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Cognitive capacity, style and quality of life of the elderly: a cross-sectional study

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ABSTRACT

Aim: to verify the cognitive ability, style and quality of life of elderly primary care users. **Method**: a cross-sectional, correlational, analytical and descriptive study with a quantitative approach. A total of 252 semi-structured questionnaires were applied to the urban elderly, containing sociodemographic information, cognitive ability assessment and questions regarding style and quality of life. **Result:** there was a predominance of females with low schooling, presence of cognitive decline in 68.25% (n=172) of the elderly and a significant association between the Health Units (p=0,0351). **Discussion:** it should be pointed out that elderly people who do not present a decline have a better score in the nutrition component, this data emphasizes that maintaining good eating habits positively influences cognitive ability. **Conclusion:** the interviewees are young elderly with cognitive decline. Emphasis is given to the importance of nurses acting as health promoters, favoring active aging.

Descriptors: Aging; Cognition; Lifestyle; Quality of life.

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INTRODUCTION

The global demographic panorama emphasizes that the aging of the population has taken place, bringing with it the challenge of keeping the elderly active for as long as possible, prolonging the loss of cognitive capacity and preventing the emergence of diseases that could compromise the quality of life of these individuals as they grow older[1,2].

The aging process implies an increased risk for the development of biological, social, economic and psychological vulnerabilities due to the various changes that occur in this period of life. In addition, it brings with it changes in the cognitive part, making it difficult for the elderly to learn new things, to receive current information, and also to present a compromise of spatial orientation. Recent research highlights that these factors worsen over the years, that is, older people tend to have greater cognitive declines[2,3].

Thus, the elderly with cognitive impairment begin to demonstrate limitations that interfere not only in the performance of daily activities, in the loss of autonomy, but also in the overload of caregivers. These functional and psychosocial losses may have repercussions in the emergence of pathologies such as depression and dementias, which will impair the experience of the elderly in the family and social environment[2].

It is emphasized that cognitive impairment affects the individual in its entirety; thus, it is necessary to adopt measures that prevent and evaluate this loss of cognitive function. Some instruments were designed to evaluate the cognitive function and functional capacity of the elderly, and may determine the degree of cognitive impairment. From then on, the health team, especially the nurse, may identify early cognitive decline and be able to carry out individual prevention and intervention strategies, in an early and efficient manner[4].

Considering these aspects, it is essential that the active elderly, capable of performing the basic and instrumental activities of daily life, as well as those that already present a reduced cognitive capacity and have functional impairment, participate in actions that promote health, seek to have good quality of life and to develop a healthy lifestyle, thus preventing further cognitive losses and progression to dementia.[2].

The style and quality of life are determining factors in the search for the improvement of the cognitive capacity. The elderly person who has good eating habits, practices physical activities periodically, sleeps enough, avoids the consumption of malicious products, has housing, access to health services, maintains social relations and has the capacity to perform tasks and intellectual activities is regarded as an individual who has positive factors that can increase their quality of life and life expectancy[2,3,5].

Although many studies have emphasized that cognitive ability is influenced by style and quality of life, few studies have been conducted in the elderly, and are focused only on biological losses, decreased social bonds and psychological changes[2,3]. In view of the above, the need for research that exposes the particularities of aging and contributes to the planning of nursing actions is considered. Aiming to fill the existing gap, this study focuses on verifying the cognitive ability, style and quality of life of elderly primary care users.

METHOD

A cross-sectional, correlational, analytical and descriptive study using a quantitative approach was undertaken. A total of 252 elderly residents of the city of Itaipulândia (PR), with an estimated population of 10,236 inhabitants and 12% of elderly people, transcended the ex-

pected rates of elderly people in Brazil[7]. There are four Basic Health Units that provide care to the population, a center that serves the largest flow of people and three peripherals that provide care to other neighborhoods. All of them have a computerized system, called E-SUS, for patient registration and follow-up. On average, 250 elderly people who seek medical care, nursing, nutrition, dentistry and guidelines with health agents are assisted per week.

Firstly, a survey was carried out in the computerized system of the elderly population, in the Basic Health Units: Santa Inês, São José do Itavó, Caramuru and UBS Central. Elderly persons aged 60 or over were considered eligible. In total, 754 elderly were enrolled for the four BHUs (UBS) (Table 1).

