 12/13 was established, obtaining a sensitivity of 93.8 and specificity of 93.9. The cognitive deterioration was indicated by a score equal to or less than 12.<sup>8</sup> Since in the rural zone the cut-off point was established in accordance with the schooling presented by elderly, being: 13 for illiterate, 18 for 1 to 11 years of study and 26 for over 11 years.<sup>9</sup> This change has occurred, because it was deemed appropriate to use this cut-off point.



To characterize the elderly a structured instrument was used, based on the questionnaire Older Americans Resources and Services (OARS), prepared by Duke University (1978), and adapted to the Brazilian reality.<sup>10</sup> The variables studied were: gender (male and female), age range in years (60-70, 70-80 and 80 and more), marital status (married or living with a partner, separated / legally separated / divorced, widowed and single), education in years of schooling (no schooling; 1-4; 4-8, 8, 9-11 and 11 or more) and individual income in minimum wages (no income, <1, 1-3, 3-5, >5).

The quality of life was assessed by instruments World Health Organization Quality of Life-bref (WHOQOL-BREF)<sup>11</sup> and World Health Organization Quality of Life Assessment for Older Adults (WHOQOL-OLD)<sup>12</sup>, both validated in Brazil.

The WHOQOL-BREF assesses the quality of life based on four domains: physical (pain and discomfort, energy and fatigue, sleep and rest, mobility, activities of daily life, dependence of medication or treatments and the ability to work); psychological (positive feelings, thinking, learning, memory and concentration, self-esteem, body image and appearance, negative feelings, spirituality, religion and personal beliefs), social relationships (personal relationships, social support, sexual activity) and environment (physical security and environmental protection, in the home, financial resources, health and social care: availability and quality, opportunity to acquire new information and skills, participation in, and opportunities for recreation/leisure, physical environment: pollution, noise, traffic, climate and transportation).<sup>11</sup>

The WHOQOL-OLD is composed of six facets: functioning of the senses (evaluates the functioning sensory and the impact of the loss of skills in sensory quality of life); autonomy (refers to independence in old age, describes up to that point if it is able to live independently and make their own decisions); activities past, present and future (describes the satisfaction about achievements in life and things that longs); social participation (participation in daily activities, especially in the community), death and dying (worries, anxieties and fears about death and dying) and intimacy (evaluates the ability to have personal and intimate relationships).<sup>12</sup>

They were constructed of electronic databases, the program Excel®, the collected data were processed in a microcomputer, for two people, in double entry. It was the consistency of data between the banks, when inconsistent, returned to original interview for correction. Taken from both databases were relevant variables to compose the database the current research. This was transported to the software Statistical Package for the Social Sciences (SPSS) for carrying out the analysis.

The data were submitted to descriptive analysis by means of simple frequencies, mean and standard deviation, chi-square tests and *t*-Student ( $p < 0.05$ ). Each domain of the WHOQOL-BREF and facet of the WHOQOL-OLD were analyzed separately, with their scores calculated using the syntax provided by WHO. The score ranges from 0 to 100, with the greatest number corresponding to higher QV.

The projects were approved by the Committee for Ethics in Research with Human Beings from the Federal University of Triangulo Mineiro, protocol numbers, 897 and 1477. The elderly were contacted in their homes, which aimed to present, the Term of Free and Informed Consent and provided relevant information. Only after the consent of the

interviewee and the signature of the Term of Free and Informed Consent, an interview was conducted.

RESULTS AND DISCUSSION

The majority of elderly people affected by CVA was male (53.6%). This result corroborates with other investigations that show a higher incidence of stroke among men.<sup>13-14</sup> It is well known that the presence of men in primary care health services is lower than the women <sup>15</sup>, thus, it can be inferred that men become more vulnerable to diseases, highlighting the serious and chronic ones such as CVA. The healthcare team must devise insertion strategies for the elderly male on health services in order to control risk factors and prevent AVC.

