68 - EVOLUTION OF THE FUNCTIONAL AUTONOMY OF THE OLD PILATES PRACTICER

SILVIA MARA CORDEIRO MOREIRA,
YURI WARSZAWSKI,
JACQUES DE ARAÚJO NETTO,
HOMERO DA SILVA NAHUM JUNIOR
Universidade Estácio de Sá, campus João Uchôa, Rio de Janeiro, RJ, Brasil
silviamara.ef@gmail.com

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INTRODUCTION

The Pilates Method originally was created by Joseph Pilates in the year 1918 for therapeutic purposes and currently being practiced for purposes of physical fitness. Among the benefits would be the increase of strength, greater muscular control, improvement of the respiratory capacity, increase flexibility, lengthen, tone and define the musculature and help in the correction of posture, for example (CAMARÃO, 2004). For Joseph Pilates he preached the benefits of "perfect" balance between body and psychological. He gathered his experience in gymnastics and martial arts with a thorough analytical approach to body mechanics, posture, and correct breathing (MILLER, 2010).

Hall (1998) concluded that the Pilates Method would be effective in promoting static, postural balance and providing better control of coordination, agility, and balance, physical qualities that would deteriorate in old age. He also suggested that the dynamic balance was increased, however he found difficulties in gauging and determining this balance in any training protocol. Decidedly, the concern for health and well-being was already a daily reality, both in the individual and collective view, including leisure. Society would be evolving and contemporary times would bring about new modalities of physical exercise. In Brazil there would already be several establishments (sports centers, SPA, sports centers) that would offer Pilates as an exercise (ABP, 2016).

For Reyneke (2009), an appropriate physical would be the first requirement for happiness, which would differentiate the Pilates from other forms of exercise would be the mode of execution. In contrast to the often mechanical repetitions of aerobic and bodybuilding classes, Pilates exercises would require concentration and attention to detail, from the exact position of the feet to the arching of the shoulder.

The principle "mind, brain and body" was a concept used by Joseph Pilates, i.e. the association between physical and psychological well-being was the principle that led to the Pilates method used today, contemporary Pilates aims at integrating body and through exercise (HAAS, 2006).

Pilates aims to create healthy habits that will last for a lifetime. With their practice, people learn to maintain a correct posture in various everyday situations, such as sitting, walking and squatting (MARIN, 2009). In the study by Curi (2009), when applied in the elderly population, Pilates improves strength and mobility, which are usually altered due to the presence of degenerative diseases such as arthritis. Pilates also helps maintain blood pressure, as well as influencing bone calcification. These benefits were found by Kopitzke (2007), who through the application of the method, coupled with the use of appropriate medication, managed to change the diagnosis of a patient from osteoporosis to reduction of bone mineral density after one year of treatment. Based on the above, this study aimed to compare the evolution of functional autonomy in Pilates practitioners.

MATERIALS AND METHODS

The Evaluation occurred with 20 individuals, two of whom were male, ranging in age from 60 to 80 years and all beginners in Pilates. The intervention was given with frequency of two weekly sessions lasting 1: 00h at Universidade Estácio de Sá – campus João Uchôa.

Data collection focused on the functional autonomy protocol of the Latin American Development Group for Maturity (DANTAS and VALE, 2004), which was applied in two moments, the first before the beginning of the intervention and the second, three months , in order to compare the evolution provided. The established period was aimed at ensuring the occurrence of neuromuscular adaptations. The statistical treatment characterized the group at both moments through the descriptive analysis (COSTA NETO, 2007). Then, the Kolmogorov-Smirnov test was applied for normality check and the comparison was performed through the t-Student and Wilcoxon tests.

DISCUSSION OF RESULTS

The age variable (Table 1) presented low variability, Coefficient of Variation <20.00%, then the characterization was 67.32 ± 4.71 years, so possibly the physiological and mechanical conditioners should not have influenced the results, therefore the respective performances were due to the intervention made available. In this, all variables had high dispersion, coefficient of variation> 20.00%, then the characterization was established by the respective estimates of Median and Coefficient of Variation. Such results were expected, given that the public did not have the culture of physical activity practice, least of all the Pilates Method. The exception was established in LCLC, perhaps because of the cognitive complexity, which would be confirmed in the high time at the conclusion of the test.

