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Adhesion of older women to a home exercise program post ambulatory training

Adesão de idosas a um programa de exercícios domiciliares pós-treinamento ambulatorial

Adhesión de mujeres mayores a un programa de ejercicios domicilarios post-entrenamiento ambulatorio

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ABSTRACT | Practice of therapeutic exercises for older adults aims at better functional performance. It is an everyday practice on physiotherapy, the prescription of home exercises; although its effectiveness depends on adhesion, which is usually very low. The aim of the study was to evaluate older women´s adhesion to and retention in a home program and to identify the factors associated with this practice. This study is exploratory and observational, n=96 older women, (71.3 years old ±5.16) subjected to a program of home exercises. Clinical and functional measures were applied with an adhesion questionnaire to identify motivational factors and barriers. Retention rate was 86% and adhesion was 36%, with a minimum frequency of 85%. Regression models applied were not significant and comparative static analysis between groups verified a high occurrence of negative factors. Correlation absence between worse functional and physical performance with low adhesion highlights such outcome is complex, has multi factors and should also be explored regarding social, emotional and cultural aspects.

Keywords | Exercise Therapy; Aged; Patient Compliance; Exercises.

RESUMO | A prática de exercícios terapêuticos por idosos visa melhorar o desempenho funcional. A prescrição de exercícios domiciliares é uma prática rotineira na fisioterapia, mas sua efetividade depende da adesão dos idosos, que frequentemente é muito baixa. Avaliaram-se a adesão e retenção de idosas a um programa domiciliar pós-atendimento ambulatorial e identificaram-se fatores associados a essa prática. Este estudo é observacional exploratório, composto por 96 idosas, (71,3±5,16 anos) submetidas a um programa de exercícios em casa. Foram avaliadas medidas clínicas, funcionais e um questionário de adesão para identificar os fatores motivadores e as barreiras. A taxa de retenção foi de 86% e a de adesão foi de 36%, com o mínimo de 85% de frequência. Os modelos de regressão aplicados não foram significativos, e nas análises estatísticas comparativas entre grupos foi verificada alta incidência de fatores negativos. A ausência de correlação entre pior desempenho funcional e físico com a baixa adesão evidencia que esse desfecho é complexo e multifatorial, e deve ser explorado também sob aspectos sociais, emocionais e culturais.

Descritores | Terapia por Exercício; Idoso; Cooperação do Paciente; Exercícios.

RESUMEN | La práctica de ejercicios terapéuticos para mayores pretende mejorar el desempeño funcional. La prescripción de ejercicios domiciliarios es una práctica rutinera en la fisioterapia, pero su eficacia depende de la adhesión de los mayores, que a menudo es baja. El objetivo del estudio fue evaluar la adhesión y retención de mujeres mayores a un programa domiciliario e identificar los factores asociados a esta práctica. Este estudio es observacional exploratorio, formado por 96 mujeres mayores (71,3±5,16 años) sometidas a un programa de ejercicios en casa. Se evaluaron las medidas clínicas,

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funcionales y un cuestionario de adhesión para identificar los factores motivadores y las barreras. La tasa de retención fue del 86% y la de adhesión fue del del 36%, con un mínimo del 85% de frecuencia. Los modelos de regresión aplicados no fueron significativos y en los análisis estadísticos comparativos entre grupos se comprobó alta incidencia de factores negativos. La ausencia de correlación entre peor desempeño funcional y físico con la baja adhesión demuestra que este resultado es complejo y multifactorial, y que debe ser explorado también en los aspectos sociales, emocionales y culturales.

Palabras clave | Terapia por Ejercicio; Anciano; Cooperación del Paciente; Ejercicios.

INTRODUCTION

In parallel with demographic transition in Brazil, in which the number of people with more than 65 years old has increased continually, a transition related to the change in the morbid mortality profile with infectious contagious diseases being replaced by chronical degenerative diseases also occurs[1,2]. Such reality points out for a growing complexity of attention regarding older adults' needs due to health impacts, as well as the independence and autonomy levels of this population[2].

The benefits of exercises for older adults are well established in the literature: they reduce fragility syndrome, increase walking speed, and improve performance on Daily Life Activities (DLA), proportioning independence and life quality[3-5].

After discharge from ambulatory treatment, the prescription of home exercises is a frequent practice on physiotherapy[5,6]. Studies demonstrated that patients who adopt home programs confirm to have less pain and more muscular strength due to the benefits of regular physical exercises[7,8]. A muscular training has reversibility as a physiologic principle, which means the muscular gains obtained in what regards strength and muscular resistance are reversed with the interruption of exercises practice. In this way, it is essential to follow the guidelines prescribed by the physical therapist to ensure efficacy[7,9,10].