Already regarding the age range, there was a higher percentage of elderly with 60 | 70 years (50%). Corroborating with results obtained in research conducted in Campinas-SP (43.3%).<sup>13</sup> It is emphasized that the age is considered not modifiable risk factor for CVA.<sup>2</sup> However, this morbidity, has modifiable risk factors, such as hypertension, smoking, sedentary lifestyle, diabetes *mellitus*, among others.<sup>2</sup> In this regard the health professionals should pay attention to modifiable risk factors aiming their prevention and control in order to prevent episodes of CVA and its recurrence.

Shown in Table 1, below is the characterization of the population studied.

**Table 1.** Frequency Distribution of socio-demographic characteristics of the elderly affected by CVA from urban and rural areas. Uberaba, 2011.

Variables		Urban Area		Rural Zone		x <sup>2</sup>	p
		N	%	N	%		
Marital Status	Married / lives with partner	31	55.4	23	82.1	6.279	0.099
	Separated / legally separated / divorced	5	8.9	1	3.6		
	Widowed	16	28.6	3	10.7		
	Single	4	7.1	1	3.6		
Schooling (In years)	No schooling	19	33.9	10	35.7	1.212	0.876
	1   4	15	26.8	6	21.5		
	4   8	17	30.4	10	35.7		
	8	1	1.8	-	-		
	9   11	4	7.1	2	7.1		
Individual Income (In wages minimum)	No income	6	10.7	2	7.1	9.692	0.045
	Up to 1	1	1.8	1	3.6		
	1	41	73.2	13	46.4		
	From 1 to 3	8	14.3	11	39.3		
	More than 5 years	-	-	1	3.6		

Considering the marital status 55.4% of elderly people in the urban areas and 82.4% of the elderly affected by CVA in rural areas were married (x<sup>2</sup>=6.279; p=0.099), Table 1.

Study conducted in the urban area of a city in the interior of Rio de Janeiro found higher prevalence of elderly married (46%),<sup>4</sup> corroborating with the present investigation. Another study carried out in Rio Grande do Sul with elderly people in general of a rural community, it was found that the majority had companion (58.8%),<sup>16</sup> result similar to this research.

The healthcare team must be attentive to the percentage of elderly married regardless of place of residence, since CVA is an incapacitating morbidity that often leads the elderly, to need a caregiver. The spouse being the person closest to the elderly may be this caregiver need of guidance and support for this function assist in the rehabilitation process of the elderly.

In relation to education, there was a higher percentage of elderly people without schooling in the urban area (33.9%); in rural area prevailed those without schooling (35.7%) and with 4-8 years of schooling (35.7%) ( $\chi^2 = 1.212$ ;  $p = 0.876$ ), Table 1. Corroborating with the result in the research conducted in the state of São Paulo, Brazil in the urban area, with elderly patients after CVA, in which 45.4% knew how to read and write, but did not have complete grade school.<sup>14</sup> A Survey conducted in the state of Rio de Janeiro also obtained a result similar to the present investigation, being that 46% of the elderly had until the 4th grade of the grade school.<sup>4</sup>

It is necessary that health professionals use educational technologies and communication, through playful strategies and vocabulary accessible to facilitate the understanding by the elderly, facing the low education found in this study.

In the rural area, it was observed a higher percentage of elderly people with higher income, Table 1. The majority of elderly people with CVA living in the urban area (73.2%) reported monthly income of one individual minimum wage, already in the rural zone the elderly received a minimum wage (46.4%) and one to three minimum wages (39.3%) ( $\chi^2 = 9.692$ ;  $p = 0.046$ ), Table 1. Lower Percentage was found in research with urban elderly post-CVA, which found that 45.4% received a minimum monthly salary.<sup>14</sup> Since in the rural area it is inferred that the presence of higher wages may be due to the existence of other sources of income, different retirement savings, such as agriculture and livestock.

Income is an impact factor when you have a morbidity such as CVA that can cause functional disability, causing difficulty in performing daily life activities. To facilitate the performance of these activities are often necessary adaptations in the home, which can cause a financial burden due to their high cost. Another factor that can affect the income of the elderly with CVA is the need of constant use of medicines. Health professionals should be alert to these issues because the low income found in the present study.

