

## PROFILE OF PRACTITIONERS OF SUPERVISED PHYSICAL EXERCISE IN THE SOUTHERN REGION OF BRAZIL

### *PERFIL DOS PRATICANTES DE EXERCÍCIO FÍSICO SUPERVISIONADO DA REGIÃO SUL DO BRASIL*

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**ABSTRACT:** With 23,398 fitness academies, catering for around seven million users, Brazil ranks second behind the United States in the number of units. The objective of this study is to delineate the profile of supervised physical activity practitioners in the three most southern states of Brazil (Paraná, Santa Catarina, and Rio Grande do Sul), analyzing the reasons which lead them to choose a fitness service. Fitness academy clients were also surveyed in relation to their alcohol, tobacco and food supplement usage. Seven hundred and ninety-seven (797) people were evaluated by means of a questionnaire. Data was collected in 24 fitness academies (eight in each state) in the three most southern states of Brazil. It was observed that those who practiced exercise regularly at fitness academies smoked little, consumed few food supplements, and with (50.44%) of those surveyed stating that they consumed only moderate amounts of alcohol. The majority, (34.13%) of exercise practitioners in southern Brazil chose to go to the gym five times a week, (40.99%) went at night, with (40.56%) giving as their reason for practicing exercise as being a way to improve their health. The distance between their home and the gym was the most important reason in choosing a place to conduct training. Intense individual activities were the most practiced type of exercise, there being no statistical difference between the percentages in the three states.

**KEYWORDS:** Profile of sports. Fitness Academies in Southern Brazil. Consumer profile.

### INTRODUCTION

With 23,398 fitness academies, catering for around seven million users, Brazil ranks second behind the United States in the number of units. According to the International Health & Racquet Sports Club Association (IHRSA, 2014), in the United States had 30,500 units. Market data shows that Brazilians have a great willingness to participate in physical activities during their leisure time (SEBRAE, 2015) partly due to public awareness of the beneficial effects of exercise, as opposed to the downside of being sedentary and overweight resulting in the shortening of life expectancy and negative impacts on the quality of life (WHO, 2014). The relentless pursuit of an aesthetic model idealized by the media may also be a factor in determining the reason why people practice supervised physical activities.

Even with increasing numbers practicing physical exercise, only a small part of the national population exercise satisfactorily, as shown by statistics from the *Ministério da Saúde do Brasil* (MSB, 2013), which states that only 15.2% of the population practice physical activity in the way recommended. Moura et al (2008) reported that 14.9% of adults practiced 30 minutes of light or

moderate physical activity on five or more days in the week or 20 minutes of vigorous activity three or more days in the week.

It is evident therefore that there is a lot of room for growth in the regular physical exercise market in Brazil especially considering that obesity has become a major worldwide epidemic (WHO, 2014), with 43.0% of Brazils population being considered overweight (MOURA, 2008). Malta, Andrade, Claro, Berna, & Monteiro (2014), states that the number of Brazilians overweight had increased by more than one percentage point. Estimating the Body Mass Index (BMI) of the population attending fitness academies is important in order to verify how physically active clients are in relation to weight ratios and the activities they should practice.

It is important to study Brazilian habits that may contribute to the development of metabolic syndromes relating to regular consumption of tobacco and alcohol. WHO (2008) states that smoking is the leading cause of premature death from such things as preventable diseases and disabilities in developed countries. The *Diretoria de Saúde de Portugal* (DGS, 2013) states that the main causes of smoking-related deaths are respiratory diseases, cardiovascular diseases and

cancer. Obesity is also a risk factor for coronary heart disease (ACSM, 2007).

Given the benefit of exercise in changing body composition (ACSM, 2006) and metabolic, physiological and psychological parameters (ACSM, 2007) it is relevant to evaluate; what type of exercise that is practiced in southern Brazil, the objectives of academy clients, the correlation of results according to weekly frequency, activity mode chosen, the type and consumption of food supplements which help in the process.

Soler, et al (2013) argues that an increase in tolerance intensity, or the exercise session time is related to training frequently. Carvalho (2011) stated in their research that practitioners who attend the gym more than three times a week were happier people.