Table 1: Descriptive Results of Quantitative Variables, s - Pre

Statistic	Age, anos	C10m	LPS	LPDV	LCLC	IG
Average	67,32	7,11	11,21	3,58	39,11	27,63
Standard Deviation	4,71	1,85	3,36	1,98	5,83	5,78
Median	67,00	7,00	11,00	3,00	39,00	26,67
Coefficient of Variation	7,00	26,08	29,97	55,35	14,91	20,93

The age variable (Table 2) presented low variability, coefficient of variation <20.00%, then the characterization was 67.37 ± 4.84 years, thus a situation similar to that of Table 1. All other variables had a high dispersion, Coefficient of Variation> 20.00%, then the characterization was established by the respective estimates of Median and Coefficient of Variation. In addition, all the variabilities increased, except LPDV, which converged to the expectation, since the regular intervention would tend to standardize the practitioners. Then, such occurrence may have occurred as a consequence of the pre-test not having been

applied by the same person, in addition to the fact that in the post-test the execution was emphasized as fast as possible, so some of the tests such as c10m and LPDV obtained different results in the pre-test.

Table 2: Descriptive Results of Quantitative Variables, s - Post

Statistic	Age, anos	C10m	LPS	LPDV	LCLC	IG
Average	67,37	4,47	8,16	2,89	31,68	20,91
Standard Deviation	4,84	1,81	2,63	1,59	5,58	5,31
Median	67,00	4,00	8,00	2,00	30,00	19,33
Coefficient of Variation	7,19	40,38	32,24	55,10	17,61	25,40

The inferential results showed that all the variables approached the Normal Distribution, except for LPDV at the instant Post, therefore this was compared by the Wilcoxon test, and while for the others the Student's t-test was used. In all cases, there was a statistically significant difference, that is, the intervention appeared to be efficient.

Table 3: Inferential results (p) values, $\alpha = 0,05$

Variable	Pre	Post	t-Student	Wilcoxo
C10m	>0,20	>0,20	0,00	
LPS	>0,20	>0,20	0,00	
LPDV	<0,15	<0,05		0,03
LCLC	>0,20	>0,20	0,00	
IG	>0,20	>0,20	0,00	

Cunha (2009) aimed to verify the effects of a walking program on the functional autonomy levels of elderly women participating in the Family Health Program, Juazeiro do Norte (CE). The experimental group (SG, n = 58, age = 67.00 ± 6.00 years) and control group (CG, n = 40, age = 70.00 ± 6.00 years) were all evaluated physically active. Functional autonomy was assessed by the same protocol as the current study. The intervention was performed three times a week, with intensity between 55.00% and 75.00% of maximum heart rate. In the intergroup analysis there was a significant improvement in the SG, in all tests and in the GI (= -4.13; p-value = 0.0001); however, GC achieved a significant worsening in all tests. It was imperative to consider that in GE the results were given as Pre: C10m = 8.07 ± 1.67s; LPS = 14.05 ± 2.82s; LCLC = 67.93 ± 11.22s; LPDV = 5.04 ± 1.52s; IG = 39.30 ± 5.42s. In the post test the imperative was to consider that in GE the results were given: C10m = 8.94 ± 2.23s; LPS = 15.96 ± 5.97s; LCLC = 73.21 ± 19.35s; LPDV = 6.27 ± 2.99s; IG = 43.39 ± 10.34s. Therefore, there was divergence, since the post intervention results of the current study showed improvements. This may have occurred because of the volume of training, prescription, implementation and training control. Also, because GE was composed of 58 people, who would make the set of impacts dispersed over a given period of time, so improvements would require more time weights so that training conditions could have the necessary effects.

