SOCIODEMOGRAPHIC, SOCIOECONOMIC AND MOTIVATIONAL PROFILE OF BRAZILIAN TRIATHLETES

PERFIL SOCIODEMOGRÁFICO, SOCIOECONÔMICO E MOTIVACIONAL DE TRIATLETAS BRASILEIROS

PERFIL SOCIODEMOGRÁFICO, SOCIOECONÓMICO Y MOTIVACIONAL DE LOS TRIATLETAS BRASILEÑOS

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ABSTRACT

Introduction: Triathlon can be considered one of the most successful endurance sports worldwide due to the wide dissemination of information, expansion of the offer of competitions, and greater popularity. Objective: To analyze Brazilian triathletes' sociodemographic, socioeconomic, and motivational profiles. Methods: 411 triathletes participated in the study, 127 women [37.87 ± 9.34 years] and 284 men [36.02 ± 9.23 years]. Three questionnaires were sent electronically to assess sociodemographic, socioeconomic, and motivational data. In addition, descriptive analyses and statistical tests were performed to compare motivation between age, sex, and technical level groups. Results: It was found that there is a prevalence of male triathletes, amateurs, aged between 30-40 years, employed and economically favored. Amateur athletes have running as a base sport for Triathlon, and professionals start their sports career through swimming. Among the most practiced distances are the sprint Triathlon and half Ironman. Regarding motivation, women differ in the dimensions of group activity (p=0.020), emotion (p=0.002), and technical competence (p=0.007). Professional triathletes had higher scores in the dimensions of social recognition (p=0.001) and competition (p=0.001) and lower scores in the physical fitness dimension (p=0.005). Triathletes aged between 35 and 49 years had lower averages in the social recognition dimension (p=0.007), (p=0.012) and (p=0.004) and competition (p=0.028), (p=0.008) and (p=0.044) when compared to athletes aged 20 to 29 years. Conclusion: the profile of Brazilian triathletes is diverse, and differences in sex, age, and technical level impacted the motivation of the evaluated triathletes. ***Level of Evidence III; Diagnostic studies - Investigation of a diagnosis test; Study of non-consecutive patients, with no uniformly applied "gold standard".***

Keywords: Sports; Athletes; Motivation; Psychology, Sports.

RESUMO

Introdução: O Triathlon pode ser considerado um dos esportes endurance de maior sucesso mundialmente devido à grande disseminação de informações, ampliação da oferta de competições e maior popularidade. Objetivo: Analisar o perfil sociodemográfico, socioeconômico e motivacional de triatletas brasileiros. Métodos: Participaram da pesquisa 411 triatletas, sendo 127 mulheres [37,87 ± 9,34 anos] e 284 homens [36,02 ± 9,23 anos]. Foram enviados eletronicamente três questionários que avaliam dados sociodemográficos, socioeconômicos e a motivação. Foram realizadas análises descritivas e testes estatísticos para comparar a motivação entre grupos de idade, sexo e nível técnico. Resultados: Verificou-se que há prevalência de triatletas homens, amadores, com faixa etária entre 30-40 anos, empregados e economicamente favorecidos. Atletas amadores possuem a corrida como esporte de base para o Triathlon e profissionais iniciam sua carreira esportiva pela natação. Entre as distâncias mais praticadas estão o Triathlon sprint e meio Ironman. Sobre a motivação, mulheres diferem nas dimensões de atividade de grupo (p=0,020), emoção (p=0,002) e competência técnica (p=0,007). Triatletas profissionais apresentaram maiores pontuações nas dimensões de reconhecimento social (p=0,001) e competição (p=0,001) e menores pontuações na dimensão aptidão física (p=0,005). Triatletas com idades entre 35 a 49 anos obtiveram menores médias na dimensão reconhecimento social (p=0,007), (p=0,012) e (p=0,004) e competição (p=0,028), (p=0,008) e (p=0,044) quando comparados com atletas de 20 a 29 anos. Conclusão: o perfil de triatletas brasileiros é diverso e as diferenças de sexo, idade e nível técnico impactaram na motivação dos triatletas avaliados. ***Nível de Evidência III; Estudos diagnósticos - Investigação de um diagnóstico teste; Estudo de pacientes não consecutivos, sem "padrão ouro" aplicado de maneira uniforme.***

