

The Role of Community Physical Therapy in the Functional Independence and Quality of Life of Elderly Women

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Abstract

Introduction: The elderly population demands special and specific measures focused on the promotion of health and quality of life. The Family Health Support Centers seek to increase the operational scope of the Family Health Strategy through the inclusion of different professionals, including physiotherapists, who develop their activities with the elderly by focusing on educational measures and preventive and health promoting corporal practices.

Objectives: Evaluate the importance of Physical Therapy in the Family Health Support Centers for the functional independence and quality of life of elderly women.

Methodology: Descriptive research with a case control epidemiological base performed in the Family Health Support Centers of the city of Parnaíba/PI. 88 individuals participated in this study, all of them female, of which 46 participated in the Physical Therapy activities (G1) and 42 didn't (G2). Quality of life was measured according to the Health-Related Quality of Life (HRQOL) profile for independent elderly, and functionality was analyzed according to the Katz scale. The project was approved by the Ethics Committee for Research of the *Universidade Federal do Piauí* under the number: 1.087.464. The statistical analyses were performed using the unpaired Student's t test in samples of normal distribution, and using the Mann-Whitney test in samples of non-normal distribution. The normality of groups

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was analyzed using the Shapiro-Wilk test. The considered level of significance was $p \leq 0,05$.

Results: According to the Katz index, a better performance could be observed for G1, where 91.3% ($n=42$) obtained a score of 6, which means a greater level of independence, when compared to G2, where 61.9% ($n=26$) obtained a score of 6 and 38.1% ($n=16$) scores between 5 and 3, indicating moderate dependency. According to the HRQOL questionnaire, G1 had a better perception of health.

Conclusion: The elderly who participated in the activities proposed by the physical therapists of the Family Health Support Centers had better functionality and health perception indicators.

Keywords

Elderly; Primary Health Care;
Quality of Life.

Introduction

The Family Health Strategy (Estratégia Saúde da Família, ESF, Portuguese acronym) is a primary care model implemented in the 90s through the deployment of multidisciplinary teams at the Basic Health Units (BHU). It works mainly by promoting and maintaining health [1, 2]. In order to increase the scope and coverage of basic care, the Department of Health Care created the Family Health Support Centers (*Núcleos de Apoio à Saúde da Família*, NASF, Portuguese acronym) through Decree no. 154/GM of January 24, 2008. The involvement in the NASF represents an important approximation of physiotherapy and basic care from the perspective of one health policy [3]. Among the diverse Physical Therapy activities in the NASF, those geared toward the elderly public stand out [4].

The elderly population has increased significantly all over the world. This has attracted the attention of the academic community to develop research and public policies focused on healthy aging. According to the World Health Organization (WHO), an elderly person is defined as any individuals equal to or over the age of 60 in developing countries, or 65 in developed countries [5]. This population demands

special and specific measures focused on promoting health and quality of life at this stage of life [6]. In this context, the practice of physical activity is an important way to improve the quality of life, and it's essential for the maintenance of functional capacity in the elderly [7].

Studies have shown that the practice of exercise, especially when done in community, is beneficial to the elderly, even for those with a more advanced age [4, 8]. The physical therapists who are part of the NASF team develop their activities with the elderly by emphasizing educational measures and preventive and health promoting corporal practices, carrying out work in groups, lectures, home visits and referrals [9]. Despite the broad scope of operation of physical therapy in the NASF, research on its effects in the elderly population are still scarce, particularly with regard to their functional independence and quality of life.

As such, this study sought to analyze the effect of physical therapy in the NASF on the elderly public from the perspective of functional independence and quality of life.

Methodology

This study consisted of a descriptive research with a case-control epidemiological base. The work was carried out from March to May 2015 in the Basic Family Health Units supported by the Family Health Support Centers that counted with the work of physical therapists.

The participants were elderly residents in the neighborhoods covered by the NASF in the city of Parnaíba-PI. One group participated in the activities proposed by the physical therapists (G1) and the other did not participate (G2). The physical activities were performed twice a week with a duration of one hour each. Participants over 60 years of age with the cognitive ability to answer the questionnaires, were included. Elderly with hearing, cognitive and motor problems that prevented the answering of the questionnaires, were excluded.

