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ORIGINAL RESEARCH

Factors associated with adherence to physical activity groups in primary health care

Fatores associados à adesão a grupos de atividades físicas na atenção básica

Factores asociados a la adherencia a grupos de actividad física en la atención primaria

Anderson Martins Silva[1], Daniele Sirineu Pereira[2], Maria Geracina de Souza[3], Darlene Graciele Carvalho[4], Isabella Tirado Freire Lopes[5], Silvia Lanziotti Azevedo da Silva[6]

ABSTRACT | This study aimed to verify the users' adherence to physical activity groups conducted by physical therapists at primary health care (PHC) and their related factors. This is a cross-sectional quantitative study. A semi-structured questionnaire and an adapted adherence questionnaire were applied, which investigate general factors, motivators, and obstacles that can affect adherence. The sample was divided into three groups according to adherence: 1-30% of frequency in 6 months as low adherence; 31 to 70% as medium adherence; and above 71% as high adherence. The groups were compared by Kruskal-Wallis and ANOVA tests, and the association was evaluated by multinomial logistic regression. Regarding adherence results, 46.8% of the sample had low, 42.2% medium, and 11% high adherence among the 154 participants, with a mean age of 58.98±11.54 years for general factors, barriers and motivators were different ($p<0.05$) between groups, and lower reporting of general non-adherence factors reduced the chance of medium adherence to groups. The longer participation time in the groups increased the chance of average and high adherence across the sample. We conclude that the knowledge of the factors that positively affect adherence, such as time of participation, willingness, and interest, facilitate the development of strategies by PHC professionals for its maintenance. The results showed that there are factors that affect the adherence of groups in PHC.

Keywords | Motor Activity; Primary Health Care; Family Health Strategy; Physical Therapy.

RESUMO | O objetivo do estudo foi verificar a adesão de usuários a grupos de atividade física realizados por fisioterapeutas na atenção básica (AB) e seus fatores associados. Quanto à metodologia, trata-se de estudo transversal, quantitativo. Foi aplicado um questionário semiestruturado e outro de adesão adaptado, que investiga fatores gerais, motivadores e barreiras que podem influenciar na adesão. A amostra foi subdivida em 3 grupos em relação à adesão: 1-30% de frequência em 6 meses baixa adesão, de 31 – 70% média e acima de 71% alta adesão. Os grupos foram comparados pelos testes de Kruskall-Wallis e análise de variância (Anova) e a associação avaliada por regressão logística multinomial. Nos resultados, em relação à adesão, 46,8% da amostra apresentou baixa, 42,2% média e 11% alta adesão entre os 154 participantes, com média etária de 58,98±11,54 anos para fatores gerais, barreiras e motivadores foram diferentes ($p<0,05$) entre os grupos, e menor relato de fatores gerais de não adesão reduziram a chance de média adesão aos grupos. O maior tempo de participação nos grupos aumentou a chance de média e alta adesão em toda a amostra. Concluímos que o conhecimento dos fatores que influenciam positivamente na adesão, como tempo de participação, disposição e interesse, facilitam o desenvolvimento de estratégias pelos profissionais da AB para sua manutenção. Os resultados mostraram que existem fatores que interferem na adesão aos grupos realizados na AB.

Descritores | Atividade Motora; Atenção Primária à Saúde; Estratégia de Saúde da Família; Fisioterapia.

Study carried out in the Basic Health Units of Família Caensa, Boa Esperança, Pinheirinho/Santa Clara, and Santos Reis, municipality of Alfenas (MG), with approval by the Municipal Health Department.