IHRSA (2014) found that in the US the main reason given by clients for practicing exercise in a fitness academy was to; stay healthy, followed by a desire to feel better about one self. Ascensão (2012) found that the reasons that prompt people to adherence to physical exercise at gyms were: well being, health, stress reduction and physical fitness conditioning. Fermino, Pezzini, & Reis (2010) concluded that health, fitness; desire to do things, attractiveness and harmony was the main motivators for regular exercise, regardless of sex, body fat percentage and BMI.

Considering the above, the objective of this study was to delineate the profile of supervised physical activity practitioners in the southern region of Brazil, analyzing the reasons that led them to choose a fitness service as well as their profiles in relation to alcohol, tobacco and food supplements.

## MATERIAL AND METHODS

Seven hundred and ninety-seven (797) volunteers were evaluated, three hundred and twenty six (SOLER, 2013) males and four hundred and sixty two (462) females, resident in the two most populous cities in each state in southern Brazil (IBGE, 2010). The municipalities used as a reference in the state of Parana (PR) were Curitiba and Londrina, (where 312 people were surveyed), in the state of Santa Catarina (SC), Joinville and Florianópolis, (where 272 people were surveyed), in Rio Grande do Sul (RS), Porto Alegre and Caxias do Sul, (where 213 people were surveyed). Twenty four fitness academies were randomly selected, four in each city in which the research was conducted, totaling eight academies in each state. All the academies selected agreed to participate in the research project.

The samples were obtained in the period from May to September 2015. The participants who agreed to participate in the survey were entering or leaving in the fitness academy at the time of the data collection, and were aged between 12 and 80 years old. All participants signed an informed consent term, (minors having their terms signed by their legal guardians), and the collection of data was conducted in accordance with the principles proposed by Resolution 466/2012 of the *Conselho Nacional de Saúde* (National Health Council). The study was approved by the *Comitê de Ética em Pesquisa* (Committee for Ethics in Research) under the CAAE number: 39816114.0.0000.5365 of *Instituto de Ensino Superior e Centro Educacional Luterano Bom Jesus*, with the opinion number 1.044.918/2015.

The volunteers were instructed to answer a closed questionnaire with twelve objective questions directed towards: physical profile in order to establish BMI; Cigarette consumption profile, alcohol and food supplements used; profile of sports practiced, in order to verify what led the interviewee to choose a particular academy, how they exercised and for what purpose and what was the monetary amount they were investing monthly in their training.

After the questionnaires were tabulated using *Microsoft Office Excel 2010*, data analysis was undertaken using Statistical Package for Social Sciences software (version 20.0, SPSS Inc, Chicago). Frequency tables, to characterize the sample were used, as well as measures of central tendency (mean) and dispersion (standard deviation). The analysis of adherence to normality was verified by the Kolmogorov-Smirnov test with the Lilliefors correction. Inferential analysis and comparison between groups we used analysis of variance of a path (one-way ANOVA) with post hoc Bonferroni. The chi-square test ( $\chi^2$ ) was used to compare the profile of physical activity between regions. All statistics were analyzed considering a significance level of 95% ( $p = 0.05$ ).

## RESULTS

The mean BMI of the questioned population was 24.77 ( $\pm 3.54$ ) kg / m<sup>2</sup>, which is considered a healthy standard. The state with the highest BMI was the Rio Grande do Sul, with a score of 24.85 ( $\pm 3.67$ ) kg / m<sup>2</sup>, followed by Paraná with 24.80 ( $\pm 3.66$ ) kg / m<sup>2</sup> and Santa Catarina 24.67 ( $\pm 3.31$ ) kg / m<sup>2</sup>. In relation to gender, males were above the healthy BMI of 25.66 ( $\pm 3.45$ ) kg / m<sup>2</sup>, while

females were within acceptable levels of 24.06 ( $\pm$  3.45) kg / m<sup>2</sup>.

Ninety point five eight (90.58%) of those surveyed were non-smokers (Table 1). The state with the most smokers was the Rio Grande do Sul, with 7.51%. The average for the sample who stated that they were smokers was 6.90% although it needs to be noted that 2.50% of those covered in the survey did not respond to the question. If the numbers are broken down by gender it can be seen

that 6.75% of the male respondents were smokers, and for females the figure was 6.93%.

