

## QUALITY OF LIFE OF ELDERLY PRACTITIONERS OF PHYSICAL ACTIVITY IN THE CONTEXT OF THE FAMILY HEALTH STRATEGY<sup>1</sup>

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**ABSTRACT:** Cross-sectional, descriptive and correlational study with 107 elderly enrolled in two basic health units in Minas Gerais, in order to describe the sociodemographic profile and evaluate the interdependence of quality of life of the elderly and physical activity, in the face of possible factors. Initially we performed a descriptive analysis of the socioeconomic profile of the sample and the tests applied to the elderly. We sought to explore joint relationships between quality of life, physical activity and exploratory variables through principal component analysis. Three distinct profiles were identified in two dimensions that explained the relationship between quality of life and physical activity. We concluded that the quality of life for the elderly is good and is influenced by regular physical activity, absence of depression, greater cognitive ability and good family functioning.

**DESCRIPTORS:** Quality of life. Health of the elderly. Family health. Motor activity.

## QUALIDADE DE VIDA DE IDOSOS PRATICANTES DE ATIVIDADE FÍSICA NO CONTEXTO DA ESTRATÉGIA SAÚDE DA FAMÍLIA

**RESUMO:** Estudo transversal, descritivo, correlacional, realizado com 107 idosos cadastrados em duas unidades básicas de saúde, no interior de Minas Gerais com objetivo de descrever o perfil sociodemográfico e avaliar a relação de interdependência entre a qualidade de vida de idosos e atividade física, diante de possíveis fatores determinantes. Inicialmente foi realizada uma análise descritiva do perfil socioeconômico da amostra e dos testes aplicados aos idosos. Buscou-se explorar relações conjuntas entre a qualidade de vida, atividade física e as variáveis exploratórias por meio da análise de componentes principais. Foram identificados três perfis distintos, que explicaram, em duas dimensões, a relação entre qualidade de vida e atividade física. Conclui-se que a qualidade de vida dos idosos é boa e influenciada pela prática de atividades físicas regulares, ausência de depressão, maior capacidade cognitiva e boa funcionalidade familiar.

**DESCRIPTORIOS:** Qualidade de vida. Saúde do idoso. Saúde da família. Atividade motora.

## LA CALIDAD DE VIDA DE LOS ADULTOS MAYORES FISICAMENTE ACTIVOS EN EL CONTEXTO DE LA ESTRATEGIA DE SALUD FAMILIAR

**RESUMEN:** Estudio transversal, descriptivo por correlación, realizado con 107 adultos mayores de dos unidades básicas de salud en Minas Gerais. El objetivo fue describir el perfil sociodemográfico y evaluar la interdependencia de la calidad de vida de los adultos mayores, la actividad física y posibles factores. Inicialmente se realizó un análisis descriptivo del perfil socioeconómico de la muestra y los testes aplicados a los adultos mayores. Hemos tratado de explorar las relaciones conjuntas entre la calidad de vida, la actividad física y las variables de exploración a través de un análisis de componentes principales (ACP). Se identificaron tres perfiles distintos en dos dimensiones que explican la relación entre calidad de vida y la actividad física. Se concluye que la calidad de vida de los adultos mayores es buena y está más influenciada por la actividad física regular, la ausencia de depresión, mayor capacidad cognitiva y el buen relacionamiento en su familia.

**DESCRIPTORIOS:** Calidad de vida. Salud del anciano. Salud de la familia. Actividad motora.

## INTRODUCTION

Since the final decades of the last century, Brazil has presented a sharp decline in fertility. This decline, combined with a reduction in mortality, brought with it the process of aging of the population.<sup>1</sup> Demographic changes have produced significant challenges in the social life. In the health area, one reflection of the increased longevity is the increasing prevalence of chronic diseases associated with aging.<sup>2</sup>