Quality of life was measured according to the Health-Related Quality of Life (HRQOL) profile for independent elderly. This instrument contains 45 questions divided into 5 domains: health perception, symptoms, physical function, psychological function and social function. The lower the score in each domain, the better the quality of life of the individual. The questionnaire was applied individually by the authors at the location of the activities [10].

Functionality was analyzed according to the Katz scale, an instrument used to assess the functionality of the elderly in bathing, dressing, going to the bathroom, transferring from the bed to the chair and from the chair to the bed, and feeding activities, in addition to assessing the degree of continence of the elderly individual [11]. Its score is divided into three categories: independent, moderate dependency or very dependent.

The research was performed in accordance with Resolution no. 466/12 of the National Health Council. The project was approved by the Ethics Committee for Research of the Federal University of Piauí under the number: 1.087.464. All participants of the study signed a Free and Informed Consent Form.

The analyses were performed using the unpaired Student's t test in samples of normal distribution, and using the Mann-Whitney test in samples of non-normal distribution. The normality of groups was analyzed using the Shapiro-Wilk test. The considered level of significance was $p \leq 0.05$. The tabulation of results was done in the Microsoft Office Excel 2010 software, and the normality calculations were performed on the Bioestat software. Data comparison and chart development were done on the GraphPad Prism 5 software.

Results

88 individuals participated in this study, all of them female, 46 in G1 and 42 in G2. The mean age of group G1 was 68.7 ± 6.9 years, and of group G2 69.5 ± 5.6 years, with no significant difference, indicating a homogeneity between the groups (Student's t test; $p = 0.598$).

According to the Katz index, a favorable statistical difference could be observed for G1, where 91.3% ($n=42$) obtained a score of 6, which means a greater level of independence, when compared to G2, where 61.9% ($n=26$) obtained a score of 6 and 38.1% ($n=16$) scores between 5 and 3, indicating a moderate dependency in some activities, as can be seen in **Table 1**.

Table 1. Katz index data in percentage comparing the group that participated in the activities proposed by physical therapists (G1) and the group that did not participate (G2).

	G1 (n - %)	G2 (n - %)
Independent*	42 (91.3%)	26 (61.9%)
Moderate Dependency	4 (8.7%)	16 (38.1%)
Very Dependent	0 (0%)	0 (0%)
Total	46 (100%)	42 (100%)

Table 2. Average HRQOL questionnaire data comparing the group that participated in the collective physical therapy activities and the one that didn't participate. Parnaíba-PI, 2015.

Domain (HRQOL)	G1	G2	P-value
Health Perception	6.0±4.0	8.0±4.0	0.0410*
Symptoms	30.5±5.5	27.5±6.5	0.4446
Physical function	13.0±2.0	13.0±4.0	0.8178
Psychological function	16.0±0.0	14.0±3.5	0.8113

The proportion Z-test revealed a significant difference ($p=0.0006$) between the groups for the number of participants with the status "independent". The Mann-Witney test revealed a significant difference ($p=0.0245$) between the Katz index of the assessed groups.

When analyzing the Health-Related Quality of Life (HRQOL) profile of independent elderly, there was a significant difference only in the domain health perception ($p=0,0410$), where G1 obtained lower scores when compared with G2 (**Table 2**). This result means that the elderly who participated in the NASF activities had a better perception of this domain. There were no statistically significant differences in the comparison between assessed groups of the measurements of the physical, psychological and social function domains.

Discussion

This study analyzed the impact of physical therapy in primary health care on a group of elderly women assisted through the family health strategy of the Brazilian public health system. The observed variables were functional independence and quality of life. It was observed that both aspects were influenced by the participation of the elderly in physical therapy interventions.