A large percentage of fitness academy patrons (49.56%) do not drink alcoholic beverages. Of those who do consume alcoholic beverages, they do not drink more than twice a week (39.77%). When the gender percentages are compared it can be seen that 44.79% of males are in the habit of drinking alcohol twice a week while the vast majority of females (55.19%) stated that they did not consume alcohol.

**Table 1.** Consumption profile in relation to the states surveyed.

	Paraná		Santa Catarina		Rio G. do Sul		Total		
	N	%	N	%	N	%	N	%	
<b>Smoker</b>									
Yes	22	7.05	17	6.25	16	7.51	55	6.90	
No	278	89.10	250	91.91	194	91.08	722	90.59	
Did Not Respond	12	3.85	5	1.84	3	1.41	20	2.51	
<b>Alcohol Consumption</b>									
None	168	53.85	117	43.01	110	51.64	395	49.56	
2 times per week	106	33.97	123	45.22	88	41.31	317	39.77	
3 times per week	21	6.73	25	9.19	7	3.29	53	6.65	
4 times per week	3	0.96	2	0.74	5	2.35	10	1.25	
More than 5 times per week	2	0.64	1	0.37	1	0.47	4	0.50	
Did Not Respond	12	3.85	4	1.47	2	0.94	18	2.26	
<b>Consumption of Food Supplements</b>									
Yes	125	40.06	114	41.91	61	28.64	300	3.64	
No	177	56.73	155	56.99	149	69.95	481	60.35	
Did Not Respond	10	3.21	3	1.10	3	1.41	16	2.01	

With regard to the consumption of dietary supplements, most of the respondents 60.35% did not consume any product of this nature, while 37.64% said they used some form of supplements such as proteins, carbohydrates, diet pills or stimulants, giving an average consumption 0.69 supplement per person. For those who used consumed supplements the rate for males was 55.83%, while the female percentage was just 24.46%.

People who attend academies practice on the average 1.34 modalities, of which most practiced individual activities (62.71%) without personalized supervision. These individual modalities include such activities as weight training, running and cycling. Twenty point five percent (20.50%) of respondents practiced group activities such as; team sports and gymnastics in group. Personalized supervised activities accounted for

8.94% of the total while low-impact activities such as Pilates and Yoga account for a further 7.83%. Males (76.22%) had a higher incidence of choice for the practice of individual exercise without personalized supervision (Table 2), when compared to that of females at (54.71%).

**Table 2.** Modalities practiced in southern Brazil in relation to the states surveyed.

Activities	South of Brazil	Paraná	Santa Catarina	Rio G. do Sul
Low Impact	7.83%	11.00%	4.93%	6.14%
Collective Activities	20.50%	22.01%	14.51%	25.82%
Individual Activities	62.71%	59.02%	72.53%	56.15%
Personalized Training	8.94%	7.96%	8.02%	11.89%

There was no statistical difference (Square test ( $\chi^2$ ) with a value of 9.532, with 6 degrees of freedom and p-value = 0.146) between the percentage of activities practiced in the three states studied (Table 3). This means that the southern region is homogeneous in its physical activity practice profile.

Survey participants have, going to the gym to practice exercise every week, as a priority in their lives. Thirty-four point one three percent (34.13%) of respondents sought to use the gym five times a

week, and nineteen point seven percent (19.70%) three times a week. The less frequently cited use was twice a week, at 8.53%. Males were more assiduous to training programs than females; with 21.47% of males visiting an academy more than five times a week, while only 11.90% females visited the academy with the same frequency. The percentage of the participants of the survey who frequented an academy five times per week were; female (28.14%) and male (41.72%).