The concept of adhesion is controversial on the literature[3,8,11]. The most used concept defines adhesion to an exercise program as the ratio between performed sessions and the number of offered sessions[12]. According to the literature, this ratio is usually very low. Evidences suggest 50% of the population who initiate an exercise program interrupt it in up to six months[12,13].

The minimum adhesion preconized is between 80% and 85% for intervention results to be satisfactory[7]. Another concept that must be differentiate is retention, which consists on maintain the bond of an individual to an exercise program, either in an experimental or clinical character[14]. However, the participant may have been retained in a program, i.e., the participant was present from beginning to end, but misses a lot of sessions, and for this reason adhesion is not satisfactory[8]. Adhesion and retention may be explained by different variables[14,15].

The current profile of Brazilian older adults indicates prevalence of women, a phenomenon defined by geriatric and gerontology specialists as feminization in old age[11]. There is more prevalence of incapability and functional dependence in older adults, especially women[6].

Active aging must be the goal care in long term throughout life, and the presence of some functional incapability justifies the investigation, care and rehabilitation[16,17]. Further research are required to identify efficacy of guidelines to home exercises through usage of verbal orientations or booklets guidelines, since the activity is a constant service of physical therapists[10]. Few intervention studies analyzed adhesion as a primary outcome, and there is no standard golden instrument to evaluate adhesion of older adults to exercises[17].

The hypothesis of the study are: a) adhesion and retention rates of a home program are lower than recommended; b) older women with worse functional performance and with more related comorbidity have less adhesion to an exercise program without direct supervision.

The goals of this study were: a) to verify adhesion and retention rates of older women to home exercises programs; b) to identify factors associated to older women adhesion to a home exercise program performed with indirect supervision of physical therapists; c) to investigate what motives and barriers have more prevalence for older women who adhered or not to the exercise program.

METHODOLOGY

This study was approved by the Research Ethic Committee (REC) of the Minas Gerais Federal

University, under decree no. ETIC 38/2010, with the approval of an addendum.

Details of the original project can be found on the Brazilian Clinical Trials Registry – REBEC RBR9v9cwf. This study was a continuation of a previous clinical trial. The training protocol of the home program was exactly the same of the outpatient study registered on REBEC.

Sample

Convenience sample constituted by community older women aged 65 years or older. They all signed a free and informed consent form.

The older women were recruited from a clinical trial, post ambulatory training, in which 30 sessions of muscular strengthening exercises were performed during 10 weeks, with 50 minutes of duration each.

Older women who presented cognitive alterations detectible by the Mini Mental State Examination, who went through orthopedic surgeries on lower limbs, and/or had history of fractures in the last six months, presented neurological diseases, and with clinical and sensorial conditions that made impossible to perform exercises were excluded from the study[18,19].

The calculation of the size of the sample was performed from the model regression formula: 10 (K+1), in which K represents the number of the model's explanatory variables[20]. Eight clinical and functional variables, eight motives, and eight barriers were selected, according to theoretic reference, and therefore 10 (8+1) = 90 older women should participate on the study. Three logistic regression models were performed to identify factors associated to adhesion to home program.

Measure Instruments

To characterize the sample, social and demographic data, and clinical conditions, as fall occurrences, pain and comorbidities were obtained through a structured questionnaire built and applied by researchers, previous to the home intervention. The questionnaire was idealized for this study, and can be found in annex. Functional tests were performed at the same moment.

This study used the Mini Mental State Examination score as the explanatory variable for the regression model to evaluate the adhesion association with cognitive capacity of the volunteers. The adapted version for the Brazilian population used as reference has as cutting points: 13 points for illiterate, 18 for average school level and 26 points for individuals with high school level[18,19].

The Geriatric Depression Scale (GDS)[21-23] was used to evaluate the presence of depression symptoms.

Functional Tests

To evaluate functional capacity, three functional tests were selected: walking speed evaluation, Timed Up and Go, and to sit and get up from a chair. The three tests are easily carried out on physiotherapy practice, are quick to apply, and are valid and trustworthy for older adults[17].

To assess regular walking speed, the relation distance/time (meters/second) was used, within a space of 10 meters[25]. The participants were instructed to walk in a self-selected speed. The walking speed was registered only on the central six meters of the running track, laterally identified by tape marks to avoid acceleration and deceleration bias[25].