Descritores: *Esportes; Atletas; Motivação; Psicologia do Esporte.*

RESUMEN

Introducción: El triatlón puede considerarse uno de los deportes de resistencia de mayor éxito a nivel mundial debido a la gran difusión de información, ampliación de la oferta de competiciones y mayor popularidad. Objetivo: Analizar el perfil sociodemográfico, socioeconómico y motivacional de los triatletas brasileños. Métodos: Participaron en el estudio 411 triatletas, 127 mujeres [37,87 ± 9,34 años] y 284 hombres [36,02 ± 9,23 años]. Se enviaron electrónicamente tres cuestionarios para evaluar datos sociodemográficos, socioeconómicos y de motivación. Se realizaron

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análisis descriptivos y pruebas estadísticas para comparar la motivación entre grupos de edad, sexo y nivel técnico. Resultados: Se encontró que existe un predominio de triatletas masculinos, amateurs, con edades entre 30-40 años, empleados y económicamente favorecidos. Los deportistas aficionados tienen la carrera como deporte base para el Triatlón y los profesionales inician su carrera deportiva a través de la natación. Entre las distancias más practicadas se encuentran el Triatlón sprint y el medio Ironman. Respecto a la motivación, las mujeres difieren en las dimensiones actividad grupal (p=0,020), emoción (p=0,002) y competencia técnica (p=0,007). Los triatletas profesionales obtuvieron puntuaciones más altas en las dimensiones de reconocimiento social (p=0,001) y competición (p=0,001) y puntuaciones más bajas en la dimensión de condición física (p=0,005). Los triatletas con edades comprendidas entre 35 y 49 años tuvieron medias más bajas en la dimensión reconocimiento social (p=0,007), (p=0,012) y (p=0,004) y competición (p=0,028), (p=0,008) y (p=0,044) en comparación con atletas de 20 a 29 años. Conclusión: el perfil de los triatletas brasileños es diverso y las diferencias de sexo, edad y nivel técnico impactaron en la motivación de los triatletas evaluados. ***Nivel de Evidencia III; Estudios diagnósticos - Investigación de un diagnóstico prueba; Estudio de pacientes no consecutivos, sin un "patrón oro" aplicado uniformemente.***

Descriptores: *Deportes; Atletas; Motivación; Psicología del Deporte.*

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INTRODUCTION

The *Triathlon* comprises the sum of swimming, cycling, and running stages, performed sequentially and uninterruptedly.[1] It can be considered one of the most successful *endurance* sports in the world due to the wide dissemination of information, the expansion of competitions, and its recent popularity.[2] The sport's regulatory entities are increasingly seeking to encourage the participation of athletes with different performance levels. According to data from the Brazilian *Triathlon Confederation* (CBTRI), about 25 thousand athletes practice the sport in the country.[3]

In the *Triathlon,* athletes are divided into amateur or professional categories, which generally consider the experience level, race distance, age, and gender of the participants.[4] The races have distinct mileages, ranging from the short Triathlons at the sprint distance, usually with about 750 meters of swimming, 20 kilometers (km) of cycling, and 5 (km) of running, to the ultra triathlons, which are ultra-endurance events that can last up to 10 days.[5]

Triathlon requires an investment of time and money.[6] Regarding time, athletes usually spend at least four to five months preparing to compete. Another important factor is the high cost of acquiring and maintaining sports equipment and registration for competitions.[7] Maintaining the routine of those who decide to be triathletes is also challenging due to the need to manage personal, family, and work time.[6,7]

Understanding the reasons that lead athletes to practice this sport is important for a better understanding of the public's attitudes about their lifestyle habits and sporting trajectory. In this sense, the present investigation aims to analyze the sociodemographic, socioeconomic, and motivational profile of Brazilian triathletes.