Functional independence is related to the ability to perform the activities of daily living autonomously

[12]. It promotes an improved integration of the elderly in the community through the strengthening of social and family ties, friendships and leisure activities, factors that are considered to be determinant in healthy aging. The elderly who maintain functional independence are considered healthy, even if they have some chronic disease. As such, this adds a new metric to the concept of health for this public [13]. On the other hand, a bad health perception of the elderly individual is directly linked to a greater degree of dependence [14]

The data presented in Table 1 reveals that 91.3% of G1, the elderly who practice physical activity, were independent individuals, while in G2 this percentage was 61.9%, as evaluated by the Katz index. Ribeiro and colleagues (2015) argued that the practice of physical activity is a determinant factor in the functional independence of the elderly [13]. Neto and Castro (2012) obtained similar results, where the elderly practicing physical activity showed better functional independence [15]. Our results therefore corroborate the evidence that the practice of physical activity is determinant in the prevention of the functional decline that is commonly associated to the elderly [16].

One of the most frequent conditions in aging, one that directly affects functional independence, is the loss of muscle mass, or sarcopenia. This condition affects between 4% and 27% of the elderly population, varying according to country and gender [17, 18]. Sarcopenia is responsible for the loss of muscular strength and immobility, which may aggravate the health condition of the elderly by affecting their functional independence. The main way to prevent this condition is the practice of physical activity [18].

It is worth mentioning that total or partial functional dependency will adversely affect the quality of life of the elderly [12, 16]. This study used the HRQOL instrument to investigate this variable. According to the gathered data, there was no significant difference between the assessed groups in most HRQOL domains. When the health perception domain was

evaluated, however, the active elderly group in the NASF (G1) obtained a better performance in relation to the inactive elderly group (G2). The general conditions (socio-economical, family) of the elderly under study were quite similar, which may be the explanation for the parity found in the other metrics of the HRQOL questionnaire.

Campos and collaborators [7] evaluated the quality of life of elderly people practicing physical activity in the context of the family health strategy. They observed that there is an interdependence between quality of life and the practice of regular physical activity. This data corroborates the study of Halaweh and collaborators [19], who demonstrated a strong association between the practice of physical activity and quality of life in the elderly, in addition to a significantly higher prevalence of diseases in the group that practiced little physical activity.

Conceptually, health perception is a subjective judgment about the own state of health. It reflects individual differences and is made up of general health perception measures [20]. The fact that the inactive elderly at the NASF do not recognize their symptoms as indicative of a disease and therefore don't seek medical care, should be taken into account.

Junior and Trinidad [21] assessed the quality of life of the elderly using the Nottingham Health Profile (NHP), an evaluation instrument developed in Great Britain. They found that quality of life got worse as age progressed. This result was present in all domains of the PSN, with the exception of "social interaction". The results found by the authors confirm the importance of physical activity in this population group, since no kind of activity with the elderly was used in the study. In the present study, which used the HRQOL questionnaire, the elderly who performed activities organized by the professionals of the NASF had a significant improvement of their health perception.

Silva and collaborators [22] also used the PSN in their study, in which the elderly who practiced regu-

lar physical exercise obtained a better quality of life. This is due to the regularity of this group, because all practiced physical activities more than 30 minutes per day, while the other group didn't practice regular exercises and filled their days only with daily activities (daily life activities).

Community physical therapy activities are very positive for the elderly. It stimulates them to live with more independence and improves social relationships through the conviviality with people of the same age with similar tastes and preferences, improving their social well-being, in addition to the physical benefits resulting from the physical activity [6].

Conclusion

Based on the findings of this study, the conclusion can be drawn that the elderly who practiced the activities proposed and guided by physical therapists of the NASF had better functionality and health perception indicators when compared to the group that did not perform any type of supervised activity. Physical activity can be considered as a tool that is easy to apply and of low cost to improve the quality of life, health perception and the functionality of the population under study.

Contribution of the Authors

RACS, SRDAR, JCRMN, AJSM, YMD and RHGT participated in data acquisition. All authors participated in the review of the manuscript. MCF and SKSFC guided the design and organization of the study. MSC, SKSFC and BAKS wrote the manuscript. All authors discussed the results and worked on the discussion.

Conflicts of Interest

All authors declare there were no conflicts of interest.

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