Brazil will increase from 8.6% of seniors to 13% in 2020, reaching 20% of the population in 2050. This means that in 2050 the number of elderly will, probably, be higher than that of young people below 15 years.<sup>3</sup> This probable new population profile of the country presents, from the point of view of the adoption of public and social policies, a difficult solution to achieve. Above all, the condition of longevity is associated with the fragility of aging, making the elderly vulnerable to various situations of life and health.<sup>4</sup>

Aging is an extremely complex phenomenon, caused by several factors that produce the most diverse trends and consequences. The promotion of active aging involves the achievement of quality of life, enabling individuals to realize their potential for physical, social and mental well-being throughout the course of their lives and to participate in society according to their needs, desires and capabilities.<sup>5</sup>

Since the earliest of times, quality of life was already understood as the result of individual perceptions about health, wellness and happiness. After World War II, this concept emerged as associated to satisfaction and psychological achievement with various aspects of life, from the perspective of economic prosperity and increased purchasing power of the general population. With the emergence of the environmental movement in 1970, concerns about sustainability and quality of life began to bring into question the predatory models of wellbeing of humanity driven by capitalism and consumerism.<sup>6</sup>

Quality of life is also related with individual and collective experiences and values, with the pursuit of comfort and well-being, varying with the epoch, values, spaces and different histories. It is influenced by factors that are proper to the human essence, highlighting non-material values such as love, freedom, happiness, solidarity, personal fulfillment and social integration. These, in turn, involve health-related ideas, lifestyle,

level of independence, social relationships and personal beliefs.<sup>7</sup>

A variety of concepts about quality of life exist in the literature and, yet, there is no consensus among researchers about what is the most adequate definition. Although the definition of quality of life is unclear, individuals understand the significance of having it (or not having it).

It is understood that quality of life is the individual's perception of his position in life, in the context of the culture and value systems in which he lives, and in relationship to his goals, expectations, standards and concerns. It is a broad concept of classification, affected, in a complex manner, by the person's physical health, psychological state, social relationships, level of independence, and by his relationships with the most relevant characteristics of his environment.<sup>8</sup>

Regular physical activity improves the quality and life expectancy of the elderly,<sup>9</sup> and should be stimulated throughout life.<sup>10-11</sup> Public programs and actions of specific physical activities, aimed at the elderly, also pose a challenge, as the preparation of professionals, public awareness, implementation of activities, and the existence of public policy and management support must be taken into account.<sup>12</sup>

In this sense, the focus of the research was directed toward physical activity as a means to modify the life styles and habits of the elderly, controlling or delaying the onset of chronic diseases and keeping them functionally independent for longer.<sup>11</sup> The literature points to several benefits of physical activity for the elderly, such as control of the complications of chronic diseases, improving the quality of life, weight loss, increased self-esteem, greater willingness to work, and improvement in cases of pain.<sup>13</sup>

In this way, it is expected that the most active elderly have a better quality of life, emphasizing physical activity as a protective factor for healthier aging. Thus, the objective of this study was to describe the sociodemographic profile and evaluate the interdependence between the quality of life of the elderly and physical activity in the face of possible determinant factors.

## METHODS

A cross-sectional, descriptive, correlational study was conducted using primary data from two municipalities located in the state of Minas

Gerais, with populations of 9,433 and 23,415 inhabitants, respectively.

The reference population for the study consisted of individuals  $\geq 60$  years of age, enrolled in the Family Health Strategy (FHS), participants in the Fitness Group for Elderly Persons. The sample was selected by convenience, with 107 elderly, of both sexes, participating in this study.

The fitness groups were created in two municipalities in the study, with the objective to promote health benefits for the elderly in areas covered by the teams. Previously, the Community Health Agents (CHA) in each region visited the elderly in their homes, inviting them to participate in a physical activity group, promoted by a basic health unit. The groups were in open spaces that functioned on a local and fixed schedule, to allow free entry and exit of participants. The professionals responsible for the groups, nurses and CHAs of the teams, were trained by professionals in physical education and physical therapy. Importantly, all group participants were monitored by the health teams and had regular consultations, according to every need, to verify their overall health status. All of the elderly had medical authorization to perform physical activities.