**Table 3.** Frequency and profile of sport in relation to the states surveyed.

	Paraná		Santa Catarina		Rio G. do Sul		Total		
	N	%	N	%	N	%	N	%	
<b>Weekly Frequency</b>									
2 times per week	9	2.88	8	2.94	51	23.94	68	8.53	
3 times per week	62	19.87	39	14.34	56	26.29	157	19.70	
4 times per week	61	19.55	64	23.53	25	11.74	150	18.82	
5 times per week	114	36.54	106	38.97	52	24.41	272	34.13	
More than 5 times per week	52	16.67	51	18.75	23	10.80	126	15.81	
Did Not Respond	14	4.49	4	1.47	6	2.82	24	3.01	
<b>Objective of physical activity*</b>									
Health	211	39.66	186	40.35	155	42.12	552	40.56	
Aesthetics	154	28.95	112	24.30	101	27.45	367	26.97	
To Feel Good	167	31.39	163	35.36	112	30.43	442	32.48	
<b>Distance of academy from home</b>									
Within 500m	73	23.40	52	19.12	38	17.84	163	20.45	
Between 500 m and 1 km	63	20.19	61	22.43	39	18.31	163	20.45	
Between 1 km and 2 km	54	17.31	85	31.25	34	15.96	173	21.71	
Between 2 km and 5 km	68	21.79	49	18.01	40	18.78	157	19.70	
More than 5 km	39	12.50	18	6.62	52	24.41	109	13.68	
Did not Respond	15	4,81	7	2,57	10	4,69	32	4,02	
<b>Period that frequente academy*</b>									
Morning	73	21,53	79	25,99	47	21,08	199	22,98	
Afternoon	117	34,51	120	39,47	75	33,63	312	36,03	
Night	149	43,95	105	34,54	101	45,29	355	40,99	

\*possibility of more than one response.

The principle reason interviewees gave for frequenting a gym was for health reasons, 40.55%. The least reason cited was for aesthetic benefits at 26.96%. When broken down into gender, both males and females sought to practice a physical activity in order to improve their health (39.74% and 41.07%

respectively). The desire for aesthetic benefits also ranked last.

Forty point nine, nine percent (40.99%) of those interviewed preferred to attend an academy at night, thirty-six point zero two per cent (36.02%) in the late afternoon / early evening and finally twenty-

two point nine seven percent (22.97%) in the morning. Both genders preferred to attend the gym at night.

The most significant factor in choosing a place to exercise, according to regular academy clients (20.37%) in southern Brazil, was the distance from their home to the gym (Table 4). Professional qualification of instructors at 19.18% was the next cited reason, followed by the time the interviewees

needed to be present at their place of work (17.52%). When the figures are broken down into gender, males (21.52%) chose as their primary factor the distance to the academy, and secondly the quality of the equipment (20.06%). Females also stated the distance of the academy from their residence (19.76%) as the most important factor, but in second place was the professional qualification of the academy staff (19.10%).

**Table 4.** Academy choice factors in relation to states and gender

	Total	Paraná	Santa Catarina	Rio G. do Sul
	%	%	%	%
Opening Hours	17.52	17.02	16.78	19.16
Distance from Residence	20.37	23.08	19.22	17.62
Professional Qualification	19.18	16.14	23.78	18.39
Modalities Available	8.24	8.07	6.19	10.92
Monthly Academy Fee	16.54	15.64	15.31	19.35
Equipment Quality	17.00	17.91	18.24	14.18
Others	1.14	2.14	0.49	0.38

On average 2.48 factors were taken into account when a client sought an academy to practice exercise in. Paraná with on average 2.64 criteria in choosing an academy was the most demanding state. It was followed by Rio Grande do Sul at 2.51 reasons and lastly Santa Catarina at on average 2.27 reasons. Males at 2.16 reasons were less critical than females at an average 2.71 criteria, when they chose the environment to practice their physical activities.

Knowing that the most important motive in choosing a gym is the distance from a client's residence, the question; "What is the distance between your home and your academy" was asked? Most replied (21.71%) that the academy was between one and two kilometers from their home. When broken down by gender; males (24.23%) opted for gyms that were between one and two kilometers from home but females (21.00%) preferred academies between 500 meters to one kilometer from their place of residence.

The average financial investment in fitness training in the area surveyed was R \$158.79. When broken down into states; Paraná had the highest investment cost at R \$187.52, followed by Santa Catarina at R\$144.93 and Rio Grande do Sul at R\$ 133.85. When considering gender, males tended to invest more, with an average total of R\$ 179.61, while females spent an average of R\$142.33.