Chart 1. Distribution of the elderly by Basic Health Unit, Itaipulândia (PR)

Local	Urban	Rural	Total
UBS Santa Inês	68	114	182
UBS São José do Itavó	64	00	64
UBS Caramuru	93	00	93
UBS Central	415	00	415

For the calculation of the sample size, a prevalence of chronic diseases in the elderly population was considered to be 50% (p=0.5). The rule for the calculation of samples for proportions, considering the correction factor for finite populations, is given by the following formula:

$$n = \frac{N.\hat{p}.\hat{q}.(z_{a/2})^2}{\hat{p}.\hat{q}.(z_{a/2})^2 + (N \square 1).erro^2}$$

A total population of (N = 754) elderly, a 95% confidence level (Z = 1.96) and a 5% error (error = 0.05) were considered. In order to maintain the representativeness of the elderly sample to be interviewed, the elderly sample (n=252) was selected directly proportional to the number of elderly persons assisted at the BHUs. However, due to the difficulties encountered in collecting the data in the peripheral BHUs (Santa Inês, São José do Itavó, Caramuru), the selection of the sample was non-probabilistic. For the BHUs located in the central region the selection of the sample was random.

Persons over 60 years of age who had sensory (blindness, deafness, mute) and motor deficits (orthopedic, rheumatologic) that can prevent these assessments were excluded.

Data collection interviews were conducted in the elderly household from February to April 2016. The main researcher identified the elderly eligible for the study, followed by presentation of the research objectives and invitation to participate. In the case of acceptance, the Free and Informed Consent Form was signed or the digital pulp impregnated, and a questionnaire was then applied with sociodemographic questions regarding age, sex, education, monthly income, occupation, and family arrangement. They were also asked whether they attend the senior academy, among other issues that assess cognitive ability, style and quality of life.

As data collection instruments, the questionnaire used was the Mini Mental State Exam[8], which evaluates the cognitive ability of the elderly in temporal and spatial orientation, recording, attention and calculation, memories and language, with scores of 0 point, which indicates greater cognitive impairment, at 30 points, which corresponds to the better cognitive capacity. Interviewees were classified with or without cognitive decline. The Individual Lifestyle Profile questionnaire[9] evaluates: nutrition, physical activity, preventive behavior, social relationship and stress control classified according to Likert scale of 0-3 in each component. And the Old Whoqol questionnaire[10] evaluates six aspects of quality of life: sensory functioning, autonomy, past, present and future activities,

social participation, death and dying, intimacy, featuring scores from 4 to 20 in each facet and total score of 24 to 120 points, in which low scores indicate poor health perception and high scores good health perception.

The data were described by means of frequency tables. The association between the categories was tested using the Chi-square test ($\chi 2$) or Fisher's Exact Test. The difference between groups was tested using the Wilcoxon test. The decision to reject H0 was not taken considering a confidence level of 95% ($\alpha = 0.05$), that is, p-value less than 0.05. The data were analyzed in the Statistical Analysis Software Program (SAS, version 9.4, from a database built through the Excel application).

This study respected the formal requirements contained in the ethical standards for research involving human beings, following Resolution 466/12 of the National Health Council, and it was submitted to the Research Ethics Committee (CEP) of the University Center of Maringá - Unicesumar and was approved under opinion No. 1,401,270.

RESULTS

The mean age was 70.22 years, 62.69% (n=158) reported being female and 37.70% (n=94) were males. As for the presence of cognitive decline, there is a significant association between sexes (p=0,0451). In relation to marital status, married couples predominated, with 59.92% (n=151), and the presence of the decline between the different conditions was also statistically significant (p=0,0492).

As for schooling, it can be verified that the majority of the elderly are illiterate or have up to four years of study, that is, 70,23% (n=117) and 44,44% (n=112) respectively. In relation to monthly income, 96.81% (n=244) receive up to one minimum wage, and 85.31% (n=215) report being inactive economically. When the family arrangement is observed, it is possible to verify a significant association (p=0.0215) between those who are accompanied and those who are alone (Table 1).

Table 1. Socio-demographic characteristics and cognitive decline of the elderly users of the Basic Health Units of Itaipulândia (PR), 2016

Profile	Cognitive decline		p-valor
	No n (%)	Yes n (%)	
Sex			
Women	55 (68,75)	103 (59,98)	0,0451*
Men	25 (31,25)	69 (40,12)	
Age (years)			
60 - 69	46 (57,50)	81 (47,09)	
70 - 79	29 (36,25)	68 (39,53)	0,1481
80 and up	5 (6,25)	23 (13,37)	
Marital status			
Single	1 (1,25)	10 (5,81)	
Married	55 (68,75)	96 (55,81)	0,0492*
Widower	16 (20,00)	55 (31,98)	
Divorced	8 (10,00)	11 (6,40)	
Education			
Non-literate	49 (61,25)	68 (39,53)	
1 to 4 years of study	27 (33,75)	85 (49,42)	----
5 to 8 years of study	4 (5,00)	17 (9,88)	
9 to 11 years of studies	0 (0,00)	2 (1,16)	
Monthly income (minimum wages)			
< 1 sm	14 (17,50)	25 (14,33)	
1 sm	64 (80,00)	141 (81,98)	0,7771
2 a 3 sm	2 (2,50)	6 (3,49)	