All of the elderly participants of the fitness groups were invited to participate in this study voluntarily and anonymously. Exclusion criteria were: individuals who, personally or through an informant, declared they were suffering from severe and an uncorrected visual and/or hearing deficiency, and cognitive impairment that prevented the understanding and execution of the tests.

Data collection was conducted at the homes of the elderly between January and March of 2012. The instrument for data collection was administered orally, through interviews in the homes of the elderly. The instrument contained objective questions about socioeconomic information, namely: age (60-74 years of age and  $\geq 75$  years), sex (male, female), retirement (yes, no), marital status (married, single, widowed and separated), education (illiterate, 1st level, 2nd level and graduated), individual monthly income in reais ( $\leq$  R\$ 622.00 and  $>$ R\$ 622.00).

To assess functional capacity, two instruments were used, which were the Katz Index and the Lawton-Brody Index (LBI). The Katz Index is an instrument for measuring Basic Activities

of Daily Living (ADL), hierarchically related and organized to measure independence in the performance of six functions: self-bathing, self-dressing, toileting, transferring, continence, feeding.<sup>14</sup> The LBI has as its objective to evaluate the ability of the patient to complete Instrumental Activities of Daily Living (IADLs). Moreover, simple and straightforward data were collected, relating to gait and mobility, as a way to complement the information about the functional capacity of the elderly.<sup>15</sup> In this study, the measure of functional capacity was calculated separately for ADL and IADL. Independent elderly were those who could perform daily activities independently, namely, without the help of others. The elderly who were unable to perform activities without some type of help were classified as dependent.

To trace cognitive change, the Mini Mental State Examination (MMSE) was used.<sup>16</sup> This instrument consists of questions grouped into seven categories, each designed with the objective of evaluating orientation, immediate memory and recall, concentration, calculation, language, and spatial domains. Given the low educational level of the Brazilian population, as well as that of the present sample, the cutoff point of 21/22 points for the MMSE was considered.<sup>16</sup> The elderly with lower cognitive ability were those with scores of equal to or lower than 21 points. The Geriatric Depression Scale, short version of 15 items (GDS-15), is an instrument specifically focused on the elderly population, to assess the presence of depressive symptoms.<sup>17</sup> Elderly regarded with suspicion of depression had higher scores than 5.

The Family APGAR is an instrument for evaluation of family functioning, composed of five questions, which allow the measurement of satisfaction of family members in relationship to five components considered basic in the unity and functionality of any family: adaptation, partnership, growth, affection and resolve.<sup>18</sup> To assess family functioning, the APGAR score was categorized into family dysfunction ( $\leq 7$ ) and good family functioning ( $> 7$ ).

Physical activity was evaluated by the International Physical Activity Questionnaire (IPAQ), developed with the purpose of estimating the level of habitual practice of physical activity of populations of different countries and socio-cultural contexts.<sup>19</sup> Even though all of the elderly were part of the fitness group of the FHS, the level of

physical activity was measured by two categories: sedentary and active (with a cutoff stipulated at 150 min/week of physical activity at a minimum level of moderate).

Quality of life was measured by the World Health Organization Quality of Life instrument-Old (WHOQOL-Old), proposed by the Quality of Life Group of the World Health Organization, containing 24 specific questions for the elderly.<sup>20</sup> For the present study, quality of life was obtained by calculating the total score of the WHOQOL-Old categorized by the median, being denominated low quality of life ( $\leq 60.42$ ) and high quality of life ( $> 60.42$ ).

Data collection was conducted at the homes of the elderly, or at day care for individuals in the FHS, by two nurses. All questions were asked orally by the researchers. The project was approved by the Committee on Ethics and Research of the *Universidade Federal de Minas Gerais*, under project CAAE 0413.0.203.000-11. Participants and their families received complete information regarding the objectives and rationale for the research, according to guidance in the Terms of Free and Informed Consent, and signed in duplicate together with the responsible researchers.

