

## The intervention of sports funding policies in the female permanence in sport: the case of Brazilian swimming

Mayara Torres Ordonhes<sup>1</sup> , João Victor Moretti de Souza<sup>1</sup> , Kátia Bortolotti Marchi<sup>1</sup> ,  
Fernando Renato Cavichioli<sup>1</sup> 

<sup>1</sup>*Departamento de Educação Física, Universidade Federal do Paraná, Curitiba, PR, Brazil.*

Associate Editor: Paulo Henrique Guerra , Universidade Estadual Paulista “Júlio de Mesquita Filho”, Instituto de Biociências, Departamento de Educação Física, Rio Claro, SP, Brazil.  
E-mail: paulo.guerra@unesp.br.

**Abstract - Introduction:** Although female participation in the Olympic Games has increased over time, this is not always the reality of Brazil. Specifically, with respect to swimming, even though the number of practitioners and competitors has increased over time, it is still possible to verify paradigms related to the presence of females in this sport. **Aim:** Based on this question, this study aimed to analyze the intervention of sports funding policies in the female permanence in Brazilian swimming. **Methods:** To perform the analysis, a sample of 324 participants (181 male participants and 143 female participants), including athletes and former athletes of swimming in Brazil, were selected randomly through the completion of an online questionnaire. When the interventions of sports funding policies for females in swimming are analyzed, the existence of financial subsidies contributes to continuity in the modality, increasing the age and category of abandonment of the athletes. However, compared with the male universe, this influence occurs less intensely, considering that in the case of the male gender, the financial resource manifested itself more decisively. **Conclusion:** This finding may indicate that it is not the absence of financial resources that make women not continue in sport but rather the existence of other sociocultural factors linked to difficulties related to the female gender, a consequence of the entire historical process related to female sports practice in Brazil.

**Keywords:** sport, gender, swimming.

### Introduction

There are several aspects that influence sports development, such as financial<sup>1,2,3,4,5,6,7</sup>, structural<sup>2,4,6</sup> and policy<sup>8,9,10,11</sup>, as well as sociocultural issues<sup>12,13,14</sup>. Among sociocultural issues, gender issues constitute an important area for reflection<sup>15,16,17,18,19</sup>. Gender scholars understand it as a social construction that goes beyond the binary universe - part of a classification of gender into two distinct and opposite forms: male or female - of classification between men and women<sup>15,16,20</sup>. According to Scott<sup>20</sup>, gender relations are ‘constitutive elements of social relations, based on differences between the sexes’. Therefore, discussions about gender do not refer exclusively to the differences between women's and men's sports, but rather aim to discuss the elements that exist based on these differentiations.

The aspects related to gender and sport are initially linked to a social process related to our society. According to Knijnik<sup>18</sup>, sometimes, various social apparatuses, such as the family and the school, interfere with the understanding of bodies and their gestures, interfering in the very construction of ways of being and acting; with this,

we can understand that in various courts, swimming pools, and gymnasiums, various conflicts are experienced within the sports scenario.

The body is the product of a socially constructed culture based on the environment and the way in which it develops<sup>17,18,19</sup>. In this context, scholars affirm that the human body is not a specialized body with a fixed nature but has malleability and the ability to develop a wide range of activities. However, the social construction that this body is part of influences their acquisition of skills, a social construction that occurs differently in the education of men and women<sup>15,16,17,18,19,20</sup>. Knijnik<sup>18</sup> reported that even biological differences can be influenced by historical and socially constructed aspects. These aspects can be present from the creation of boys and girls, perpetuating gender asymmetries and institutionalizing differences that are hierarchical and transformed into inequalities<sup>16</sup>.

Regarding the previous notes, it is worth noting that historical and socially constructed aspects may be capable of influencing gender asymmetries as a social construction, but this does not rule out the existence of specific differences related to muscle strength, speed, power, fat percentage, limb length, muscle development, and hormonal

influence, among other factors<sup>21,22</sup>. Therefore, we realize that when discussing gender relations, we cannot necessarily discuss the reflections of this hierarchical construction but rather discuss how these hierarchical relations were constructed to impact the existence of certain realities.

Notably, historically, the sports universe has shown itself to be a predominantly male space<sup>17,18</sup>. In the case of swimming, the modality has been present since the first edition of the modern Olympic Games held in Athens in 1896; however, it was only after the 1912 edition in Sweden that women were able to participate - approximately 16 years later - and only in 1932 did a Brazilian swimmer participate in the games: Maria Emma Lenk Zigler, better known as Maria Lenk, the first South American woman to participate in an edition of the Olympic Games<sup>23</sup>.

Although female participation in the Olympic Games has increased over time, this is not always the reality of Brazil. Specifically, with respect to swimming, even though the number of practitioners and competitors has increased over time, it is still possible to verify paradigms related to the presence of females in this sport. For example, between 2016 and 2019, approximately 88.89% of those included in the Federal Government's Sports Financing Program in the Podium category (with greater monetary benefits) were men, and only 11.11% were women, indicating a current gender inequality among those included in this category.