## DISCUSSION

A surprising result was the low incidence of consumption of addictive products such as cigarettes and alcohol by Brazilians who frequent fitness academies. Approximately half (49.56%) of those interviewed did not consume alcohol regularly. The cigarette consumption indicator for fitness academy clients, at just 6.90%, is very low considering the data provided by Malta et al (2014), which indicates that currently 10.8% of Brazilians smoke. It is clear therefore that the people attending academies in southern Brazil are less likely to have a tobacco addiction than the general population. The index provided by *Vigilância de fatores de risco e proteção para doenças crônicas por inquérito telefônico* (VIGITEL, 2013) points out that the habit of smoking is higher among males (12.8%) than among females (9%). In this study the indicators appear to be reversed; females having a higher frequency of cigarette addiction than males.

Morales (2002) research conducted in the city of Joinville/SC found that 17.1% of fitness academy clients were smokers and 45.9% of respondents did not drink. In the same state, in this present study (Santa Catarina) the index was much lower. In this study it was found that only 6.25% of the population were smokers (the state with the lowest number of smokers when compared to the other sampling). This discrepancy is probably due to the date of the study. According to DGS (2013), there has been a significant drop in recent years in

the numbers of the world's population who smoke. DGS figures show that 28% of the populations of Europe are smokers, which is considerably higher than the Brazilian rate.

In relation to the consumption of dietary supplements it was found that 37.64% of those interviewed were using such products. Other research shows that consumption is significantly higher in different centers of the country. Hirschbruch, Fisberg, & Mochizuki (2008) showed in their survey in São Paulo/SP that the use of supplements is reported to be 61.2%. Research by Silveira, Lisbôa e Sousa (2011) Brasília/DF, found that 53% of respondents claim to consume some form of dietary supplement. However, Fayh, Silva, Jesus & Costa (2013) observed in Porto Alegre/RS a lower use of nutritional supplements found than in this present study (28.8%), but very close to that found in Rio Grande do Sul, which has the lowest average of the three states in this criterion at 28.63%.

The modality most widely practiced; at 62.75% in this survey was the practice of individual exercises. This result was similar to that found in several studies (SILVEIRA 2011, NUVALA 2012, MODESTO 2016), showing compliance with the current literature and consciousness on the benefits of resistance training (ACSM, 2006). However, Sa-Silva, Sandre-Pereira, & Salles-Costa (2011) found different results. Their results showed that group activities such as the practicing of football amongst males, was the predominant type of activity. In their study, females tended to choose low intensity activities such as walking. Thus there is a difference in research results, in comparison to this present study.

The most quoted weekly rate of attendance at fitness academies was five times a week (34.13%) demonstrating controversial data with the current literature. Bertulucci, et al (2010) found participants in survey exercised every day. Carvalho (2011) noted that attendance of 3 to 4 times per week was more common. Ferreira (2012), states that people attend the gym on average two or three times a week. Gonçalves (2012) found that the majority of the members worked out twice a week.

When clients begin attending an academy to practice an activity, the most quoted reason (40.55%) for exercising is because of the perceived health benefits. This health concern is also evidenced in the literature (FERMINO 2010; ASCENSÃO 2012; IHRSA 2014). Following along the same lines, Liz et al (2010) states that the most cited reasons for practicing exercise was for "health" and "aesthetic" reasons. Silveira et al (2011) found

aesthetic concerns were more predominant, in which males wanted to increase muscle volume, while females sought to lose weight.

In this study, the state of Santa Catarina showed that 40.34% of client's attended academies in order to improve their health, followed by the desire to feel good about themselves and finally for aesthetic reasons. The research conducted in the same state as that conducted by a study of Soares (2004) showed similar results. In other literature (MORALES, 2002; BOSSI et al, 2008) the result was controversial. In that study aesthetic factors were seen as the principal reason people attended fitness academes, followed by health and wellbeing goals.

In this study, distance between an academy and their residence was the main factor (20.37%) in clients choosing an academy in which to train. Zannete (2003) found that in Rio Grande do Sul the quality of teachers in academies was the key aspect in choosing a gym. In this present study, the qualification of fitness center professionals was the second most cited item, although in the state of Santa Catarina this criterion was cited as the most important.