The Timed Up and Go Test was used to evaluate mobility. The tests consists in evaluate the performance and time spent by the individual to get up from a standard armless chair with a 45 cm seat in a sitting position, walk for three meters, rotate, return to the chair and sit again[26,27].

The functional performance evaluation of sitting and getting up is used as an indirect measure of proximal muscle strength of lower limbs, associated to functional decline and also to incapacity. A standard 45 cm chair was used, having the floor as height reference[28].

Adhesion Questionnaire

An adhesion questionnaire validated and adapted for the Brazilian older adult population is not available yet. Therefore, based on the literature, and on Brazil's cultural, economic, and social contexts, we developed an adhesion questionnaire with three principles: reason for absence on sessions; motivating factors; and barriers. To elaborate this instrument, a pilot study was performed, and it was applied to 10 older women who were participating of the physical activity programs[8]. We adjusted and adapted it as required to reach the final version of the questionnaire, used in this study. Intra and inter examiner reliability were made through kappa coefficient, which demonstrated excellent concordance – Intra (Kappa=0.846) and Inter examiners (Kappa=0.822).

Procedure

The clinical trial that preceded the study was performed with a group of older women in a program of muscular strengthening. The group of muscular strengthening was constituted by exercises of lower limbs, on concentric and eccentric contractions, three series of 8 repetitions of each exercise. Details of this clinical trial can been found on a previous published study[29].

Once the muscular strengthening program is concluded, an indirect follow-up for older women with exercises performed at home to maintain functional capacity was proposed. A meeting with the volunteers was held, in which goals of the new stage of the research was presented, and those who had agreed to participate have been trained on the home program. Home exercises performed by the volunteers were the same strengthening exercises that were been carried out during ambulatory care, but without the load to avoid compensations and triggering of painful conditions. The weight of the limb itself against gravity already represents a stimulation to the muscle, and it may be able to keep a suitable functional level[7].

The participants received a booklet with illustrative photos, explanations and training of the exercises in a detailed way, divided by weeks. It should be filled out with dates and hours the exercises were performed at home[30]. This booklet with the guidelines to the exercises can be found in annex. Those activities were monitored fortnightly by phone calls made by the researchers. The home program also had a 10 weeks term, with three weekly sessions of approximately 50 minutes and indirect supervision. During these ten weeks, each participant received five phone calls. After this period, they were reevaluated and the adhesion questionnaire wash applied. In this moment, an adhesion diary with all registers was made by participants, and were then collected for analysis.

In this study, we considered as adherents the older women who had 85% or higher frequency of performing the exercise program[14]. In the thirty proposed sessions, five absences were allowed. As the program was performed at home, the non-performance of the exercises was considered as absence. Therefore, older women who had not finished the program or the ones who missed six or more exercise sessions during the ten weeks of intervention were considered excluded from the research.

Statistical Analysis

The sample description was performed through measures of central tendency (average and standard deviation) and frequencies for social-economical and clinical variables. For data analysis distribution, we used the Kolmogorov-Smirnov test.

Three models of multiple logistic regression aiming to identify the contribution of selected variables to explain the adhesion of older women to the exercise program were developed. The explanatory variables that filled out the model were determined by theoretical reference. The statistical analysis was blinded, performed without knowledge of the questions involved and without any involvement with the volunteers.

The first model had as a goal to identify the contribution of clinical and functional variables – presence of pain, recurring fall history, comorbidities number, cognitive capacity, depression symptoms and functional capacity evaluated through three tests: walking speed, timed up and go, and the test of sitting and getting up from the chair[18-21,25-28].

The other two models verified if there was an association of motivators (8 items) and barriers (8 items) of the adhesion questionnaire with adhesion of older women to different therapeutic exercise programs. Those items were evaluated through the adhesion questionnaire developed by the researchers. The interpretation of logistic regression was defined by relative risk of occurrence of non-adhesion.

To compare between groups of adherents and non-adherents, we used the independent Test-t or the Man-Whitney U, according to data distribution. To compare variables in attendance the Chi-square test was used. The level of significance accepted was of a 5% α for all the analysis performed.

The analyses were performed by the Statistical Package for the Social Sciences (SPSS) program for Windows (Version 17.0).

RESULTS

The previous clinical trial counted with the participation of 151 older women. After the end of the program, the participants had the option to continue with the exercises in a home program with indirect supervision. From the 151 participants, 113 choose to continue the exercise program, and 95 were

reevaluated after 10 weeks. Eighteen participants were lost. Reasons to refuse to perform the reevaluations were: surgery, travel, family problems or lack of interest in the study. The average age of the home groups was 71.3 years old. Figure 1 is a flowchart of the losses. Table 1 has descriptive characteristics of the sample, and Table 2 presents the clinical and functional tests.