MATERIALS AND METHODS

The procedures described in this investigation followed the recommended ethical assumptions. They were duly approved by the Ethics and Human Research Committee of the Federal University of Juiz de Fora, number 11733819.4.0000.5147, opinion 4.561.546. To characterize information related to the practice of *Triathlon*, the research team prepared a questionnaire to extract socio-demographic data and data on the athletes' sports practice. This form was specifically developed for this research and collected the following information: gender, age, family arrangement, marital status, sports history, training routine, and main competitions played. For the economic classification of the participants, we used the Brazilian Economic Classification of Brazil from the Brazilian Association of Research Companies[8] with a survey of household characteristics to differentiate the population into strata: A1 - 45 to 100 points; B1 - 38 to 44; B2 - 29 to 37; C1 - 23 to 28; C2- 17 to 22; D and E - 0 to 16.

The Participation Motivation Questionnaire (PMQ) duly validated in Brazil was applied to investigate the reasons that lead athletes to practice this sport.[9] This instrument is composed of 30 items equivalent to the possible reasons that lead athletes to practice sports and presents its results through eight motivation dimensions: a) social recognition (seven items); b) group activity (four items); c) physical fitness (four items); d) emotion (three items); e) competition (two items); f) technical competence (three items); g) affiliation (three items); and h) fun (four items). In this questionnaire, using a five-point Likert-type scale, the respondent indicates the degree of importance that most apply to his or her sports practice.

Individuals who voluntarily agreed to participate in the research and signed the Informed Consent Form (ICF) were included in this study. Triathletes who did not answer the questionnaires in full were excluded.

All questionnaires and instruments were duly scanned and transformed into electronic forms developed in *Google Forms Platform* through the link: https://forms.gle/i9niwHSCFgWggVtF6. The form was submitted in the period between 11/27/2020 and 01/25/2021.

Participants were recruited *online* via email or through the social networks *Instagram, Facebook,* and *Whatsapp* using virtual snowballing[10] a form of non-probability sampling that uses reference chains. Contacts were established directly (through private messages to the athletes' profiles) or indirectly (through third-party referrals). Along with the link to the form was sent an invitation text detailing the research procedures, objectives, and ways to answer the questions.

The results were analyzed using SPSS 22.0 *software,* and the significance level adopted[11] was $p<0.05$. For each PMQ dimension, the mean, median, standard deviation, and minimum and maximum values were calculated. All categorical variables were analyzed using absolute and relative frequency. To ascertain the internal consistency of the PMQ for the sample in question, Cronbach's alpha was calculated, which showed good consistency[10] ($\alpha=0.905$). The *Kolmogorov-Smirnov normality* test was performed, *and the* variables investigated were non-parametric. The *Mann-Whitney* U-test was used to compare the means of the dimensions of motivation according to gender and technical level (amateur vs. professional). Finally, the *Kruskal-Wallis* test with multiple comparisons in pairwise forms was performed to compare the 11 groups, divided into the age groups of the participants according to the age divisions held at the official championships by the International *Triathlon* Union (ITU).

RESULTS

A total of 411 triathletes participated in this study, 384 (93.4%) amateur athletes [37.23 ± 8.92 years] and 6.6% (n=27) professionals [27.41 ± 10.62 years) (Table 1). As for sex, 284 (69.1%) were men, and 127 (30.9%) were women. Of these, 402 (97.9%) resided in the North, Northeast, Midwest,

Southeast, and South regions of Brazil, and nine (2.1%) Brazilian triathletes resided in Germany, Spain, the United States, and Canada.

Regarding sports background, most amateur athletes have run 208 (50.6%) as their sport of origin for the practice of the *Triathlon*, followed by swimming 112 (29.2%) and cycling 70 (18.2%). Among professional athletes, 18 (66.7%) initially practiced swimming, 6 (22.2%) running, and 3 (11.1%) cycling. Among the complementary physical exercises, 238 (66.1%) practiced weight training, 141 (39.2%) functional training, and 56 (15.6%) pilates. Triathletes, in general, have a high training volume. Among amateur athletes, 320 (83.3%) perform one to two training sessions daily, while professional athletes perform two 6 (22.2%), three 13 (48.1%), and four or more 8 (29.7%) sessions.