Gonçalves, Buchmann, & Carvalho (2013) also found that in Rio Grande do Sul good facilities and modern equipment are fundamental factors in selecting an academy. In this present study it was found for 19.35% of those interviewed that the monthly gym attendance fee rated as a higher factor, with the quality of facilities and equipment being fifth placed criterion at 14.18%, demonstrating the difference between the two surveys.

For those who responded distance as being the most important factor in choosing a gym, most of those sampled (21.71%) responded their academy is located between one and two kilometers from their place of residence. Morales (2002) in his survey in Santa Catarina stated that his subjects lived within 2.5km of the academy. Bartolomeu Neto et al (2013) reported that most of the participants of their survey attended the nearest gym to their residence at a distance less than one kilometer.

Liz et al (2010) and Bartholomeu Neto et al (2013) contrary to this present study found that the clients reported that the main reasons they stopped attending fitness academies was due to; a lack of time, lack of motivation, distance of to the academy, monetary constraints and problems with classes and instructors.

When the preferred time to attend an academy was verified this survey found that

40.99% of those surveyed preferred to attend the gym in the evening. Zanette (2003) also found similar results and associated the standard eight-hour work day and the number of evening classes offered by gyms as being the principal reason. As Zanette (2003) research is now old, this view can be questioned, as more recent research has found that the most popular activities are the individual, not requiring structured classes.

The average investment in physical exercise training was R\$158.79 per month. This value applies to the total amount spent on training and may contain the value on food supplements. The IHRSA (2014) states that in the United States the average amount invested in 2012 was US\$49 and in Portugal the average price of the academy tuition was 39 Euros. Gonçalves (2012), Portugal, found most spent between 50 to 99 Euros. These results demonstrate that residents of southern Brazil invest a large portion of their income on training compared to those in Portugal and America.

Although the most important reason cited by academy clients in southern Brazil for choosing a gym, is the distance between academy and their residence (a reason that could be considered subjective), there is the possibility that the practice of exercise in an academy is in fact addictive. As the reason given for exercising in southern Brazil is

the pursuit of the health benefits, and the rest of Brazil and in Europe to seek cosmetic improvement, it may argued that in southern Brazil academy attendance is less additive. This is a controversial assumption.

## CONCLUSIONS

It was observed that those who attend fitness academies covered by this present study; smoked little, consumed few food supplements and 50.44% were moderate drinkers.

The most practiced type of exercise was intense individual activities, there being no statistical difference between the percentages in the three states under study. The southern region states were homogeneous in their physical activity practice profile.

The majority (34.13%) of fitness academy clients in southern Brazil choose to go to the gym five times a week, at night (40.99%), with the objective of improving their health (40.56%).

Finally, it was observed that 40.90% of the fitness academy clients in southern Brazil prefer to conduct their activities in establishments located less than a kilometer away from the place of residence (40.90%).

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**RESUMO:** O Brasil ocupa o segundo lugar do mundo em número de academias, totalizando 23.398 unidades com cerca de sete milhões de frequentadores, ficando atrás apenas dos EUA. Neste sentido, o objetivo desse estudo foi delinear o perfil dos praticantes de atividade física supervisionada, analisando os motivos que os levam a escolher um serviço de *fitness*, bem como traçar o perfil de consumo de álcool, tabaco e suplementos alimentares dos habitantes da Região Sul do Brasil. Foram avaliadas 797 pessoas através de um questionário próprio. A coleta foi realizada em 24 academias divididas em oito para cada um dos três estados do Sul do Brasil. Observou-se que os frequentadores de academias da área de abrangência da pesquisa fumam pouco, consomem poucos suplementos alimentares e apenas 50,44% dessa população consome bebidas alcoólicas de maneira moderada. A maior parte (34,13%) dos praticantes de exercício físico do Sul do Brasil optam por frequentar a academia cinco vezes por semana, no período noturno (40,99%), com o intuito de melhorar a saúde (40,56%). A distância entre a residência e a academia se mostrou o motivo mais relevante para escolher um local para realizar o treinamento. O tipo de exercício mais praticado são as atividades individuais mais intensas e não houve diferença estatística entre os percentuais nos três estados estudados.

**PALAVRAS-CHAVE:** Perfil da prática esportiva. Academias do Sul do Brasil. Perfil de consumo.

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