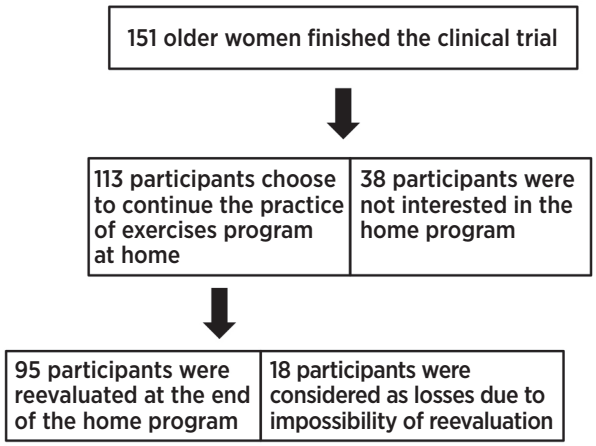

Figure 1. participants flowchart

The retention rate of the program was of 84.07% and adhesion rate was 33.09%, calculated from 113 participants who initiated the home program. Twenty-three more participants took part of the home exercises than was required, based on the sample calculation = 90.

The first regression model, with clinical and functional variables did not present significant statistics (p=0.09). The multiple logistic regression model was also not significant with motivator for exercise practice (p=0.053), neither with the barriers (p=0.053).

The most frequent barrier reported by older women who had adhered to the program was not considering to have good health (68.4%) – *"If I was healthier, I would be more active"*. For those ones considered as losses on the study, the most frequent barrier was pain – *"It is difficult to exercise when I'm in pain"*. However, pain was the most important barrier in both categories, adherent and non-adherent.

Comparing the two groups, the only item that had statistic difference between adherents and non-adherents was the barriers *"I have difficult to perform the exercises"* (p=0.04). However, although non-adherent older women reported more difficult, this does not justify the lack of adhesion on the regression model. Results of this analysis can been found in Table 3.

Regarding the motives, the item that has been less frequent for non-adherent older women was *"Exercise is one of my favorite hobbies"*. Results of this analysis can been found in Table 4.

Table 1. Social-demographic and clinical characteristics from the sample

Variable	Adherents (n=30)		Non-Adherents (n=83)	
	%(n)	Average (+/- DP)	%(n)	Average (+/- DP)
Age (years)		71.36 (5.16)		70.72 (5.18)
Marital Status				
Married	20 (6)		38.6 (32)	
Single	13.3 (4)		13.3 (11)	
Divorcee	13.3 (4)		13.3 (11)	
Widow	53.3 (16)		34.9 (29)	
Weight (kg)		68.20 (9.17)		70.93 (12.89)
Height (m)		1.53 (5.41)		1.54 (5.61)
Have children (yes)	90 (27)		86.7 (72)	
Comorbidities (yes)				
Heart Disease	0 (0)		9.6 (8)	
SAH	70 (21)		72.3 (60)	
CVA	3.3 (1)		1.2 (1)	
Diabetes	13.3 (4)		21.7 (18)	
Arthritis	30 (9)		43.4 (36)	
Pulmonary Disease	6.7 (2)		8.4 (7)	

continues...

Table 1. Continuation

Variable	Adherents (n=30)		Non-Adherents (n=83)	
	%(n)	Average (+/- DP)	%(n)	Average (+/- DP)
Depression	16.7 (5)		18.1 (15)	
Osteoporosis	20 (6)		24.1 (20)	
Urinary Incontinence	30 (9)		16.9 (14)	
Labyrinthitis	16.7 (5)		16.9 (14)	
Vascular Disease	20 (60)		19.3 (16)	

Captions: SAH = Systemic Arterial Hypertension; CVA= Cerebrovascular Accident

Table 2. Explanatory variables

Variable	n		Average		Standard Deviation		Frequency (%)		p
	Adherents	Non-Adherents	Adherents	Non-Adherents	Adherents	Non-Adherents	Adherents	Non-Adherents	
MMSE**	30	83	26.7	25.89	2.42	2.85			0.86
GDS**	30	83	3	4.03	2.95	2.7			0.31
Falls***	30	83					8 (26.7)	30 (36.1)	0.26
No. Comorbidities**	30	83	2.26	2.48	1.43	1.45			0.34
Walking speed*	30	83	5.63	5.19	0.84	1.23			0.13
TUG*	30	83	11.22	11.24	2.45	9			0.18
Sit and get up test*	30	83	14.51	14.68	3.52	2.95			0.81
Pain symptoms***	30	83					22 (73.3)	69 (83.1)	0.23