Among the most practiced distances, the *Sprint Triathlon* is the most frequent, 234 (56.9%), followed by the Half *Ironman* 201 (48.9%) and Olympic *Triathlon* 189 (46%). About their *Triathlon* goals, 239 (58.2%) athletes want to participate in the *Ironman*, 188 (45.7%) in the Half *Ironman*, and 90 (21.9%) in the Olympic *Triathlon*.

About the socioeconomic profile surveyed by ABEP, it is relevant to point out that the predominant classification in the present sample was stratum A 364 (88.6%). The professions with the highest incidence reported were: physical education professionals 73 (17.8%), businessmen 35 (8.5%), military 28 (6.8%), and athletes 19 (4.5%).

Table 1. Relative and absolute frequency of triathletes by state and country.

Region	Triathletes	
	N	%
North	12	2.9
Northeast	29	7.1
Midwest	46	11.2
Southeast	221	53.8
South	94	22.9
Do not reside in Brazil	9	2.2
Total	411	100

Regarding the reasons for the practice of *Triathlon* by Brazilian athletes, regarding sex, women presented higher scores in the dimensions "group activity" (p=0.020), "emotion" (p=0.002), and "technical competence" (p=0.007) when compared to men. Regarding the technical level of the athletes, professional triathletes showed higher scores in the dimensions "social recognition" (p=0.000) and "competition" (p=0.001) and lower scores in the dimension "physical fitness" (p=0.005) when compared to amateur triathletes. (Table 2)

As for age groups, the group of triathletes aged 35 to 39 years, 40 to 44 years, and 45 to 49 years obtained, respectively, lower averages in the "social recognition" dimension when compared to the age group groups 20 to 24 years (p=0.007), (p=0.012) and (p=0.004) and 25 to 29 years (p=0.027), (p=0.012) and (p=0.015) years. In the "competition" dimension, the groups of triathletes aged 30 to 34 years and 35 to 39 years obtained, respectively, lower mean scores when compared to the age group groups 20 to 24 years (p=0.028) and (p=0.008) and 25 to 29 years (p=0.044) and (p=0.070). (Table 3)

DISCUSSION

The present investigation aimed to analyze Brazilian triathletes' sociodemographic and socioeconomic profile and the reasons that lead them to practice *Triathlon*. Additionally, we sought to verify possible differences in athletes' motivation according to gender, technical level, and age group. This study identified that Brazilian triathletes are mostly male, amateurs, aged 30-40 years, employed, and economically advantaged. Regarding motivation, women are more motivated in the dimensions of "group activity", "excitement," and "technical competence". Concerning the technical level, professional triathletes showed higher motivations in the "social recognition" and "competition" dimensions and lower scores in the "fitness" dimension. Younger athletes between 20 and 29 are more motivated by factors related to "competition" and "social recognition" when compared to athletes between 30 and 49 years old.

Table 2. *Mann-Whitney* U-test comparing motivation between gender and technical level.

	Social recognition			Group Activity			Physical Fitness			Emotion			Competition			Technical competence			Affiliation			Fun		
	Average	SD	P	Average	SD	P	Average	SD	p	Average	SD	P	Average	SD	p	Average	SD	p	Average	SD	p	Average	SD	p
Sex																								
Female	20.52	6.39	0.631	13.20	3.78	0.020	18.46	1.88	0.637	13.43	1.80	0.002	8.47	1.61	0.474	13.20	1.71	0.007	15.92	2.65	0.636	10.21	2.60	0.168
Male	20.19	7.07		12.26	4.20		18.39	1.91		12.66	2.36		8.56	1.67		13.78	2.05		15.45	3.07		10.08	2.97	
Athlete																								
Amateur	19.90	6.80	0.000	12.47	4.13	0.163	18.51	1.80	0.005	12.99	2.10	0.032	8.47	1.67	0.001	13.38	1.95	0.643	15.64	2.94	0.957	10.11	2.88	0.315
Professional	25.89	3.70		13.67	3.29		17.07	2.73		11.59	3.70		9.52	0.64		13.44	2.25		15.04	3.00		10.33	2.57	

Table 3. *Kruskal-Wallis* test comparing motivation between age group.