Initially a descriptive analysis of the socioeconomic profile of the sample and the tests applied to the elderly was conducted. Next, we sought to explore joint relationships between quality of life, physical activity and exploratory variables by means of Principal Component Analysis (PCA). This is an exploratory statistical technique used to analyze categorical data with a large number of variables, with the goal of graphically displaying groups of individuals with similar profiles in relationship to the characteristics investigated.<sup>21</sup> When individuals have similar characteristics, greater geometric proximity is found between the variables investigated in the multidimensional plane of the graph.

All of the data collected were processed using the software Statistical Package for the Social Sciences (SPSS), version 19, in which a database was constructed and statistical analyses were conducted.

## RESULTS

Table 1 shows that the majority of the elderly were younger women, retired, without a partner, and with incomes at or below the minimum wage.

**Table 1 - Sociodemographic characteristics of the elderly of the Family Health Strategy. Minas Gerais, 2012 (n=107)**

Variable	n	%
Age range		
60 - 74 years	76	71.0
$\geq 75$ years	31	29.0
Sex		
Masculine	35	32.7
Feminine	72	67.3
Education		
Illiterate	21	19.6
1 <sup>o</sup> level	79	73.8
2 <sup>o</sup> level	2	1.9
Graduated	4	3.7
Did not respond	1	0.9
Retired		
Yes	82	76.6
No	25	23.4
Marital status		
Married	44	41.1
Single	17	15.9
Widowed	37	34.6
Separated	8	7.5
Did not respond	1	0.9
Monthly salary		
$\leq R\$622,00$	69	64.5
$> R\$622,00$	34	31.8
Did not respond	4	3.7

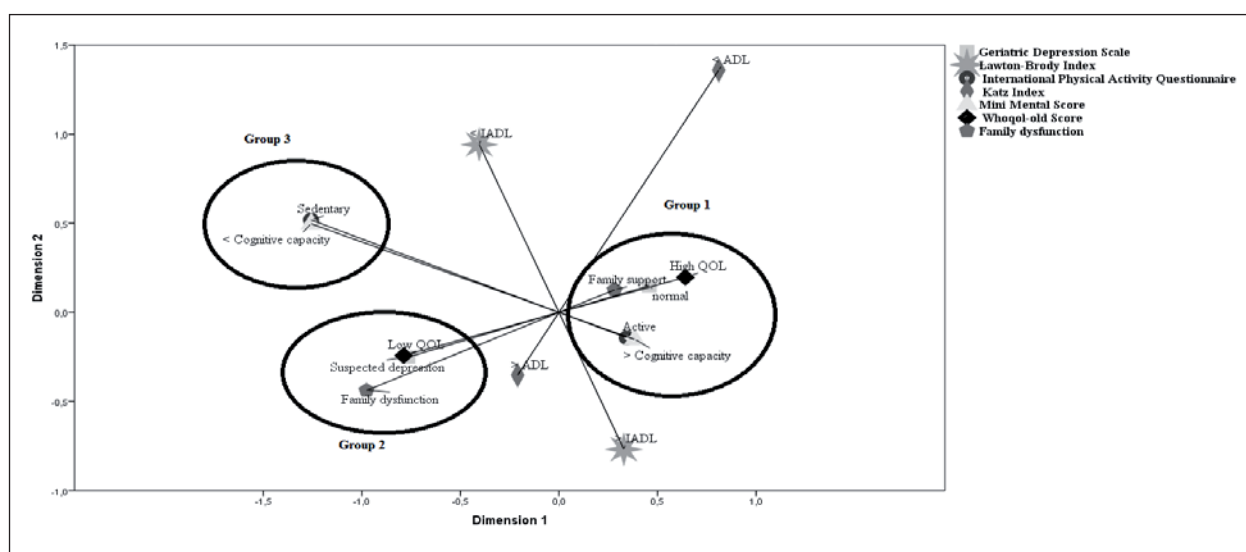
The majority of the elderly practiced more physical activity (78.5%), presented better quality of life (55.1%) and performed well in the tests of memory, depression and activity of daily living (Table 2).