MMSE: Mini-mental state examination; GDS: Geriatric Depression Scale, TUG: Timed up and Go
*Test-T
**Man Whitney U
***Chi-Square

Table 3. Descriptive Analysis of Barriers

Barriers	Adherents	Non-Adherents	P
I feel in the same way either if I am exercising or not	15.8	5.3	0.09
I am afraid to get hurt exercising	13.2	14	0.58
I don't feel strong enough to exercise	5.3	17.5	0.07
If I was healthier. I would be more active	68.4	59.6	0.26
I do not take interest in exercising	7.9	8.8	0.59
Is difficult to exercise while I am in pain	52.6	70.2	0.07
Is difficult to exercise when I am unhappy	15.8	22.8	0.28
Bad weather jeopardize the performance of exercises	13.2	14	0.58
I feel very tired when I exercise	13.2	22.8	0.18
I am afraid to fall when I exercise	15.8	22.8	0.28
I have difficult to perform all the exercises	7.9	22.8	0.04

*Captions: % of older women that reported the described item was a barrier to perform the proposed exercise

Table 4. Descriptive Analysis of Motives

Motives	Adherents	Non-Adherents	P
To exercise regularly improves my health	100	100	-
I'd rather follow a supervised exercise program	84.2	93	0.15
I'd rather exercise in groups than to exercise at home	89.5	93	0.40
I'd like to continue the exercise program	97.4	94.7	0.47
I feel more in high spirits when I am performing physical activity	100	98.2	0.60
I become fulfilled when I exercise	100	100	-
Exercises improve my concentration	94.7	96.5	0.53

continues...

Table 4. Continuation

Motives	Adherents	Non-Adherents	P
Exercises help me spiritually	97.4	89.5	0.15
I exercise even if I am not willing to	81.6	68.4	0.12
Exercise is one of my favorite hobbies	78.9	66.7	0.14
I feel less pain when I exercise on a regular basis	84.2	91.2	0.23
I become less stressed when I exercise	84.2	94.7	0.09

*Captions: % of older women that reported the described item was a motive to perform the proposed exercise

DISCUSSION

The first hypothesis was confirmed through the study– adhesion and retention rates to a home program are lower than recommended. When compared to described data on the literature, the adhesion rate found in this study was lower than in programs with supervision, this low uptake might be due to lack of social interactions and variability on suggested programs. A supervised exercise program allow older adults more technical support, both in professional terms and equipment, more safety and socialization opportunities[30].

The importance of socialization is reflected in many daily cultural activities performed by each individual, such as family meetings and religious cults, and it may explain why adhesion to exercises at home was very low[23]. In a similar study, a group that performed the intervention with direct supervision had proximally four times more adhesion to fulfill the study than the group that only accomplished the exercises on their own[14].

Therapeutic attention provided to older adults is important to engage in the program. If older adults receive social supports and feel cared, they feel motivated to keep vigilant regarding the exercises[30]. There is evidence in the literature that older women with higher adhesion are the most inclined to get involved in other health promotion programs, and this is directly linked to behavior. Thus, adhesion may be a marker for a personality trait linked to motivation and self-efficiency[24,30].

The second hypothesis was not confirmed, in other words, there were no correlation between adhesion and the clinical and functional conditions evaluated. We verified through functional tests and clinical evaluation that the participants presented functional level and health condition good enough to be able to continue exercising through a home program. However, statistical analyses demonstrated that good health conditions do not favor adhesion to the home program.

A positive aspect of this study is that older women previously participated of an ambulatory exercise program with direct supervision, and during the permanency they received stimulation and proper guidance to continue. The exercises were taught correctly, minimizing fear of incorrect performance, which could increase pain intensity, and they also received guidance about the harms of a sedentary life[31].

Strategies to promote adhesion and to contribute for rehabilitation process should be encouraged by clinical physical therapists[23]. Simpler guidelines, motivational encouragements of exercises benefits, offer of social support and positive reinforcement, providing reminders as booklets and phone call are some of those strategies. The assistance of professionals with experience may be onerous, especially in long terms programs, for this reason we have the need to search for alternative care[10,23,30].

Randomized clinical trials that aim at demonstrating interventions effectiveness usually are performed in extremely controlled environment conditions, which does not match clinical reality. Adhesion to what is being proposed is a mandatory condition to any outcome intervention to be positive, and for that investigations are required to allow the extrapolation of results for clinical practice and incentive patients to adhere. Qualitative studies may clarify the comprehension on the theme, and they must be encouraged.

