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What is This?
Effects of a physical activity governmental health programme on the quality of life of elderly people

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Abstract
Background: The population ageing occurring worldwide resulted in multiple researches on sedentary ageing and quality of life. Purpose: To verify the effects of a physical activity programme on the quality of life (QOL) of elderly individuals served by a governmental health programme. Design: Descriptive inquiry research. Methods: Randomly distributing 70 elderly individuals in a control group (n=35; mean±SD 69.80±8.05 years) and an experimental group (n=35; 68.66±5.93 years) plus QOL evaluation via WHOQOL-Old. Results: The experimental group showed significant best results on the post-test by repeated-measures ANOVA on sensorial functioning (Δ%=0.022%, p=0.0001), social participation (Δ%=0.012%, p=0.013), perceptions of death and dying (Δ%=0.04%, p=0.009), intimacy (Δ%=0.059%, p=0.05), and total score (Δ%=0.001, p=0.000). Conclusions: Sensorial functioning, social participation, perceptions of death and dying, and intimacy play an important role in the positive relationship between physical activity and QOL.

Key Words: Ageing, health promotion, older people, physical therapy, quality of life

Introduction
The elderly population, defined by the World Health Organization (WHO) as over 60 years of age [1], is increasing faster worldwide [2] and has led to an improvement in ageing research [3]. Healthy ageing is becoming the object of worldwide public policy [4]. In Brazil, the Family Health Program (FHP) has arisen as a public policy focused on the low-income population and provides essential guidelines and attention on promoting healthy living, prevention, rehabilitation, and support.

With a worldwide perspective, the WHO proposed its global recommendations on physical activity for health [5], as physical activity is understood as a determinant factor of successfully healthy ageing [6]. The importance of physical activity has been confirmed by the description of sedentary living as a risk factor, opposed to an active lifestyle, and by physical activity being a protection factor against chronic and degenerative diseases that are major concerns for public health agencies [7,8]. Worldwide, nations are developing and implementing healthy ageing policies aligned with the WHO recommendations, promoting quality of life [1].

Quality of life (QOL), a common aim for human being [9] is a multidimensional parameter defined as the distance between individual hopes and expectations and the effective life experience [1]. It does more than rating physical health status, as emotional and social health are also very important factors [10]. The WHO elaborated the WHOQOL-Old [11,12], a specific QOL instrument for the elderly [9], by translating their own preferences and peculiarities [13]. The purpose of this study was to verify the effect of physical activity on the QOL of elderly individuals served by a governmental health programme.
Materials and methods

This sample of elderly male and female volunteers (n=70) were all residents and served by a governmental health programme during 2007. The inclusion criteria were being both genders, over 60 years of age, and suitable for physical activities according to the programme’s multidisciplinary team expert opinion. They were randomly (by a simple drawing method) divided in two groups: the experimental group (EG) composed of 26 women and nine men (n=35; mean±SD 68.66±5.93 years) and the control group (CG) composed of 20 women and 12 men (n=35; 69.80±8.05 years). The EG was submitted to a programme of physical activity for 12 weeks and the CG agreed not to perform any physical activity during this same period and were sedentary.

The EG was enrolled in a project focusing on exercise and QOL, guided by a professional physical educador and composed by a variety of physical activities. Performed twice a week for 12 weeks, each session lasting 50 minutes, it included walking, hydrogymnastics, strengthening, and stretching, respecting specific guidelines as moderate intensity (between 60 and 70% of the maximum cardiac frequency) and slow-to-moderate velocity. The control group, on the other hand, was advised not to engage in any physical activity within those 12 weeks.

The utilised protocol for QOL observation in this research was the WHOQOL-Old questionnaire developed by the WHO, as a specific transcultural instrument for the QOL of elderly individuals [13]. Properly validated by WHO, the WHOQOL-Old questionnaire contains six facets of four items each, summing up to 20 points: (i) sensorial functioning; (ii) autonomy; (iii) past, present, and future activities; (iv) social participation; (v) perceptions of death and dying; and (vi) intimacy; and a total score (TS). It is individually applied and it asks individuals to bear in mind their own values, hopes, pleasures, and concerns, based on last 2 weeks [13]. The questionnaire was applied before the exercise programme and after the 12-week training.

The statistical analysis used descriptive statistics (mean and standard deviation) and inferential analysis with the Shapiro−Wilks test checking the sample homogeneity. The repeated-measures ANOVA 2×2 test was used to analyse inter- and intragroup comparisons and the Tuckey post-hoc test checked for multiple comparisons. Statistical significance was set at p<0.05 and the statistical software used was Statistical Package for Social Sciences version 18.0.

All participants signed the agreement terms as the experimental procedures were performed in attendance to the principles laid down in the Declaration of Helsinki. There was no funding source for this research and the project was approved by the University Research Ethics Committee (protocol 68/2007).