[1]Universidade Federal de Alfenas (Unifal) – Alfenas (MG), Brazil. E-mail: anderson.fisio@yahoo.com.br. Orcid: 0000-0003-4092-5537
[2]Universidade Federal de Alfenas (Unifal) – Alfenas (MG), Brazil. E-mail: daniele.sirineu@gmail.com. Orcid: 0000-0002-4868-9244
[3]Universidade Federal de Alfenas (Unifal) – Alfenas (MG), Brazil. E-mail: maria.geracina.souza@gmail.com. Orcid: 0000-0003-0890-3848
[4]Universidade Federal de Alfenas (Unifal) – Alfenas (MG), Brazil. E-mail: darlene.graciele@hotmail.com. Orcid: 0000-0001-8033-1421
[5]Universidade Federal de Alfenas (Unifal) – Alfenas (MG), Brazil. E-mail: isabellatiradofreire@gmail.com. Orcid: 0000-0002-1610-1565
[6]Universidade Federal de Alfenas (Unifal) – Alfenas (MG), Brazil. E-mail: silviafisiojf@yahoo.com.br. Orcid: 0000-0002-2323-2029

Corresponding address: Silvia Lanziotti Azevedo da Silva – Avenida Jovino Fernandes Salles, 2600, Alfenas (MG), Brazil – CEP: 37130-000. Email: silviafisiojf@yahoo.com.br –
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RESUMEN | El objetivo de este estudio fue verificar la adherencia de los usuarios a los grupos de actividad física llevada a cabo por fisioterapeutas en la atención primaria (AP) y sus factores asociados. En cuanto al método, se trata de un estudio transversal, cuantitativo. Se aplicó un cuestionario semiestructurado y un cuestionario de adherencia adaptado, que examina os factores generales, los motivadores y las barreras que pueden influir en la adherencia al grupo. La muestra se subdividió en 3 grupos en relación a la adherencia: del 1-30% de frecuencia en 6 meses baja adherencia, entre el 31-70% mediana adherencia y superior al 71% alta adherencia. Los grupos se compararon mediante las pruebas de Kruskal-Wallis y el análisis de varianza (Anova), y la asociación se evaluó mediante la regresión logística multinomial. Los resultados evidenciaron que, en relación a la adherencia, el 46,8% de la muestra tuvo baja adherencia, el 42,2% mediana y el 11% alta entre los 154 participantes con una edad promedio de 58,98±11,54 años para factores generales, las barreras y los motivadores fueron distintos (p<0,05) entre los grupos, y un menor relato de los factores generales de la no adherencia redujo la posibilidad de tener una mediana adherencia a los grupos. El mayor tiempo de participación en los grupos aumentó la posibilidad de tener una adherencia mediana y alta en la muestra. Se concluye que el conocimiento de los factores que influyen positivamente en la adherencia, como el tiempo de participación, la disposición y el interés, facilitan el desarrollo de estrategias por parte de los profesionales de AP para el mantenimiento en el grupo. Los resultados mostraron que existen factores que interfieren en la adherencia a los grupos en la AP.
Palabras clave | Actividad Motora; Atención Primaria de Salud; Estrategia de Salud Familiar; Fisioterapia.

INTRODUCTION

Primary health care (PHC) is a set of health actions aimed at the development of comprehensive care[1]. In pursuit of this objective, operative groups are carried out, such as those that develop physical and educational activities, coordinated by physical therapists[2,3].

Physical inactivity is responsible for about 80% of the main chronic diseases[4,5]. Recognizing the importance of physical activity for health is of utmost importance, as well as identifying the motivating factors for regular practice and seeking strategies that increase adherence[6,7].

The most used concept considers adherence to an exercise program as the ratio between the number of sessions performed and offered[8,9]. The medium adherence rate found in a sample of 27,343 people over 18 years old was 65.2%, and the average sedentary lifestyle rate was 18.8%[10]. Among individuals who start a physical activity program, 50% interrupt it within 6 months[11].

Since PHC offers groups to practice regular physical activity in the Basic Family Health Units (UBSF), it is important to assess their adherence to the offered proposals. This study aimed to verify the adherence of users to these groups, organized by physical therapists, and analyze factors associated with it.

METHODS

This is a quantitative cross-sectional study, approved by the Research Ethics Committee of the Federal University of Alfenas (Ufal), under opinion no. 1,679,885. All participants signed a Free and Informed Consent Form.

The convenience sample consisted of users participating in the groups for physical activity organized by physical therapists in four UBSFs in Alfenas, Minas Gerais. All those who agreed to participate were included, and those who reported not being able or willing to attend the interview were excluded. The interviews took place between June and December 2016, at the UBSFs, at a time scheduled with the participants.