Study's limitation

The study's duration was short, and it may have contributed for higher adhesion rates than reality, although it was indeed low. Long term exercises are more difficult to maintain.

On the other hand, one factor that could have contributed in a negative way is the development of a program constituted of generic exercises, without a specific and individualized goal. According to some of the authors, preventive exercises are less stimulating than healing ones, which have as goal to relieve some health problems[21]. The study's participants were not performing the exercise for rehabilitation of some

lesion; instead, they aimed at maintaining health condition and preventing possible problems.

The instrument we used to evaluate motives and adhesion barriers might not have been sensitive enough to detect factors that explain adhesion, as the chosen clinical and functional variables.

The results of this study may only be extrapolated for older women, considering the sample was exclusively feminine.

CONCLUSION

This study has not presented direct relation of worse health conditions with low adhesion rates. It means that the lack of adhesions to home exercises program does not have a direct impact on having a higher number of associated comorbidities or a worse functional performance. understanding adhesion is a challenge to managers and health professionals and for that, it must be deeply investigated under all health, physical, emotional and social aspects.

To minimize barriers and encourage reasons for steady exercises practices may be a determining factor on health grievances prevention, and for the maintenance of the physical and functional independence for older adults.

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ATTACHMENTS

SOCIO-DEMOGRAPHIC QUESTIONNAIRE

Date:_____/_____/_____
Name:_____;
Address: Street_____No:_____
Neighborhood_____;ZIP Code:_____;City_____
Contact telephone numbers: _____
Age:_____years; Date of birth: _____/_____/_____

What is your marital status?

☐ 1. Married/Living with partner
☐ 2. Single
☐ 3. Divorced, separated
☐ 4. Widower

What is your color/race?:

☐ 1. White
☐ 2. Black
☐ 3. Mulatto/Pardo
☐ 4. Yellow/Asiatic
☐ 5. Indigenous

What was your profession for most of your adult life? _____

Are you able to read and write a simple note? (if the person responded that he/she learned to read and write, but forgot, or is able to sign his/her own name, mark "no")

☐ 1. Yes
☐ 2. No

Until which school year did you attend school?

☐ 1. Never went to school (never got to complete the first grade or course of adult literacy)
☐ 2. Adult literacy course
☐ 3. Elementary school (1st to 4th grade)
☐ 4. Middle school (5th to 8th grade)
☐ 5. High school
☐ 6. Higher Education
☐ 7. Graduate studies, obtaining a Masters degree or PhD

How many years of school did you attend? _____

Do you have kids?

☐ 1. Yes; How many? _____
☐ 2. No

Who do you live with?

- ☐ 1. Alone
- ☐ 2. With spouse or partner
- ☐ 3. With children or stepchildren
- ☐ 4. With grandchildren
- ☐ 5. With great-grandchildren
- ☐ 6. With other relatives
- ☐ 7. With friend(s)
- ☐ 8. Companions, caregivers, maid

PERCEIVED PHYSICAL HEALTH

Last year, a doctor said that you have any of the following health problems?

Heart disease such as angina, myocardial infarction or heart attack?

☐ 1. Yes ☐ 2. No

High blood pressure?

☐ 1. Yes ☐ 2. No

Stroke/ischemia?

☐ 1. Yes ☐ 2. No

Diabetes Mellitus?

☐ 1. Yes ☐ 2. No

Malignant neoplasm/cancer?

☐ 1. Yes ☐ 2. No

Arthritis or rheumatism?

☐ 1. Yes ☐ 2. No

Lung disease (bronchitis or emphysema)?

☐ 1. Yes ☐ 2. No

Depression?

☐ 1. Yes ☐ 2. No

Osteoporosis?

☐ 1. Yes ☐ 2. No

Urinary incontinence?

☐ 1. Yes ☐ 2. No

Parkinson's disease?

☐ 1. Yes ☐ 2. No

Labyrinthitis?

☐ 1. Yes ☐ 2. No

Peripheral vascular disease (circulatory issues)?

☐ 1. Yes ☐ 2. No

USE OF MEDICINES

How many medicines have you used on a regular basis in the last 3 months, prescribed by the doctor or on your own? _____

What are the names of the medication(s) you use? WRITE DOSAGE

_____

_____

_____

Do you smoke?

☐ 1. Never smoked
☐ 2. Smoked and quit
☐ 3. Smoke For how long?_____

Do you consume alcoholic beverages?