Results

The descriptive and inferential analysis outcomes of the control and experimental groups are presented in Table I. For the control group, it can be observed that there was no difference between the pre- and the post-test. The Shapiro−Wilks test, reflecting a normal distribution, presented p<0.05 in most facets (except facets 2 and 6) and in TS. For the EG, it can be observed that every facet and the TS presented

<table>
<thead>
<tr>
<th>Facet</th>
<th>Time of QOL</th>
<th>Control group</th>
<th>Experimental group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean±SD</td>
<td>p (Shapiro−Wilks)</td>
<td>Mean±SD</td>
</tr>
<tr>
<td>1</td>
<td>Pre</td>
<td>16.97±1.19</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>16.77±1.07</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Pre</td>
<td>16.87±1.80</td>
<td>0.072</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>16.80±1.56</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Pre</td>
<td>16.33±1.54</td>
<td>0.011</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>16.30±1.34</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Pre</td>
<td>16.07±2.02</td>
<td>0.02</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>15.83±1.76</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Pre</td>
<td>15.67±1.75</td>
<td>0.018</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>15.53±1.59</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Pre</td>
<td>15.30±2.28</td>
<td>0.192</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>13.47±2.27</td>
<td></td>
</tr>
<tr>
<td>TS</td>
<td>Pre</td>
<td>15.87±0.88</td>
<td>0.094</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>15.78±0.84</td>
<td></td>
</tr>
</tbody>
</table>

Facets: 1, sensorial functioning; 2, autonomy; 3, past, present, and future activities; 4, social participation; 5, perceptions of death and dying; 6, intimacy; TS, total score.
improvement with the programme (p<0.05) in most facets (again except facets 2 and 6) and in TS.

As both groups presented normal distribution, the Tuckey post-hoc test was utilised to check the sample’s absolute Δ and the inter- and intragroup multiple comparison. These results are given in Figure 1. The intragroup analysis showed that the EG had significant (p<0.05) improvement at the post-test in facets 1 (p=0.000), 4 (p=0.013), 5 (p=0.009), and TS (p=0.000), respectively in sensorial functioning, social participation, perceptions of death and dying, and, as a consequence, in the TS. Besides that, the EG in the pre-test presented a lower value in facet 5 (p=0.005) and TS (p=0.024). Nevertheless at the post-test, the EG showed significant improvement (p<0.05) compared with the CG in facets 1 (p=0.000), 6 (p=0.05), and TS (p=0.004) in sensorial functioning and intimacy, respectively, and consequently in the TS. Furthermore it is observed that facet 4 (social participation) of the CG and the EG were quite similar in the pre-test phase, and that, after the physical activity programme, the EG had a significant (p<0.05) improvement in this area.

The EG showed significant best results on the post-test by repeated-measures ANOVA on sensorial functioning (Δ%=0.022%, p=0.0001), social participation (Δ%=0.012%, p=0.013), perceptions of death and dying (Δ%=0.04%, p=0.009), intimacy (Δ%=0.059%, p=0.05), and total score (Δ%=0.001, p=0.000).

**Discussion**

Listening to the elderly and developing strategies to understand how they perceive ageing translates the science of the ageing process into practice [14]. By determining the QOL, it is possible to help the elderly transcend their ageing dilemmas [9]. It is usually considered that ageing brings with it insecurity and utmost dependency. Any unwillingness of family members and government to take care of their health needs has emerged as the main reason for their complaints [15], also confirmed by the general perception that those who remain productive are an asset to the family [16]. These results showing an improvement of sensorial functioning, social participation, perceptions of death and dying, and intimacy, and thus an improvement in QOL TS, alongside physical activity agree with the finding that, to the elderly, QOL is related to emotional and social health as well as to physical health. Sensorial functioning is highlighted in this study as the facet with the highest significant increase – a substantial contribution to a rising TS. The improvement in sensorial functioning in the EG confirms the literature, which already recognises the impact of sensorial functioning losses in older adults’ QOL [9], therefore suggesting that improving sensorial functioning improves QOL. Social participation contributes to better health and has been regarded as an important component of QOL [3,17,18], but despite its importance, it decreases as age advances [19], a finding that the present research confirms. It has been recognised that both the occupational identity, and the inadequacy feeling associated with it, lead to a lower social interaction, thus reducing the satisfaction level [2]. The literature points to the importance of considering perception of personal factors, social
participation, and environmental factors in older adults’ QOL [20,21]. Concerning the relevance of intimacy, the literature confirms the present findings in elderly QOL [9]. Increasing the consciousness of personal relationships within the perceived importance in life enable the elderly to feel recognised as integral human beings [22].

Over the last few years, there has been a growing consensus that QOL includes objective dimensions, e.g. housing and economy, as well as subjective dimensions [17]. Both psychological and physical dimensions explain life satisfaction among the elderly [23]. Hence, a broad approach is essential for the purpose of encompassing a human being as a whole [24].

Considering that physical inactivity is nowadays defined as the fourth mortality risk factor at the global level [5], the ACSM affirms that the elderly should avoid inactivity, because some physical activity is better than no activity at all, and that those who participate in any kind of physical activity gain some benefit in health [25] and QOL [7]. Both rural and urban individuals show a decline in strength with increasing age [26]. Disability is an important public health problem among the geriatric population [27]. Therefore, in order to facilitate successful ageing, older adults should be encouraged to be physically active [28].

Considering that elderly people should be as physically active as their abilities and conditions allow [5] and that physical activity improves QOL [29], it is vital that programmes for the elderly include physical activity [1], as social participation is paramount in the quest to achieve better QOL [30].

Conclusion

This study concludes that an improvement in physical activity leads to an improvement in the quality of life as a whole. This is mostly due to an improvement on sensorial functioning, social participation, perceptions of death and dying, and intimacy. As a proper evaluation of QOL provides better understanding on ageing and a proper physical activity programme improves substantially their QOL, social politics and multiprofessional programmes on gerontology should take this in consideration.

Limitation

One observed limitation on this research is that the sample was not divided into age groups as the division into CG and EG was random. It should be remembered that the ageing process may bring linear losses. It is suggested that new studies be done with a larger intervention period to verify the significant differences in the analysed variables.

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Conflict of interest

None declared.

References

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