Economic Occupation			
Active	15 (18,75)	22 (12,79)	0,0689
Inactive	65 (81,25)	150 (87,21)	
Family arrangement			
Alone	14 (17,50)	49 (28,49)	0,0215*
Accompanied	66 (82,50)	123 (71,51)	
Attends Senior Academy			
Yes	21 (26,25)	54 (31,40)	0,0847
No	59 (73,75)	118 (68,60)	
Economic class			
B	0 (0,00)	3 (1,74)	
C	15 (18,75)	24 (13,95)	-----
D-E	65 (81,25)	145 (84,30)	

**significant at the confidence level of 95%*

Table 2 shows the number of elderly per primary health unit (central and peripheral) for cognitive decline. It can be observed that independent of the health unit, most of the elderly have cognitive decline, in a total of 68.25% (n=172).

It is verified that the absence of cognitive decline is greater in the peripheral units (34.16%), while the presence of decline is more expressive (78.00%) in the Central Unit, with a significant association between both (p=0,0351).

Table 2. Basic Health Units and presence of cognitive decline in the elderly, Itaipulândia (PR), 2016

Cognitive decline	Peripheral Units	Central Unit	p-value
	n(%)	n(%)	
No	69(34,16)	11(22,00)	
Yes	133(65,84)	39(78,00)	0,0351*
Total	202(100)	50(100,00)	

**significant at the confidence level of 95%*

Regarding the presence of cognitive decline for the Style and Quality of life of the elderly, only 31.74% (n=80) of the elderly did not present cognitive decline. When the domains of Style and Quality of life were observed, there was a significant association (p=0.0350) in the nutrition component, and the elderly with no cognitive decline had a higher mean score in this component; thus, it was verified that good eating habits positively influence cognitive ability (Table 3).

Table 4 presents the evaluation of the Style and Quality of life of the elderly users of Basic Health Units, with a significant association between both. The Central Unit presented better scores in the Total Lifestyle Score (p=0,0005), in the nutrition component (p=0,0191), preventive behavior (p=0,0272), and stress control (p=0,0174). When the Quality of Life is observed, it is also possible to verify a significant association, in which the Peripheral Units present a higher mean score in the Total Quality of Life (p=0,0444) and in the Facet Past, Present and Future Activities (p=0,0461). It is noteworthy that the elderly of the Central Unit refer to a better lifestyle, while the elderly of the peripheral units presented a better perception of the quality of life.

DISCUSSION

In this study, there was a predominance of female participants with low schooling, monthly income up to one minimum wage, who lives with companions, do not attend the Senior Academy and belong to the economic class D-E. These data corroborate with studies that affirm that the feminization of aging, associated with low schooling and disadvantaged economic class, has now become a fact[5,11].

When the cognitive capacity was evaluated, 68.25% of the interviewees presented cognitive

Table 3. Comparison of the scores (Wilcoxon test), in the presence or not of cognitive decline for the Style and Quality of life of the elderly users of Basic Health Units of Itaipulândia (PR), 2016

Domains	Cognitive decline				p-value
	No (n = 80)		Yes (n = 172)		
	Median	Average Score	Median	Average Score	
Lifestyle					
Total score	31,00	130,89	30,00	124,46	0,2571
Nutrition	8,00	138,47	7,00	120,93	0,0350*
Physical activity	3,00	118,80	3,00	130,08	0,1244
Preventive behavior	6,00	129,21	6,00	125,23	0,3408
Social relationships	7,00	137,04	6,00	121,60	0,0564
Stress management	8,00	126,20	8,00	126,64	0,4822
Quality of life					
Total score	88,50	118,96	89,00	129,29	0,1469
Sensory functioning	12,00	124,44	12,00	127,46	0,3785
Autonomy	14,00	125,86	14,00	126,79	0,4620
Past, present and future activities	15,00	122,35	15,00	128,43	0,2681
Social participation	13,00	118,91	14,00	130,03	0,1288
Death and Dying	16,00	121,57	16,00	128,79	0,2258
Intimacy	18,00	125,01	18,00	127,19	0,4115

**significant at the confidence level of 95%*

Table 4- Comparison of the scores (Wilcoxon test) of the Style and Quality of life of the elderly users of the Basic Health Units of Itaipulândia (PR), 2016