☐ 1. Never
☐ 2. Once a month or less
☐ 3. 2-4 times per month
☐ 4. 2-3 times a week
☐ 4 or more times a week

Family income:

☐ 1. 1 minimum wage;
☐ 2. 2 minimum wages;
☐ 3. 3 minimum wages;
☐ 4. 4 minimum wages;
☐ 5. 5 or more wages
☐ 6. Other: _____

Own income:

☐ 1. No;
☐ 2. Yes
☐ 1. Retirement;
☐ 2. Pension;
☐ 3. Retirement and pension;
☐ 4. Other:_____;

Do you currently exercise any remunerated activities?

☐ 1. No; ☐ 2.Yes; Which? _____

Do you have a health plan or insurance?

☐ 1. No ☐ 2. Yes ☐ 3. Did not respond

In the last year, did you consult a doctor?

☐ 1. No
☐ 2. Yes
☐ 1. Clinician ☐ 3. Gynecologist
☐ 2. Ophthalmologist ☐ 4. Other:_____

Did you underwent surgery?

☐ 1. No; ☐ 2. Yes;

If so, what was the reason?

Do you perform physiotherapy or other type of rehabilitation activity (occupational therapy; speech therapy)?

☐ 1. No.
☐ 2. Yes. How many sessions a week?_____

What type of treatment? _____

Have you you ever performed physiotherapy or other rehabilitation treatment?

☐ 1. No; 3. Do not remember;
☐ 2. Yes; When? Reason?_____

PAIN

Do you feel any pain in your body?

☐ 1. No; ☐ 2. Yes;
Place of pain: _____

For how long have you been feeling this pain?

☐ 1. Acute; ☐ 2. Chronicle;

What is the intensity of this pain? (for each area of pain reported)

_____
0 1 2 3 4 5 6 7 8 9 10
(*without pain*) *(maximum pain)*

FALLS

Last year did you suffer some fall/fell?

☐ 1. No;
☐ 2. Yes; How many times?_____

What was the reason of the fall_____

Where did the fall occur?

☐ 1. In your house; ☐ 2. Outside your house

What was the reason of the fall?

☐ 1. Accidental ☐ 2.. Non-accidental

Did you suffer a fracture because of the fall?

☐ 1. No ☐ 2. Yes. Where: _____

Did you have to seek the health service or a doctor because of the fall?

☐ 1. No; ☐ 2. Yes;

After the fall, did you stop doing any daily activity?

☐ 1. No; ☐ 2. Yes;

Which daily activities did you stop doing? _____
_____

SUBJECTIVE WELL-BEING:

How your health is generally:

☐ 1. Poor ☐ 2.. Relatively good ☐ 3. Good

How is your health, compared to other people your age:

☐ 1. Poor ☐ 2.. Relatively good ☐ 3. Good

Overall satisfaction with life

Are you satisfied with your life today?

☐ 1. Little ☐ 2. More or less ☐ 3. Very much

Comparing with other people your age, would you say you are satisfied with your life?

☐ 1. Little ☐ 2. More or less ☐ 3. Very much

ANTHROPOMETRIC MEASUREMENTS

Now we will take some measurements:

Weight	
Height	
Waist Circumference	
Hip Circumference	

GUIDE: ADHESION – Semi-structured Interview

NAME: _____

☐ After home intervention ☐ Completed the home program

Was it a reason for you (1, 2,3)? ANSWER **YES** OR **NO:**

1 and 3 – Skip the exercise session?
2 – Do not do the exercises at home?

	SIM	**NÃO**
Change in your state of health		
If so, what happened? _____		
Have you performed another type of exercise, for example, a more intense walk. Which? _____		
Family problems		
Lack of motivation		
Thought the session was too long		
Thought the exercises were uncomfortable		
Thought the exercises were too difficult		
Did not have the equipment necessary to perform the exercises		
Did not know exactly how to do the exercises		
Lack of available		
Lack of time		
Lack of interest in the exercises		
Did not understand the instructions that were given		
Forgot		
Did not have company to do the exercises		
Depression or sadness		
Lack of proper professional supervision		
Did not want to do them because was in pain.		
If so, where? _____		

I am going to read a few sentences about physical exercises, and you shall answer me if you **AGREE** or **NOT** with the following statements. Answer based on the exercise program that you performed:

MOTIVATORS	YES	NO
Exercising regularly improves my health		
I prefer to follow a supervised exercise program than accomplish them alone		
I prefer group exercises to home exercises		