There was a predominance of elderly urban areas (62.5%) and rural (50%) that self-assessed their quality of life as good. Considering the result of this positive study, because scientific studies show that the elderly affected by CVA suffer deterioration in their quality of life due to limitations and physical disabilities and cognitive morbidity from<sup>13,17</sup>.

The highest percentage in both groups, urban (40%) and rural (53.6%), was satisfied with their health. A Study carried out in São Paulo, with urban elderly, it was found that the largest percentage of elderly with BIRD-assessed their health as good (48.8%), result reciprocally assumed with this study.<sup>18</sup>

Regarding the rural elderly, they have rated their health better than urban; it appears that residents of rural areas, even with a history of CVA in the rural environment have a higher offer of challenges, architectural and occupational, owed to these present better health conditions for living in this space.

Inserted in Table 2, below, are the scores of quality of life of elderly persons affected by CVA residents in the urban and rural areas of the municipality of Uberaba-MG. **Table 2.** Distribution of quality of life scores of WHOQOL-BREF and WHOQOL-OLD, elderly affected by CVA. Uberaba, 2011.

Quality of life Scores	Areas		t	p
	Urbana	Rural		
WHOQOL-BREF				
Physical	42.85	58.92	3.944	<0,001
Psychological	61.65	63.54	0.559	0.578
Social Relations	64.43	69.94	1.858	0.067
Environment	58.53	60.71	0.663	0.509
WHOQOL-OLD				
Functioning of the senses	70	71.87	0.348	0.729
Autonomy	53.52	59.82	1.566	0.121
Activities past, present and future	61.04	67.18	2.137	0.036
Social Participation	54.57	63.61	2.311	0.024
Death and dying	80.46	76.56	-0.745	0.458
Intimacy	67.74	74.77	1.682	0.096

The higher quality of life score by WHOQOL-BREF was found in social relationships for both the elderly residents in the urban area (64.43) with respect to the rural (69.94), Table 2. This Result corroborates with research conducted with urban elderly with a history of stroke in China who also found higher scores in social relationships (66.62).<sup>17</sup> The mentioned domain assesses the personal relationships and social support.<sup>11</sup> In this sense, a high score in this field suggests that the elderly have good social support networks in both localities.

The lowest score by WHOQOL-BREF was in the physical domain, both in the urban area (42.85), as in rural (58.92), Table 2. This fact can be explained by deficits from the CVA, which lead to decreased mobility, making it difficult for the implementation of the activities of daily life and the ability to work, these issues evaluated in this field.<sup>11</sup> A study carried out in the rural area of Tanzania also obtained lower scores in this area between individuals with CVA.<sup>6</sup> Another research conducted in Turkey showed that the components of productivity and energy were the most impacted among elderly with CVA,<sup>19</sup> consistent with this research.

The elderly people of the urban area (42.85) had lower scores of quality of life in the physical domain compared to the rural (58.92) ( $t=3.944$ ;  $p<0.001$ ), Table 2. Although not investigated in this investigation, the greatest impact in the urban area, in the physical



domain, may be related to lower income among these elderly whereas this domain assesses the dependence of medication and treatments.<sup>11</sup> In this respect, it is important that health services are mindful of the difficulties of these elderly patients in follow the monitoring and possible strategies for rehabilitation.

Stresses that can be used self-help groups, support, and counseling programs, Community<sup>6</sup> aiming to facilitate the interaction of urban elderly with the potential limitations imposed by the disease.

The WHOQOL-OLD the highest score was in the death and dying facet, both in the urban area (80.46) as in rural (76.64), Table 2. The result refers to the fact that the elderly, both residents of rural areas as urban, of knowing deal with their concerns, worries and fears in relation to death, those aspects evaluated in this facet.<sup>12</sup>

The lowest score in WHOQOL-OLD was in facet autonomy both in urban area (53.52) as in rural (59.82), Table 2. The autonomy facet values freedom of the elderly to make their own decisions, to feel control over their future, being able to do things that they would like to do and believe that people around them respect their liberty.<sup>12</sup> Considering the major impact on the physical aspect, among all elderly, it is needed to identify whether this is related to decreased autonomy. Therefore, it is also relevant that are identified the possible sequelae caused by the disease; they are motor, cognitive, emotional and social which may be hindering the daily activities and consequently their autonomy and independence<sup>5</sup>.