Domains	Basic health Unit				p-value
	Peripheral (n =202)		Central (n = 50)		
	Median	Average Score	Median	Average Score	
Lifestyle					
Total score	29,00	119,00	34,00	156,79	0,0005*
Nutrition	7,0	121,85	8,0	145,28	0,0191*
Physical activity	3,0	125,93	3,5	128,81	0,4007
Preventive behavior	6,0	122,19	8,0	143,90	0,0272*
Social relationships	6,0	123,81	7,0	137,36	0,1167
Stress management	8,0	121,79	8,0	145,52	0,0174*
Quality of life					
Total score	90,00	129,89	85,00	110,36	0,0444*
Sensory functioning	12,00	129,56	12,00	114,13	0,0867
Autonomy	14,00	128,24	14,00	119,46	0,2216
Past and present past activities	15,00	130,32	14,00	111,05	0,0461*
Social participation	14,00	126,83	13,50	125,15	0,4420
Death and Dying	20,00	127,54	16,00	122,31	0,3204
Intimacy	18,00	129,63	18,00	113,84	0,0816

**significant at the confidence level of 95%*

decline, with a statistically significant difference between the sexes (p=0.0451), with women presenting more impairment than men. This has occurred because the female life estimate is higher, which influences the loss of cognitive ability[6]. In addition to longevity, a study emphasizes that cognitive impairment may be associated with intrinsic and extrinsic factors and schooling is considered one of the determining factors for the presence of cognitive decline. The authors emphasize that cognitive dysfunction is influenced by individual, social and environmental conditions; thus, the elderly with low schooling are in most cases exposed to poor life conditions and poor neuropsychomotor stimulation, which may lead to cognitive decline and compromise the quality of life[12].

Regarding economic activity and the presence of cognitive decline, no significant difference occurred; however, researchers report that inactive elderly people have more cognitive decline than active ones. It should be noted that remaining economically active makes them autonomous and more independent, being able to solve problems, maintain social interaction and perform daily tasks, besides helping to prevent cognitive disabilities and memory loss[13].

The evaluation of the cognitive capacity of the elderly allows to understand that the cognitive loss can limit the capacity to perform the basic activities of daily life; thus, it is possible, from this perspective, that nurses can intervene with strategies that contribute to minimizing and delaying disabilities, as it is also possible for all health staff to perform cognitive training and psychomotor activities that can rehabilitate the detected disabilities, seeking to improve the quality of life[14].

Another fact worth mentioning is that the interviewees are in the main age group of 60 to 69 years old and are considered young elders. Research has shown that increasing age is related to the presence of cognitive decline, as these are twice as high in those aged 80 or over[15]. In this study it is noticed that the presence of cognitive decline in older people (80 or +) coincides with the literature. These results point to the need to keep the elderly active and to reduce or delay the frailties caused by aging[1].

Authors have found that residing with one or more people, including grandchildren, children or spouse reflects positively on the life of the elderly, making them have better social interaction and subjective well-being, feeling more useful than those who reside alone[11]. For other researchers, the elderly who live with them have less cognitive decline than those who live alone and presented better scores when asked about the quality of life[2]. In the present study, 59.92% reported living with someone. This fact emphasizes that, even with several negative factors such as low educational level, economic class D-E and presence of cognitive decline, these elderly people have positive factors for quality of life.

From these results, we noticed the need to verify the presence of cognitive decline by Basic Health Units, facilitating the realization of strategies focused on local needs[16]. Thus, it was observed that the absence of cognitive decline is greater in the peripheral units, while the presence of decline is more expressive in the Central Unit, being statistically significant between both. This is because the estimate of life in the center is higher than in the surrounding neighborhoods; in addition, this study demonstrated that the elderly living in this central region have a better lifestyle, which reflects in longevity[5]. Thus, it is necessary to think of strategies aimed at the health promotion of these aging elders. A survey conducted in the northeast region of Brazil also verified this need and developed, along with a group of elderly people, playful and constructive tools, such as workshops, conversation groups,

group dynamics and audiovisual resources, facilitating reflection and knowledge building among extensionists and elderly women, seeking to minimize losses caused by old age and improve cognitive ability[2]. Another study pointed out that the elderly who participate in social groups and perform physical, intellectual and social activities maintain a preventive behavior for diseases. In addition, the elderly who are socially involved can maintain good mental capacity and have less stress[2].

In addition, we emphasize that, in both the Central and peripheral Units, the elderly are experiencing a cognitive decline. In this way, we emphasize that even when experiencing a situation of economic vulnerability or low level of education, the elderly can remain active by attending workshops or other group activities that favor knowledge for health promotion, disease prevention, enabling social interaction, sharing knowledge and experience and strengthening family ties, as these factors positively influence cognitive ability[13,17].