The group exercises lasted one hour, and were divided into stretching, strengthening, and global coordination. Adherence was measured by the percentage of attendance in the groups for six months. The sample was then divided into three groups, considering above 71% of presence as high adherence, 31%-70% as medium adherence, and below 30% as low adherence, determined by tertile, ensuring greater equivalence of the frequency percentage in the activity by group.

The sample was characterized by a semi-structured questionnaire composed of sociodemographic data, use of physical therapy services, clinical variables (number of comorbidities and medications), smoking, alcohol consumption, group participation time, and pain report.

To verify the level of adherence to the groups, a questionnaire adapted from Picorelli et al.[12] was used, which lists general reasons that lead individuals to miss the group (lack of time, disposition, interest), motivators that encourage participation (benefits of exercises), and obstacles that lead to non-participation (dissatisfaction with the exercises). The instrument was applied by a trained examiner.

Statistical analysis

For sample description, mean, standard deviation, and maximum and minimum values were calculated for the continuous variables, and percentages for the categorical ones. The comparison between groups for covariates was performed using the Kruskal-Wallis test for categorical and continuous variables with non-normal distribution, and ANOVA tests for continuous variables with normal distribution. The normality of the data was tested by the Kolmogorov-Smirnov test.

To analyze the adherence questionnaire, in each block (general, motivators, and obstacles), 1 point was assigned to the answers "yes" and 0 for "no," with a final sum in each block. The sums of responses given by users in each block were compared between groups using the Kruskal-Wallis test.

To verify the factors reported by users associated with adherence, a multinomial logistic regression analysis was performed, and covariables with $p<0.20$ in the univariate analysis were inserted in the adjusted model. The category "low adherence" was considered the reference.

The analyses were performed using the statistical software R, version 3.4.1, and a significance level of $p\leqq0.05$ was considered.

RESULTS

The sample consisted of 154 users. 46.8% presented low adherence; 42.2%, medium adherence; and 11%, high adherence to the group. Most (90.9%) were women who knew how to read and write (89.6%) and who do not currently undergo physical therapy (94.8%). Other sociodemographic characteristics are described in Table 1.

Table 1. Sample characterization regarding sociodemographic data and use of health services (n=154)

Variable	n/%	mean±standard-deviation	maximum/minimum value
Sex			
Female	140(90.9)		
Male	14(9.1)		
Age		58.98(±11.5)	91/27
Marital Status			
Lives with partner	91(59.1)		
Does not live with partner	63 (40.9)		
Color/Ethnicity			
White	82(53.2)		
Non-white	72(46.8)		
Reads/Writes			
Yes	138(89.6)		
No	16(10.4)		
Years of schooling		9.60(±15.3)	13/1
Has children			
Yes	133(86.4)		
No	21(13.6)		
number of children		3.17(±1.8)	10/1
Lives alone			
Yes	24(15.6)		
No	130(84.4)		
Paid activity			
Yes	51(33.1)		
No	103(66.9)		
Currently undergoing physical therapy			
Yes	8(5.2)		
No	146(94.8)		
Has already done physical therapy			
Yes	65(42.5)		
No	88(57.5)		

The average group participation time was 32.88 (±37.1) months and, 69.5% of the sample reported pain, which was chronic in 94.4% of the reports. Other clinical characteristics and lifestyle habits are included in Table 2.

The groups, divided by adherence, presented different age and participation time averages (p<0.05) (Table 3).

The comparison of the averages for each block of the adherence questionnaire between the low, medium, and high adherence groups was different for the "general" and "motivators" blocks (p<0.05) (Table 4).

Multinomial logistic regression analysis showed that individuals who reported fewer general reasons for non-adherence were less likely to have medium adherence in the crude (OR=0.82, 95%CI 0.70-0.97) and adjusted (OR=0.75, 95%CI 0.59-0.95) models. Regarding participation time, individuals with more participation time were more likely to have medium (OR=1.02, 95%CI 1.01-1.05) and high (OR=1.04, 95%CI 1.01-1.07) adherence (Table 5).