	Social recognition			Group Activity			Physical Fitness			Emotion			Competition			Technical competence			Affiliation			Fun		
	Average	SD	X^2/ p	Average	SD	X^2/ p	Average	SD	X^2/ p	Average	SD	X^2/ p	Average	SD	X^2/ p	Average	SD	X^2/ p	Average	SD	X^2/ p	Average	DP	X^2/ p
<20	24.86	6.70	45.038	15.07	4.61	26.539	16.79	4.06	10.422	11.50	4.12	10.638	9.57	0.64	40.252	13.64	2.24	9.594	15.14	4.05	11.923	10.71	3.64	10.184
20-24	24.78	6.28		13.84	3.50		18.64	1.76		12.59	2.86		9.44	0.80		13.63	1.87		15.84	2.74		10.09	2.42	
25-29	23.75	6.13		13.34	4.43		18.36	1.96		13.48	3.18		9.23	1.23		13.66	2.24		16.34	2.94		10.39	3.09	
30-34	19.45	5.98		11.92	3.46		18.34	1.64		13.11	1.97		8.32	1.58		13.28	1.90		15.37	2.03		10.08	2.86	
35-39	19.41	7.16		11.85	4.45		18.21	1.92		12.91	2.05		8.17	1.85		13.23	1.90		15.55	3.01		9.87	2.98	
40-44	18.87	6.65		12.32	4.13		18.65	1.85		13.08	1.95		8.48	1.69		13.49	2.03		15.34	3.47		10.00	2.84	
45-49	18.26	6.71	**0.000**[a]	11.76	4.04	**0.003**[b]	18.64	1.39	0.404	12.17	2.49	0.386	8.19	1.81	**0.000**[c]	13.17	1.93	0.477	15.19	3.04	0.290	9.60	2.66	0.424
50-54	17.54	5.95		13.38	2.59		18.31	1.70		12.77	1.87		7.77	1.83		13.31	2.01		15.85	2.07		10.92	1.49	
55-59	20.00	6.98		15.22	3.19		19.33	1.00		13.56	2.65		9.11	0.92		13.89	1.26		16.44	3.57		12.22	2.77	
60-64	26.00	3.55		15.00	2.16		19.50	0.57		12.75	0.50		9.75	0.50		12.50	1.91		16.75	2.87		11.00	1.82	
<65	17.33	4.04		16.00	2.00		19.33	1.15		13.00	2.00		8.00	2.00		13.00	3.46		18.67	2.30		13.00	2.00	

a - Difference between the 45-49 year group with the 25-29 year group (p=0.015) and 20-24 year group (0=0.004); Difference between the 40-44 year group with the 25-29 year group (p=0.012) and 20-2kl4 year group (0=0.003); Difference between the 35-39 year group with the 25-29 year group (p=0.027) and 20-24 year group (p=0.007); b- Difference between the 30-34-year-old group with the 20-24-year-old group (0=0.014). b- Although the Group Activity dimension was statistically significant. in the pairwise analysis no such difference was indicted. c- Difference between 35-39-year-old group with 25-29-year-old group (p=0.070) and 20-24-year-old group (0=0.008); Difference between 30-34-year-old group with 25-29-year-old group (p=0.044) 20-24-year-old group (0=0.028)

Other important findings concern the sports history of these athletes. In recent years, the growth in the number of street race events available, the increase in sports counseling companies, and the growing use of technology through sports apps have increased the number of people who enjoy racing.[12] These circumstances may explain the number of amateur triathletes who have entered the *Triathlon* from this sport, aiming to overcome personal goals and challenges. Findings from this investigation demonstrate the prevalence of professional triathletes who had swimming as their primary sport before *Triathlon*. Swimming is considered the modality that requires the most technique.[13] Thus, biomechanical factors influence swimming performance more than the ability to produce and release energy for displacement.[14] Thus, professional triathletes seem to have a better background in swimming because it mechanically favors their performance compared to cyclists and runners.