Caporicci and Neto (2011) aimed to evaluate the activities of daily living and the quality of life of the active and inactive elderly; Twenty-four elderly people participated in the study, of which 12 were physical activity practitioners (PAF) and 12 non-practitioners (NPAF). Used as instruments, a socio-demographic questionnaire, the SF-36 for the measurement of the quality of life and the tests proposed by GDLAM. For data analysis we used the statistical program SPSS 15.00. The means of the results obtained by the socio-demographic questionnaire for the groups were: age NPAF = 70.00 ± 6.60 and PAF = 69.50 ± 6.70, which is the statistical analysis did not show significant difference of age between the groups (F (1.22) = .034, p value = .05). After the analysis, it was concluded that the elderly women practicing physical activities, although they showed a tendency of superiority, presented time of execution in all tests related to functional capacity, similar to that of non-physical activity elderly women, all of them classified as "weak" , according to the GDLAM Protocol. PAF: c 10m = 7.91 ± 1.35s; LPS = 12.51 ± 3.52s; LCLC = 46.89 ± 8.08s; LPDV = 5.45 ± 2.54s and NPAF: c10m = 9.40 ± 3.55s; LPS = 19.10 ± 13.69s; LCLC = 55.35 ± 17.28s; LPDV = 11.02 ± 9.42s. There was convergence in results.

Silveira and Sousa (2009) aimed to analyze and compare muscular strength, muscular endurance functional autonomy among elderly people who practice resistance training in the open air gym (AAL), who use devices that only allow the use of the body as an overload, and in the Respiratory Exercise and Health Laboratory (LERES), which use progressive overload. Muscle strength of the upper limbs was assessed through the dynamometer and for strength and resistance of the lower limbs the sit and stand test was performed in 30 seconds. Functional autonomy was assessed through the Evaluation Protocol of the Latin American Development Group for Maturity (GDLAM). The research consisted of 28 subjects, 14 in the LERES Group and 14 in the AAL Group. The LERES Group consisted of 11 women (78.57%) and three men (21.43%) and the AAL Group 12 women (85.71%) and two men (14.29%). It can be observed that the AAL Group is older than the LERES Group, with no statistical difference. Regarding strength levels, the LERES Group presents slightly higher levels of strength than those of LAA in both upper and lower muscle groups. The present result allowed to observe higher levels of upper limb strength, as well as greater muscular strength and lower limb resistance in the elderly of the GLERES group, who practice progressive overload. The GDLAM variables obtained the results of the following groups: LERES: c10m = 5.39 ± 0.78s; LPS = 8.22 ± 2.19s; LCLC = 16.10 ± 1.73s; LPDV = 3.47 ± 0.89s and AAL: c10m = 5.88 ± 0.62s; LPS = 8.87 ± 0.89s; LCLC = 18.21 ± 1.72s; LPDV = 3.09 ± 0.74s. There was possibly divergence due to the use of progressive charge against the use of constant charge.

Rodrigues et al. (2010) aimed to verify the effects of the Pilates method on the functional autonomy of elderly women. For that, 52 volunteers were selected, through five tests (10 m walk) by the same protocol of the current study. (The tests were: to get up from the sitting position, to get up from the chair and to move around the house, to rise from the position of ventral decubitus and to wear a shirt); (GP, n = 27, Age = 66.90 ± 5.30 years) and control group (CG, n = 25, Age 65.20 ± 3.90 years). The GP underwent a series of ten Pilates exercises, for eight weeks, twice a week. Both groups were reevaluated after this period. The comparison between the groups of the results in the tests, before and after the intervention was: the GP presented scores significantly measures 10 m walk (value - p = 0.02), rise from the seated position (value - p = 0, 02), wear and take off the T-shirt (value - p = 0.04), get up from the position of the ventral decubitus (p value = 0.00) and get up and move around the house 0.00).

Regarding the GDLAM indices, GP presented significant reduction after intervention (value - p <0.05), unlike CG. The groups presented the following results BEFORE: GP: C10m = 7.60 ± 1.68s; LPS = 10.47 ± 2.22s; LPDV = 4.20 ± 0.93s; LCLC = 34.99 ± 4.99s and GC: C10m = 7.56 ± 1.12s; LPS = 10.7 ± 1.95s; LPDV = 4.44 ± 0.96s; LCLC = 36.65 ± 4.70s and AFTER: GP: C10m = 6.89 ± 1.60s; LPS = 9.23 ± 2.27s; LPDV = 3.11 ± 0.80s; LCLC = 31.07 ± 6.01s and GC: C10m = 7.59 ± 1.21s; LPS = 10.58 ± 2.19s; LPDV = 4.59 ± 0.80s; LCLC = 36.69 ± 4.89s. Thus, there was convergence in the results in line with the evolution of performance.