**Table 2 - Scores of quality of life and screening tests used in the elderly of the Family Health Strategy. Minas Gerais, 2012 (n=107)**

Variable	n	%
Total score Whoqol Old		
High quality of life	59	55.1
Low quality of life	48	44.9
International Physical Activity Questionnaire Score		
Active	84	78.5
Sedentary	23	21.5
Mini Mental Score		
$> 22$	82	76.6

≤21	25	23.4
Geriatric Depression Score		
Normal	67	62.6
Suspected depression	40	37.4
Katz Index		
Independent	83	77.6
Dependent	24	22.4
Lawton-Brody Index		
Independent	85	79.4
Dependent	22	20.6
Family Apgar		
Good family function	59	55.1
Family dysfunction	48	44.9

The results of the PCAs are shown in Figure 1, which shows the graphical representation of the categories of variables, in the plane, with two dimensions. Three groups with distinct profiles for quality of life and physical activity in the elderly of the sample were formed. The graphic shows that the groups were formed by the spatial proximity between the variables of interest. The first group (Group 1) brought together the most active elderly with better scores for quality of life, without suspicion of depression, greater cognitive ability and with family support. Group 2 was formed by the elderly with poorer quality of life scores, suspected depression and with family dysfunction. Sedentary elderly and those with lower cognitive ability were allocated in the last group, called Group 3.



**Figure 1 - Principle Components Analysis for two dimensions between quality of life, physical activity and associated factors. Family Health Strategy. Minas Gerais, 2012 (n=107)**

## DISCUSSION

A majority of the elderly were female. This result can indicate three important aspects of active aging: higher longevity for women,<sup>22</sup> their higher adherence in physical activity programs,<sup>23</sup> and higher ability for behavior and lifestyle change than in men.<sup>24</sup>

As in other studies,<sup>24-25</sup> the elderly who practiced physical activity were generally younger than 75 years of age. One possible explanation for these results is the higher risk of dependency and diminished functionality and autonomy after 75 years of age.

In the last population census, the rate of Brazilian illiteracy for elderly was 26.2%,<sup>26</sup> a value similar to the current study (19.6%). Differences in the level of literacy reflect social inequalities at the beginning of the century, which blocked school access for the poor and for women.<sup>27</sup> Moreover, education and retirement are two aspects of the profile of these elderly that require attention, suggesting that greater access to information and greater availability of time are associated with higher levels of physical activity among the elderly.

It was observed that the majority received up to one minimum wage (64.5%), with this value being higher than that found in another study

(55%).<sup>24</sup> This result can be related to the fact that the gains of the elderly come only after retirement. In the present study, it was found that the majority of the elderly were married (41.1%) or widowed (34.6%). This phenomena can be explained by the progressive increase in life expectancy of the population and by the characteristic of long and lasting marital relationships in this age range.<sup>28</sup>

Using the scale of 0-100 to evaluate the quality of life scores of the WHOQOL, we found the mean (60.5±11.1) and the median (60.4) of the total score of the WHOQOL-Old had similar values. These results are similar to other studies.<sup>24,29</sup>

In this study, 78.5% of the elderly were considered active, namely, they performed activities of at least a moderate level, beyond those practiced in the FHS. For this reason, the results should be interpreted with caution, since this was a sample of elderly involved in a Fitness Group for Elderly Persons.

Physical activity changes the lives of the elderly for the better, not only the physical-motor conditions and overall health,<sup>27,30</sup> but primarily, because it causes further strengthening of family ties, friendship, leisure and social relationships, promoting changes in daily life, such as searching for improvement of quality of life.<sup>31</sup>

The component analysis did not provide measures of association between the variables, but their results allowed us to define groups that explained different profiles within the sample. When the model is reliable, there is symmetry in the distribution of variables in relationship to the outcome. This was seen in this study, since high and low quality of life, as well as sedentary lifestyle and active, were on opposite sides of the graphic (Figure 1).