Autonomy is crucial for a good quality of life being basic assumption for decision-making. It is inferred that the lowest score in this facet can be related to the devaluation of the desires of the elderly by their family, considering CVA as an aggravating factor. The healthcare team must learn how to deal with this issue, guiding and stimulating the family about the need to respect and encourage the decision-making of the elderly affected by CVA.

Compared to the elderly in the rural area (67.18), the urban elderly (61.04) had lower scores in facet activities past, present and future ( $t=2.137$ ;  $p=0.036$ ), Table 2. The facet, past, present and future activities evaluates the satisfaction about the achievements in life and the things that the elderly yearns.<sup>12</sup> It is believed that the elderly residents of the rural area will feel less impact of CVA in their daily lives from not occurring many modifications in their routine.

In addition, it is inferred that the lower urban score may be related to lower income hindering the glimpse of future projects among these elderly people. In addition, a considerable percentage of these elderly who do not have a companion. Research conducted among elderly patients showed that those who were single/widowed separated had a poorer perception of quality of life than the married.<sup>20</sup> Another aspect observed in this study was the family functionality, being that the elderly who interacted better with the family had better quality of life.<sup>20</sup> Thus, it is suggested that the health care professional should encompass the assessment of family network<sup>20</sup> in the elderly because it is considered this primordial for which the elderly person can have positive expectations for the future.

Regarding the future hopes, health professionals should encourage elderly residents in the urban area to value their skills and pursue new in order to improve their quality of life.

In the social participation facet, the elderly of the urban area (54.57) had lower scores ( $t=2.311$ ;  $p= 0.024$ ) compared to the rural (63.61), Table 2. The facet social participation assesses aspects such as the use of free time and participation in activities in the community.<sup>12</sup> in this study, the lowest score in the urban area may be the result of the lower income among these elderly people, making unfeasible access to Community activities, although in rural area, the opportunities for activities they are minors. A Study carried out in the rural area of Tanzania has noted that among individuals with stroke who participate in social meetings the physical and psychological aspects were better.<sup>6</sup>

In this sense, the health professionals should discuss with the elderly people of the urban area activities that gives them interest and understanding the leisure opportunities existing in place of residence. They should also check the possibility of structuring new activities in order to stimulate the acquisition of new information and skills of these seniors, promoting the enhancement of existing ones and providing opportunities for social interaction.

The healthcare team should seek ways of stimulating the elderly people with a history of stroke, even when patients with more severe sequelae, to attend these activities. In the impossibility of going to healthcare services for such activities one must seek ways to insert them in their own residence, seeking family support.

## CONCLUSION

The elderly affected by CVA, both in urban as in rural area were in their majority men, in the age range of 60 | 70 years, one minimum monthly salary as their income. In the urban area, there was a higher prevalence of elderly illiterate and separated /legally separated/divorced; in the rural illiterate and with 4 | 8 years of schooling and married.

The elderly residents in the urban area had lower scores of quality of life in the physical domain and the facets activities past, present, future, and social participation when compared to rural areas.

The healthcare team should develop strategies for insertion of the elderly in activities that seek to improve the mobility and facilitate the implementation of their activities of daily life, especially in the urban area, in order to minimize the incapacitating effects of CVA.

Future expectations should also be stimulated, through educational activities and creation of groups aiming at the exchange of experience among the elderly affected by CVA aiming at the improvement of their quality of life.

It is also relevant that the health services seek intersectoral partnerships aiming at contributing to expansion of social activities that are pleasing for this population.

It is noteworthy as a limitation of this study was the morbidity, CVA, being self-reported and crosscut which does not establish causality relationships among the variables.

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