Table 2. Description of the sample regarding clinical variables, smoking, alcohol consumption, group participation time, and pain report (n=154)

Variable	n/%	mean(±standard-deviation)	maximum/minimum value
Number of comorbidities		2.03(±1.2)	7/0
Number of medicines used		3.64(±2.4)	12/0
Smoking			
Never smoked	96(62.3)		
Smokes/has already smoked	58(37.7)		
Alcohol consumption			
Does not consume	78(50.6)		
Consumes any amount	76(49.4)		
Group participation time*		32.88(±37.1)	1/240
Pain			
Yes	107(69.5)		
No	47(30.5)		
Pain characterization			
Acute	6(5.6)		
Chronic	101(94.4)		
Pain intensity**		6.91(±2.5)	1/10

*Months; **visual analogue scale (VAS).

Table 3. Comparison between sociodemographic and clinical variables, characterization of groups, and use of health services regarding adherence groups (n=154)

Variable	Values			
	Adherence			
	Low(72) (n/%)	Average(65) (n/%)	High(17) (n/%)	P
Sociodemographic variables				
Sex[1] (n/%):				
Female	69(95.8)	56(86.1)	15(88.2)	0.13**
Male	3(4.1)	9(13.8)	2(11.7)	
Age[2] (mean±standard-deviation):	56.9(±10.7)	60.49(±12.1)	62(±11.7)	0.09**
Marital status[1](n/%):				
Lives with partner	47(65.2)	37(56.9)	7(41.1)	0.17**
Does not live with partner	25(34.8)	28(43.1)	10(58.9)	
Color[1] (n/%):				
White	36(50.0)	37(56.9)	9(52.9)	0.72
Non-white	36(50.0)	28(43.1)	8(47.1)	
Reads/writes[1] (n/%):				
Yes	63(87.5)	60(92.3)	15(88.2)	0.64
No	9(12.5)	5(7.7)	2(11.8)	

(continues)

Table 2. Continuation

Variable	Values			
	Adherence			
	Low(72) (n/%)	Average(65) (n/%)	High(17) (n/%)	P
Years of schooling[2] (mean±standard-deviation):	12.90 (±21.5)	7.05 (±4.2)	5.35(±3.9)	0.03*
Has children[1]:				
Yes	63(87.5)	56(86.1)	14(82.3)	0.85
No	9(12.5)	9(13.9)	3(17.7)	
Number of children[2] (mean±standard-deviation):	3.15(±1.5)	3.23(±2.1)	3(±2.1)	0.91
Paid activity[1] (n/%):				
Yes	26(36.1)	22(33.8)	4(23.5)	0.34
No	46(63.9)	42(66.2)	14(76.5)	
Undergoes physical therapy[1] (n/%):				
Yes	3(4.1)	4(6.1)	1(5.8)	0.86
No	69(95.9)	61(93.9)	16(94.2)	
Has already done physical therapy[1](n/%):				
Yes	26(31.1)	31(47.6)	8(47)	0.32
No	46(63.9)	33(52.4)	9(53)	
Number of comorbidities[2] (mean±standard-deviation):	2.02(±1.2)	3.87(±2.5)	2.85(±1.7)	0.36
Number of medicines[2] (mean±standard-deviation):	3.58(±2.3)	3.87(±2.5)	2.86(±1.7)	0.36
Smoking[1] (n/%):				
Smokes/has already smoked	43(59.7)	43(66.1)	10(58.8)	0.70
Does not smoke	29(40.3)	22(33.9)	7(41.2)	
Alcohol consumption[1] (n/%)				
Does not consume	34(47.2)	37(56.9)	7(41.1)	0.37
Consumes any amount	38(58.2)	28(43.1)	10(58.9)	
Pain[1] (n/%):				
Yes	54(75)	43(66.1)	10(58.8)	0.32
No	18(25)	22(33.9)	7(41.2)	
Pain characterization[1] (n/%):				
Acute	2(2.7)	3(4.6)	1(5.8)	0.64
Chronic	52(97.3)	40(95.4)	9(94.2)	
Pain intensity (VAS)[2] (mean±standard-deviation):	6.89(±2.6)	7.23 (±2.4)	5.60(±2)	0.18**
Participation time[2] (mean±standard-deviation):	25.87(±36.3)	37.11(±35.5)	46.35(±42.1)	0.04*