Triathletes also practice weight training, functional training, and pilates. It is already documented in the literature that muscle strengthening can help triathletes during training.[15,16] Professional athletes train more often during the day than amateur athletes, probably because of the greater need for positive results and exclusive dedication. Not surprisingly, the more races athletes participate in, the more likely they are to train all year round and adopt a more organized approach.

A large proportion of the triathletes investigated participate in *sprint triathlons*. The *Triathlon* with shorter distances attracts the public because of its intensity, speed, and the most accessible way to enter the sport. In general, triathletes plan to continue their participation in the sport and hope to increase the number of races in which they can compete. Most athletes intend to train for longer distances in the future in the *Ironman* and Half *Ironman* distances, possibly because of the challenge of the long distances and the success and visibility of the Ironman brand.[17]

Triathletes are mostly socioeconomically privileged, identified by the high incidence of individuals (88.6%) belonging to higher strata. Furthermore, it is assumed that due to the high cost of sports equipment, investment in professionals involved in the sport, race entries, and time spent in sports, triathletes need favorable conditions to remain physically active and competitive, suggesting similar income profiles in *triathlon athletes*.

As for professions, a higher incidence of sports-related professionals (physical education professionals and coaches) was found. Coaches have valued various sources of knowledge, most notably practicing experiences as an athlete and observing their students. On the other hand, professions such as business and the military have also been highlighted for their pursuit of personal challenges and permeable goals.[18]

In this study, there was a higher prevalence of male athletes, analogously to recent research findings.[19-21] Since women are subject to long working hours and divide/overlap professional needs and domestic/family responsibilities, private time becomes more flexible, making it impossible to dedicate the necessary time to train in the three sports. However, the number of women competing in *Triathlon* has steadily increased since the 1980s.[1,6] Factors leading to this growth include society's acceptance of physically active women, women experiencing a sporty lifestyle, and increased female participation in *endurance* events.

Although men are, the majority in the *Triathlon* women obtained higher mean scores for motivation in the dimensions "group activity", "emotion", and "technical competence". This investigation's results differ from a previous study where men and women of any age competing in *Triathlon* showed highly similar motivational profiles.[22] However, other authors have found disparities in results; while women tend to be more motivated for social purposes, men seek to overcome personal challenges and competition.[23] Thus, women seem to be more engaged with group practices that reinforce the feeling of sorority and share technical information and experiences among themselves to build collective sports knowledge.

When motivational differences between technical levels were analyzed, higher means were found in the "social recognition" and "competition" dimensions among professional athletes and higher means in the "physical fitness" dimension among amateur athletes. It is worth pointing out that professional athletes live with the daily search for positive results and the need to be linked to sponsors and clubs, directing their efforts towards competitions. On the other hand, amateur athletes may associate the *Triathlon* with physical fitness through the intense search for energy and vigor, directing efforts towards better health conditions and the development of an athletic body.

Regarding age, triathletes in the 20 to 29 age group seem to be more motivated for competitive purposes and in search of social recognition when compared to triathletes in the 30 to 45 age group. This is because young adult athletes are more intrinsically motivated and seek greater competitiveness.[24] Thus, factors such as greater financial stability, better established social relationships, and the search for new challenges may influence older adults' motives for triathlon.[25]

The present research findings advance existing studies since it presents a sociodemographic, socioeconomic, and motivational profile of Brazilian triathletes using a large sample for the first time. However, some limitations must be mentioned. All data were self-reported and collected online, which may limit the survey to people with internet access, and respondents may consider the form *spam* and not view the messages sent. Future studies are suggested to address motivation related to different variables, with different triathlete populations, such as children and adolescents, and at different performance levels. Another suggestion is to conduct longitudinal studies tote motivation's impact throughout life and its different appropriations.

CONCLUSION

Triathletes are mostly male, amateurs, aged 30-40, employed, and economically advantaged. Women show higher motivations in the dimensions of "group activity", "emotion" and "technical competence" when compared to men. Professional athletes are more motivated by "social recognition" and "competition" and less motivated by "fitness" when compared to amateur athletes. Triathletes aged 35 to 49 are less motivated by "social recognition" and "competition" when compared to athletes aged 20 to 29. These differences may be related to each individual's sporting background and social, family, and employment conditions.

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