The literature shows that mnemonic functions are influenced by several factors, both environmental, biological and behavioral[4,6,11], and it can be evidenced that style and quality of life interfere in the cognitive state of the elderly.

The nutritional component is highlighted in this study, since the elderly with the absence of cognitive decline present better scores. This data emphasizes that maintaining good eating habits positively influences cognitive ability[3]. Researchers emphasize that nutritional status influences the performance of activities of daily living and maintaining good eating habits brings numerous health benefits[13].

A pioneering research carried out in the northeast region with the elderly verified the importance of feeding on hemoglobin levels. The authors describe that these individuals present insufficient dietary intake of iron, folic acid and vitamin B12, which leads to low concentrations of hemoglobin in the body and this fact is related to the presence of cognitive disorders. They pointed out that the lower the hemoglobin concentration, the greater the memory impairment of the elderly[18].

Researchers describe that physical activity promotes autonomy, helps to minimize the losses caused by old age, helps blood circulation by improving memory, and can slow cognitive losses[1,2]. Contradictory results were observed in this study, since a majority of the elderly with cognitive decline reported practicing some physical activity. As in the questioning of these elderly people the number of times was not measured, as well as the time and beginning of the practice of physical activity, this may have been a limiting factor. Even if there is such a divergence of results, scholars point out that, in order to achieve quality of life, the elderly must be integrated into society, be independent and autonomous, and maintain functional capacity with physical and cognitive conditions[19].

In the other components there was no significant difference; however, it can be seen that the elderly without cognitive impairment had a higher average score in terms of the social relationship. Studies show that maintaining a social network allows the elderly to remain involved, being part of society, and it positively influences the improvement of cognitive ability, and can delay neurological deficits[13].

Several studies describe that maintaining social relationships[11], preventing the onset of illnesses[4], maintaining healthy habits[5], being autonomous and independent are some determinants that help minimizing cognitive losses and promoting quality of life[16].

When the Quality of Life by Health Unit is verified, it is possible to observe a significant difference between the Central Unit and the Peripheral Units, and the Peripheral Units pre-

sent the total score and the Facet Present and Future Activities greater than in the Central Unit. In recent research conducted at a Day Center, this facet also presented a good score. For the authors, this fact demonstrates that the opportunity of loving and feeling loved and being satisfied with the goals achieved and with the projects carried out during the course of life has a very strong influence on the quality of life of the elderly, regardless of their economic class or age group. However, they also emphasize that, as the elderly are frequenters of the day center, they have a better quality of life compared to non-frequenters, due to the social inclusion offered by the Center's activities[17].

Research points out that knowing the cognitive state and quality of life of the elderly contributes to the planning of care. In addition, it allows the health professional to seek strategies aimed at health promotion, in order to minimize cognitive losses[15]. Thus, it should be emphasized that nurses as precursors of care should develop support groups for these elderly people who are part of the community; in addition, they should offer entertainment and help in psycho-affective relationships, and these behaviors contribute to the increase of the individual's self-esteem[2,15].

To promote the quality of life of aging individuals it is necessary to know them in the physiological, social, spiritual and emotional dimensions, and it is necessary to stimulate them continuously and with increasing degrees of complexity. In contrast, the elderly as the protagonist of their life should realize that maintaining cognitive ability depends on individual effort. Researchers have shown that training and rehabilitation programs bring good results when the elderly believe in their ability to make changes[20].

Considering these considerations, it is essential that the nurse acts as a health promoter and encourages the elderly to remain physically and mentally active. Simple actions promote quality of life and help active and healthy aging[20].

CONCLUSION

Cognitive decline is present in most of the interviewees, being more expressive in older people. There is a relationship between style and quality of life in cognitive ability, evidencing a greater influence on the nutrition component for the elderly.

This study presented the fact that it is performed in a small municipality as a limiting factor; it also focused only on the relationship between sociodemographic data and determinants of quality of life that cannot be accurately assessed. However, when it was compared with other studies, it can be pointed out that it reflected the local reality. It was able to reach the proposed goal, verifying the cognitive ability, lifestyle and quality of life of the users of primary care, managing to detect the main fragilities experienced by these elderly people and, from these results, it makes possible the realization of promotion strategies to health.

Further studies with a wider range of elderly are suggested in order to verify the relationship between lifestyle and quality of life. We emphasize the importance of nurses acting as health promoters, encouraging the elderly to perform physical, social and intellectual activities, once it was verified that quality of life helps to delay cognitive losses, favoring active aging.

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