Silva et al. (2009) aimed at verifying the functional autonomy and quality of life of the elderly enrolled in a basic health unit in the city of Santarém. A sample of 21 elderly, 12 men (± 72.67 years) and nine women (± 69.45 years) were used. For functional autonomy, the GDLAM protocol was used, obtaining: C10m = 6.83 ± 0.78s; LPS = 10.96 ± 1.89s; LCLC = 51.81 ± 6.07s; LPDV = 5.69 ± 4.25s. Then, there was convergence of results, especially with the pre-intervention moment of the current study.

Crispim et al. (2016) aimed to analyze the functional autonomy of the elderly practicing the Pilates method. This is a descriptive research with a quantitative approach. A sample of 50 elderly people of both sexes, divided in two groups, Pilates practitioners (GPP), and the control group (CG), formed by sedentary elderly people, were used. The protocol for evaluating the functional autonomy of GDLAM and the questionnaire on Instrumental Activities of Daily Living (AIVD's) of Lawton was used as instrument for data collection. The results show that the classification of the GDLAM Index shows that the majority of the elderly in the GPP group were very good (64.00%), whereas the GC test performance was decreasing, most of them elderly were classified as Regular (42.00%). The results of the GDLAM protocol tests before and after the intervention of the GPP and GC groups, respectively, were: GPP: C10m = 5.50s; LPS = 1.00s; LPDV = 1.00s; LCLC = 11.00s and GC: C10m = 15.00s; LPS = 3.00s; LPDV = 2.50s; LCLC = 13.00s. Ratifying the previous observations.

Ribeiro et al. (2010) aimed at analyzing the elderly over 60 years of age who had some impairment and depended on medication with medical supervision, besides showing independence in the performance of daily life activities. They used the Latin American Maturity Development Group (GDLAM) to assess functional autonomy. In the analysis of the before and after results respectively were: Pre: C10m = 8.41 ± 2.45s; LPS = 14.88 ± 4.32s; LPDV = 7.44 ± 2.83s; LCLC = 12.56 ± 3.35s and Post: C10m = 8.06 ± 2.38s; LPS = 13.10 ± 4.10s; LPDV = 7.30 ± 2.83s; LCLC = 11.66 ± 3.29s. The unsatisfactory results indicated that people who remain with low levels of physical activity during the life should suffer effects of the aging with greater impact, however, those that remain physically active would tend to prolong their functional autonomy. Therefore, there was convergence in the results regarding improvement but those of the current study were more intense.

CONCLUSION AND RECOMMENDATIONS

Aiming to verify the evolution of functional autonomy in Pilates practitioners, we evaluated 20 individuals, two of whom were male, ranging in age from 60 to 80 years and all beginners in the method. The main results were C10m = 4.47 ± 1.81s; LPS = 8.16 ± 2.63s; LPDV = 2.89 ± 1.59s; LCLC = 31.68 ± 5.58s. Therefore, it was concluded that there was an indication of the improvement of the functional autonomy of the evaluated individuals.

Future studies recommend that the tests before and after the intervention be applied integrally according to G-DLAM protocol. In the same way in the intervention, which must be applied using the same protocol in all classes, regarding the volume, intensity and types of exercises? We should point out that it would be of great relevance to double the number of individuals evaluated so that there is a more significant sampling for a statistical treatment. However, it is recommended that the intervention be of twelve months with quarterly evaluations and a training program that verifies the evolution and seeks a gradual increase in the intensity of the exercises applied. In addition to that could insert other evaluation protocols in the content of the proposed study, such as quality of life questionnaires, BMI, flexibility, among others.