[1] Kruskal-Wallis test; [2] ANOVA; *p<0.05: significant; **p<0.20: covariate of the regression model

Table 4. Comparison of factors associated with block adherence by users in the low, medium, and high adherence groups (n=154)

Questionnaire:	Mean±standard-deviation			
	Adherence			
	Low (n=72)	Medium (n=65)	High (n=17)	p
General	3.9 (±2.8)	2.8 (±1.8)	2.6 (±2.4)	0.01*
Motivators	10.7 (±1.2)	11.1 (±0.9)	11.4 (±1)	0.02*
Obstacles	3.8 (±2.2)	3.4 (±1.9)	2.6 (±1.5)	0.07**

**p<0.20: enters the logistic regression model; *p<0.05: significant.

Table 5. Multinomial Logistic Regression Analysis for determining associations with adherence to groups

Adherence*	Variable	Crude Model		Adjusted Model	
		Odds Ratio	95%CI	Odds Ratio	95%CI
Medium Adherence	General Reasons	0.82	0.70-0.97*	0.75	0.59-0.95*
	Motivators	1.35	0.98-1.86	1.06	0.65-1.72
	Obstacles	0.98	0.82-1.17	0.85	0.66-1.08
	Age			0.99	0.94-1.04
	Sex				
	Female			Ref	Ref
	Male			6.12	0.83-44.9
	Marital Status				
	Lives with partner			Ref	Ref
	Does not live with partner			1.95	0.63-5.97
	Years of Schooling			0.95	0.90-1.02
	VAS			1.20	0.97-1.47
	Participation Time			1.02	1.01-1.05*
High Adherence	General Reasons	0.83	0.63-1.09	0.79	0.52-1.20
	Motivators	1.89	0.98-3.70	0.79	0.31-1.98
	Obstacles	0.81	0.59-1.11	0.66	0.39-1.14
	Age			0.95	0.86-1.05
	Sex				
	Female			Ref	Ref
	Male			63.41	0.41-166.54
	Marital Status				
	Lives with partner			Ref	Ref
	Does not live with partner			3.39	0.40-28.4
	Years of Schooling			0.70	0.50-1.01
	VAS			0.89	0.60-1.31
	Participation Time			1.04	1.01-1.07*

*Medium adherence: 31-70% presence; high adherence: above 71% presence; low adherence: 0-30% presence (reference category); VAS: Visual Analogue Scale.

DISCUSSION

In this study, among the participants in the evaluated groups, more participation time increased the chances of medium and high adherence and reporting more general reasons for non-adherence decreased the chance of medium adherence. The sample in this study was similar to a study carried out with 17 individuals participating in a physical activity program in a UBSF in Botucatu, São Paulo, where 82% were women, with a mean age of 67 (±6.17) years, 65% lived with partners, and the mean time in the program was 7.75 (±6.32) years[13]. Most of the participants in this study are women, confirming the data found in the literature[14,15]. A study carried out in Pelotas, Rio Grande do Sul, included 195 women and only four men[14]. Such gender difference was also observed in studies carried out with social groups in Florianópolis, Santa Catarina, in which 79% and 91% of the participants were women[15,16]. This difference can be explained by the different leisure opportunities, by the perception of the exercises offered in the UBSF as physically undemanding, and by the lower concern of men with prevention, for cultural and work issues[17,18].

When adherence was analyzed, in a study carried out with 113 elderly women from Belo Horizonte, Minas Gerais, submitted to a home exercise program, with indirect supervision, 26.64% were considered adherent and 73.4% non-adherent, an adherence rate higher than the one found in this study[12]. This difference may be due to indirect supervision and the performance at home, at any time, and the shorter observation time, which can minimize the finding of non-adherence after a longer period.

There are factors that positively and negatively affect the adherence to physical activity programs[19]. This study identified that a greater report of general reasons for non-adherence decreased the chance of medium adherence. A study carried out in Recife, Pernambuco, with 120 elderly participants who had participated in social programs for health and quality of life for at least six months, carried out in public spaces, found no association between general reasons and non-adherence to the evaluated programs[20].

Such difference may occur because the exercises are more diversified and considered a reference in the municipality, thus showing greater adherence and fewer absences. Another important point is the participation time in the program in question, which is known to help reduce the chance of low adherence.