Recent studies have investigated the association between quality of life and physical activity.<sup>32</sup> The results of this study show a direct and positive relationship of interdependence between these two variables, that is, better quality of life leads to a greater practice of physical activity in the elderly, and vice versa. Performing physical activity prepares the elderly individual for an autonomous and independent life.<sup>33</sup>

The most active elderly in this study (Group 1) had a higher score on the WHOQOL-Old (better quality of life), absence of depression, family support and higher cognitive capacity. These results are in accord with epidemiological studies that affirm that active aging has a direct relationship with cognitive and functional capacity and the emotional state of the elderly.<sup>29,31-34</sup>

The relationship between physical activity and depression can be studied in two distinct aspects. In the first place, it is important to consider that depression can reduce the practice of physical activity, as the elderly may tend to become isolated and not leave the house. On the other hand, physical activity can be an adjunct in the prevention and treatment of depression in the elderly.<sup>35</sup>

In relationship to the family functioning of the elderly, there are many gaps in the literature, suggesting the investment in future studies. The predominance of good family functioning among the elderly encountered in this study (55.6%) corroborated other Brazilian studies in this population.<sup>36-37</sup> Family support is essential in the life of the elderly, especially for those who need care to perform their daily activities. However, such care for the dependent elderly needs to be qualified so that it can contribute to improving their health and quality of life.<sup>38</sup>

This study, differently from others,<sup>25,39</sup> did not observe a relationship between functionality, quality of life and physical activity. Possibly, these results are related to the fact that 77.6% and 79.4% of the elderly were completely independent for ADLs and IADLs, respectively.

The group of elderly with poor quality of life (Group 2) had suspected depression and family dysfunction. These results could indicate an influence of the emotional state of the elderly on his family relationship, and vice versa. One descriptive study conducted in Venezuela with 140 elderly observed a high rate of family dysfunction in the depressed elderly (61%), of which 30% were classified with severe dysfunction.<sup>40</sup>

No direct relationship was observed between sedentary lifestyle and poor quality of life. This result, in particular, suggests two inquiries: can a sedentary lifestyle be related to other factors that do not necessarily lead to poorer quality of life, or, even, is a more sedentary lifestyle associated with lower cognitive ability and less independence for IADL (Group 3), as shown in Figure 1.

One possible explanation for this result is the size and composition of the sample, which makes it impossible to generalize the findings to the general population or to make more robust inferences. All of the elderly participated in a fitness group, thus, it was not possible to compare quality of life among participants and non-participants in physical activity. That said, the majority of the group were women that, generally, attended more health services and cared for themselves better than men.

Another limitation of this study concerned the complexity of the active aging process, together with the cross-sectional design of the study that made identification of the temporal precedence of the factors studied impossible, affecting the evidence of a causal relationship.

With regard to the interpretation of the results, the information derived from the tests used and the quality of life questionnaire were self-reported and, therefore, may have been influenced by functions of cognition, culture, language used, and education. One strategy recommended in the literature, and used in this study, was to perform data collection at the homes of elderly in order to mitigate this interference. In contrast, subjective measures provide valuable information about the quality of life for the elderly.

Epidemiological population-based studies acquire importance in this scenario as they allow the identification of determinants and etiologic factors of aging.<sup>41</sup> This experience is necessary, since the elderly are subject to numerous variations, and in the future it may contribute to deeper understanding of the process of aging of the population.

## FINAL CONSIDERATIONS

It was concluded that there was a positive relationship of interdependence between high quality of life for seniors and regular practice of physical activity, which seemed to be more influenced by the absence of depression, greater cognitive ability and good family functioning.

The results of this study indicate the need to direct attention to the health care of the elderly in the FHS for higher levels of physical activity, as a way to minimize the impact of disabilities and morbidities on quality of life and to promote greater independence and autonomy, fundamental factors for the health of this population.

The relationships of the elderly with their family and with the community should be considered as potential resources for the success of these interventions and the implementation of public policies for this population.

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