I would like to continue with the exercise program		
I feel more disposed when I am doing physical activities		
I feel satisfied when I exercise		
Exercises improve my concentration		
Exercises help me spiritually		
I exercise even when I am not in the mood		
Exercise is one of my favorite hobbies		
I feel less pain when I exercise regularly		
I am less stressed when I exercise		
The companions of the group help me deal with my problems		
BARRIERS	**YES**	**NO**
I feel the same way if I exercise or not		
I am afraid to get hurt doing exercises		
I feel like I do not have the strength to do exercises		
If my health was better, I would be more active		
I am not interested in exercises		
It is hard to exercise when I am in pain		
It is hard to exercise when I am sad		
Difficulty of transport gets in the way of doing the exercises		
Bad weather gets in the way of doing the exercises		
I feel very tired when I exercise		
I am afraid of falling when I exercise		
I find it difficult to perform all exercises		
If so, which ones? _____		

EXERCISE PRIMER

HOW SHOULD YOU DO THE EXERCISES?

The exercises should be performed 3 times per week, in the days you prefer.

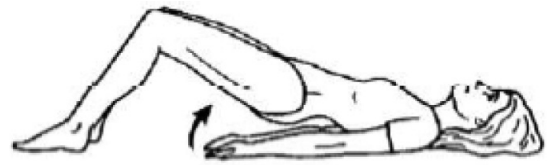
- Follow the instructions correctly!
- Every you exercise, you should write them down in the diary you received.
- It is very important that you register in the diary exactly how you performed the exercises.
- We will contact you every 15 days to check if everything is all right.
- After 10 weeks of exercising, we will contact you to make a new evaluation and change the exercises.

MINI-SQUAT

Using a chair as support or a fixed furniture, place the feet slighlty apart from each other and lined in front. Squat as if you were going to seat in a chair, without throwing the body forward and without bending the knees beyond the feet. Descend slowly eight times and go up returning to the initial position. **Repeat 3 times.**

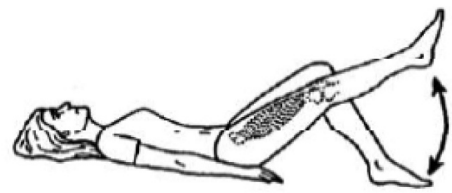
HIP ADDUCTOR

Lie down facing up, bend your legs up and press a small ball or a pillow between your legs. At the same time, raise your butt 8 times. **Repeat 3 times.**



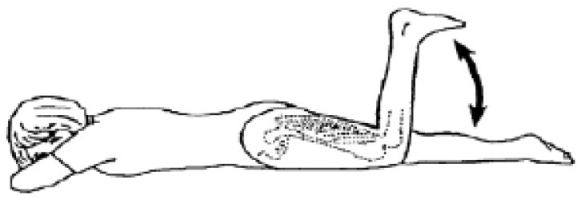
HIP FLEXOR

Lie down facing up and bend one of your legs. Raise the other one without bending the knee 8 times. The leg should go up and down. **Repeat 3 times for each leg.**



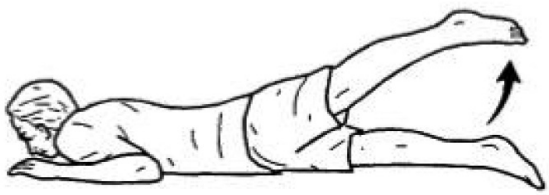
KNEE FLEXOR

Lie down facing down. Bend one knee in the direction of the butt 8 times. Place a roll below the knee being exercised. Keep the other leg stretched. **Repeat 3 times for each leg.**



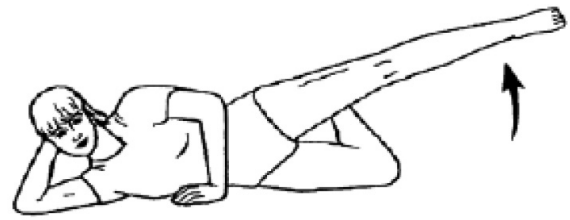
HIP EXTENDER

Lie down facing down. Raise one leg, removing it entirely from the mattress, ang return, 8 times. Be careful when rotating the body – only the leg goes up and down. **Repeat 3 times for each leg.**



HIP ABDUCTOR

Lie down on your side, with the bottom leg bent and the top one stretched. Raise the leg 8 times. **Repeat 3 times for each leg.**



KNEE EXTENSOR

Sit on your bed or in a chair with the feet on the ground. Stretch the knee 8 times. **Repeat 3 times for each leg.**