Although less frequent in the low adherence group, the report of motivating factors did not increase the chance of presenting medium or high adherence. The motivators were considered important for greater adherence in a study in Botucatu, São Paulo, which found about 50% adherence among 17 participants in PHC[13]. The different result may be due to different user profiles, since this study analyzed four different units, which generates greater variability in responses. The reporting of obstacles was associated with adherence. A study carried out with 113 elderly women from the community of Belo Horizonte, Minas Gerais, found an association between obstacles and low adherence. However, this study analyzed guided home activities with indirect supervision, a type of activity that requires much more discipline in its performance[12]. Our study analyzed groups at UBSFs, with direct supervision and great social interaction, which can minimize the importance of obstacles to impaired adherence.

Participants with a longer participation time were more likely to have medium and high adherence. In the study carried out with 199 elderly people in Pelotas, Rio Grande do Sul, whose adherence was higher than this study, most participants had been in the physical activity program for at least six months and at most five years[14], which strengthens the evidence related to participation time affecting adherence. With the increase in activity practice time, psychological benefits overlap aesthetic ones, and, probably for this reason, individuals have greater adherence, identifying physical activity as pleasant[21].

A limitation of the study was the focus of the evaluated groups on prevention and health promotion. Such activities may be less stimulating than curative activities and, therefore, adherence may be lower and its assessment more difficult[22]. A strength of the study was its duration, ideal for assessing adherence. According to the literature, 50% of the population that starts an exercise program interrupts it in up to 6 months[11], and the follow-up time was able to notice such dropouts and investigate their reasons. Another important point to be highlighted is the sample made up of users participating in groups offered at UBSFs, a universe little explored in physical therapy studies.

CONCLUSION

Along with the other UBSF professionals, physical therapists must always seek to increase the bond with users, avoid early dropouts, and create strategies to increase adherence to groups, always aimed at increasing the benefits of health promotion and disease prevention.

REFERENCES

1. Brasil. Ministério da Saúde. Política Nacional de Atenção Básica [Internet]. Brasília, DF: 2012 [cited 2020 Nov 3]. Available from: https://dab.saude.gov.br/portaldab/biblioteca.php?conteudo=publicacoes/pnab.
2. Augusto VG, Aquino CFD, Machado NC, Cardoso VA, Ribeiro S. Promoção de saúde em unidades básicas: análise das representações sociais dos usuários sobre a atuação da fisioterapia. Cienc Saude Colet. 2011;16(Suppl 1):957-63. doi: 10.1590/S1413-81232011000700027
3. Moretti PGS, Fedosse E. Núcleos de Apoio à Saúde da Família: impactos nas internações por causas sensíveis à atenção básica. Fisioter Pesqui. 2016;23(3):241-7. doi: 10.1590/1809-2950/14662023032016
4. Goulart FAA. Doenças crônicas não transmissíveis: estratégias de controle e desafios para o sistema de saúde [Internet]. Brasília, DF: Organização Pan-Americana da Saúde, 2011 [cited 2020 Nov 3]. Available from: https://www.nescon.medicina.ufmg.br/biblioteca/imagem/4857.pdf
5. Malta DC, Silva MMA, Albuquerque GM, Amorim RCA, Rodrigues GBA, Silva TS, et al. Política Nacional de Promoção da Saúde, descrição da implementação do eixo atividade física e práticas corporais, 2006 a 2014. Rev Bras Ativ Fis Saude. 2014;19(3):286-99. doi: 10.12820/rbafs.v.19n3p286
6. Gomes KV, Zazá DC. Motivos de adesão a prática de atividade física em idosas. Rev Bras Ativ Fis Saude. 2009;14(2):132-38. doi: 10.12820/rbafs.v.14n2p132-138
7. Hirayama MS. Atividade física e doença de Parkinson: mudança de comportamento, auto-eficácia e barreiras percebidas [master's thesis on the Internet]. Rio Claro: Universidade Estadual Paulista; 2006 [cited 2020 Nov 3]. Available from: https://200.145.6.238/bitstream/handle/11449/87372
8. Pisters MF, Veenhof C, Schellevis FG, Twisk JW, Dekker J, De Bakker DH. Exercise adherence improving long term patient outcome in patients with osteoarthritis of the hip and/or knee. Arthritis Care Res. 2010;62(8):1087-94. doi: 10.1002/acr.20182
9. Henry KD, Rosemond C, Eckert LB. Effect of number of home exercises on compliance and performance in adults over 65 years of age. Phys Ther. 1999;79(3):270-7. doi: 10078770/pt.793270
10. Yang D, Liu B, Sun Y, Snetselaar LG, Wallace RB, Bao W. Trends in Adherence to the Physical Activity Guidelines for Americans for Aerobic Activity and Time Spent on Sedentary Behavior Among US Adults, 2007 to 2016. JAMA Netw Open. 2019;2(7):1-11. doi: 10.1001/jamanetworkopen.2019.7597
11. Medina-Mirapeix F, Escolar-Reina P, Gascón-Cánovas JJ, Montilla-Herrador J, Collins SM. Personal characteristics influencing patients