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Endereço:
Telefone: 21998278161
E-mail: silviamara.ef@gmail.com

EVOLUTION OF THE FUNCTIONAL AUTONOMY OF THE OLD PILATES PRACTICER

Aiming to verify the evolution of functional autonomy in Pilates practitioners, we evaluated 20 individuals, two of whom were male, ranging in age from 60 to 80 years and all beginners in the method. The data collection was done by the application of GDLAM protocol, which was applied in two instants, separated by 12 weeks. Data were submitted to descriptive analysis, estimating location and dispersion measurements. The main results were at the pre-intervention time C10m = 7.00s ± 26.08%; LPS = 11.00 ± 29.97%; LPDV = 3.00 s ± 55.35%; LCLC = 39.11 ± 5.83s, and at the post-intervention time C10m = 4.00s ± 40.38%; LPS = 8.00 ± 32.24%; LPDV = 2.00 s ± 55.10%; LCLC = 31.68 ± 5.58s. Therefore, it was concluded that there was an indication of the improvement of the functional autonomy of the evaluated individuals.

Key-words: Independence. Exercise. Physical activity.

ÉVOLUTION DE L'AUTONOMIE FONCTIONNELLE DU PRATICIEN ANCIEN PILATES

Visant à vérifier l'évolution de l'autonomie fonctionnelle chez les praticiens de Pilates, nous avons évalué 20 individus, dont deux étaient des hommes, âgés de 60 à 80 ans et tous les débutants dans la méthode. La collecte des données a été faite par l'application du protocole GDLAM, qui a été appliqué dans deux instants, séparés par 12 semaines. Les données ont été soumises à une analyse descriptive, estimant les mesures de localisation et de dispersion. Les principaux résultats étaient au temps de pré-intervention C10m = 7,00 ± 26,08%; LPS = 11,00 ± 29,97%; LPDV = 3,00 s ± 55,35%; LCLC = 39,11 ± 5,83 s et, après intervention, C10m = 4,00 ± 40,38%; LPS = 8,00 ± 32,24%; LPDV = 2,00 s ± 55,10%; LCLC = 31,68 ± 5,58s. Par conséquent, il a été conclu qu'il y avait une indication de l'amélioration de l'autonomie fonctionnelle des individus évalués.

Mots-clés: Indépendance. Exercice. Activité physique

EVOLUCIÓN DE LA AUTONOMÍA FUNCIONAL DEL ANCIANO PRACTICANTE DE PILATES

Con el objetivo de verificar la evolución de la autonomía funcional para los practicantes de Pilates, se evaluaron 20 individuos, dos de los cuales dos eran hombres, con edades entre 60-80 años y todos eran principiantes en el método. La recogida de datos se llevó a cabo mediante la aplicación del protocolo GDLAM, que se aplicó en dos instantes, separados por 12 semanas. Los datos se sometieron a análisis descriptivo, en la cual se ha dado la estimación de las medidas de localización y dispersión. Los principales resultados antes de la intervención fueron: C10m = 7,00s ± 26,08%; LPS = 11,00s ± 29,97%; LPDV = 3,00s ± 55,35%; LCLC = 39,11 ± 5,83s, e no momento después de la intervención C10m = 4,00s ± 40,38%; LPS = 8,00s ± 32,24%; LPDV = 2,00s ± 55,10%; LCLC = 31,68 ± 5,58s. Por lo tanto, se concluyó que había indicio de la mejora de la autonomía funcional de los individuos evaluados.

Palabras clave: Independencia. Ejercicio. Actividad física.

EVOLUÇÃO DA AUTONOMIA FUNCIONAL DO IDOSO PRATICANTE DE PILATES

Objetivando verificar a evolução da autonomia funcional em praticantes de Pilates, avaliados foram 20 indivíduos, dos quais dois eram masculinos, faixa etária de 60 a 80 anos e todos iniciantes no método. A coleta de dados se deu pela aplicação do protocolo GDLAM, o qual foi aplicado em dois instantes, separados por 12 semanas. Os dados foram submetidos à análise descritiva, estimando medidas de localização e dispersão. Os principais resultados foram no momento pré-intervenção C10m = 7,00s ± 26,08%; LPS = 11,00s ± 29,97%; LPDV = 3,00s ± 55,35%; LCLC = 39,11 ± 5,83s, e no momento pós-intervenção C10m = 4,00s ± 40,38%; LPS = 8,00s ± 32,24%; LPDV = 2,00s ± 55,10%; LCLC = 31,68 ± 5,58s. Então, se concluiu que houve indicio da melhoria da autonomia funcional dos indivíduos avaliados.

Palavras-chaves: Independência. Exercício. Atividade Física.