adherence to home exercise during chronic pain: a qualitative study. J Rehabil Med. 2009;41(5):347-52. doi: 10.2340/16501977-0338

12. Picorelli AMA, Pereira DS, Felício DC, Gomes DA, Dias RC, Pereira LSM. Adesão de idosas a um programa de exercícios domiciliares pós-treinamento ambulatorial. Fisioter Pesqui. 2015;22(3):291-308. doi: 10.590/1809-2950/13997522032015
13. Monteiro, MC. Adesão de idosos a programa de atividade física em unidade de atenção primária à saúde [master's thesis]. Botucatu: Universidade Estadual Paulista; 2014.
14. Ribeiro JAB, Cavalli AS, Cavalli MO, Pogorzelski LV, Prestes MR, Ricardo LIC. Adesão de idosos a programas de atividade física: motivação e significância. Rev Bras Cienc Esporte. 2012;34(4):969-84. doi: 10.1590/S0101-32892012000400012
15. Benedetti TR, Mazo GZ, Borges LJ. Condições de saúde e nível de atividade física em idosos participantes e não participantes de grupos de convivência de Florianópolis. Cien Saude Colet. 2012;17(8):2087-93. doi: 10.1590/S1413-81232012000800019
16. Mazo GZ, Meuer ST, Benedetti TRB. Motivação de idosos para a adesão a um programa de exercícios físicos. Psicol Am Lat [Internet]. 2009 [cited 2020 Nov 3];18:15-9. Available from: https://pepsic.bvsalud.org/scielo.php?script=sci_arttext&pid=S1870350X20090002000
17. Mazo GZ, Cardoso FL, Aguiar DD. Programa de hidroginástica para idosos: motivação, auto-estima e auto-imagem. Rev Bras Cineantropom Desempenho Hum. 2006;8(2):67-72.
18. Alves RF, Silva PR, Ernesto MV, Lima AGB, Souza FM. Gênero e saúde: O cuidar do homem em debate. Psicol Teor Prat [Internet]. 2011 [cited 2020 Nov 3];13(3):52-166. Available from: http://pepsic.bvsalud.org/pdf/ptp/v13n3/v13n3a12.pdf
19. Sant'Ana CA, Justino BL, Zarpellon MG, Bertoldo BT, Kuhnen AP. Fatores influentes na desistência de idosos em um programa de exercício físico. Movimento. 2008;14(1):225-39. doi: 10.22456/1982-8918.2303
20. Andreotti M, Okuma S. Perfil sócio-demográfico e de adesão inicial de idosos ingressantes em um programa de educação física. Rev Paul Educ Fis [Internet]. 2003 [cited 2020 Nov 3]; 17(2):142-53 Available from: http://citrus.uspnet.usp.br/uploads/arquivo/v17%20n2%20artigo6.pdf
21. Saba FKF. Aderência: à prática do exercício físico em academias. São Paulo: Manole; 2001.
22. Carvalho MP, Luckow ELT, Peres W, Lima GG, Siqueira FCV. O envelhecimento e seus fatores de risco associados. RBCEH. 2011;8(2);265-71. doi: 10.5335/rbceh.2012.1296