However, what are the factors that influence the spread of this scenario? Alternatively, what are the factors that could contribute to women's permanence in sports? Can the funding of these athletes contribute to increasing their permanence? Based on these questions, the objective of this study was to analyze the intervention of sports funding policies in the female permanence in Brazilian swimming.

## Methods

### *Characterization of the study and sample*

The present study used 324 participants as a sample (181 male and 143 female participants), including athletes and former athletes of the Brazilian swimming modality (Ethics Committee of the Federal University of Paraná, CAAE n. 88770618.4.0000.0102, opinion n. 2.748.001), who were randomly selected by completing an online questionnaire.

### *Procedures and analysis*

The questionnaire was developed in partnership with the Sports Intelligence Research Institute (Inteligência Esportiva - IPIE) through internal validation with professionals in the area. For this validation, the professionals consulted assigned scores from one to three for each questioning proposal, one for irrelevant and three for relevant.

In addition, a field for general observations regarding the questionnaire was made available. This process was based on Gonçalves<sup>24</sup> notes on the validation of instruments designed to measure aspects related to sport.

The questionnaire has 14 general questions, six specific questions for athletes and ten specific questions for former athletes and was made available for completion between February 24, 2022, and April 28, 2022. The questionnaire was filled out anonymously, so all the information obtained was translated into a coded form, maintaining the confidentiality of the participants and respecting the ethical aspects of the research.

The link (QRCode) used to fill out the questionnaire was shared with the Brazilian Confederation of Aquatic Sports (CBDA) and made available on the website of the confederation and the Sports Intelligence Research Institute, as well as on associated social networks. In addition to online dissemination, posters were spread in specific competitions of the modality. In this way, it is not possible to quantify how many people the questionnaire was made available to, since any individual who has been a federated athlete at some point in their life could participate.

After the end of the data collection, the answers were exported and entered SPSS software (*IBM Corp, Armonk, NY, USA*) version 25 to perform the statistical analysis of the data. In this study, age and dropout category were considered dependent variables, whereas financial investment and paid activity were considered independent variables. Such choices are justified considering the objective of the present study and the intention of verifying the intervention of financial resources in the permanence of women in sport (considered in this specific case as late abandonment of the sport).

In addition to descriptive statistics (frequencies), the Kolmogorov-Smirnov test (normality test when the sample has  $n > 50$ ), Mann-Whitney U test and Spearman correlation were used<sup>25,26</sup>. The size of the effect is calculated via Cohen's  $d$  (0.20, small; 0.50, medium; and 0.80, large).

## Results

### *Characterization of the profiles of athletes and former athletes*

The sample consisted of 324 participants, consisting of 179 athletes (who still practice the modality) and 145 former athletes (who no longer practice the modality); thus, no subject was excluded from the analysis. Among the total number of participants, 143 were female ( $f = 44.14\%$ ), and 181 were male ( $f = 55.86\%$ ) (Figure 1).

In terms of the age of the research participants, the lowest age reported was ten years, and the highest was 71 years. The average age of the participants was 27 years. The following figure shows the distribution of participants according to education level (Figure 2).

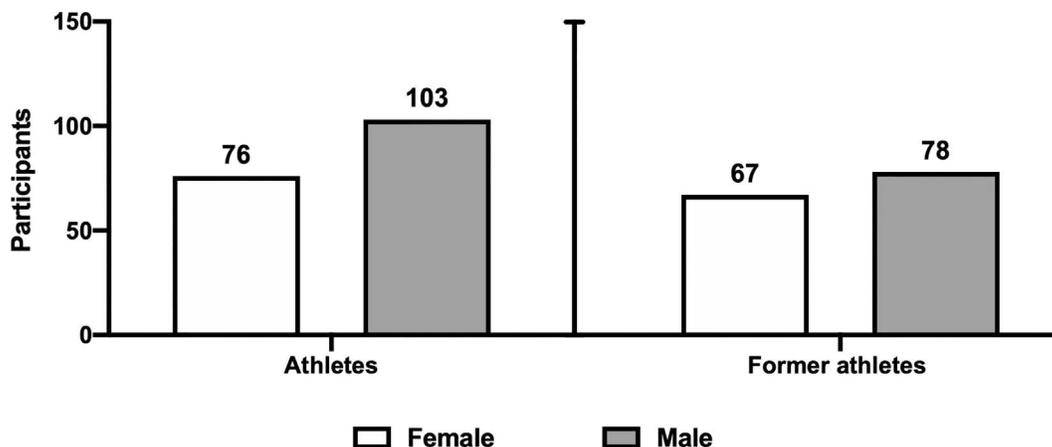


Figure 1 - Sample distribution according to gender.

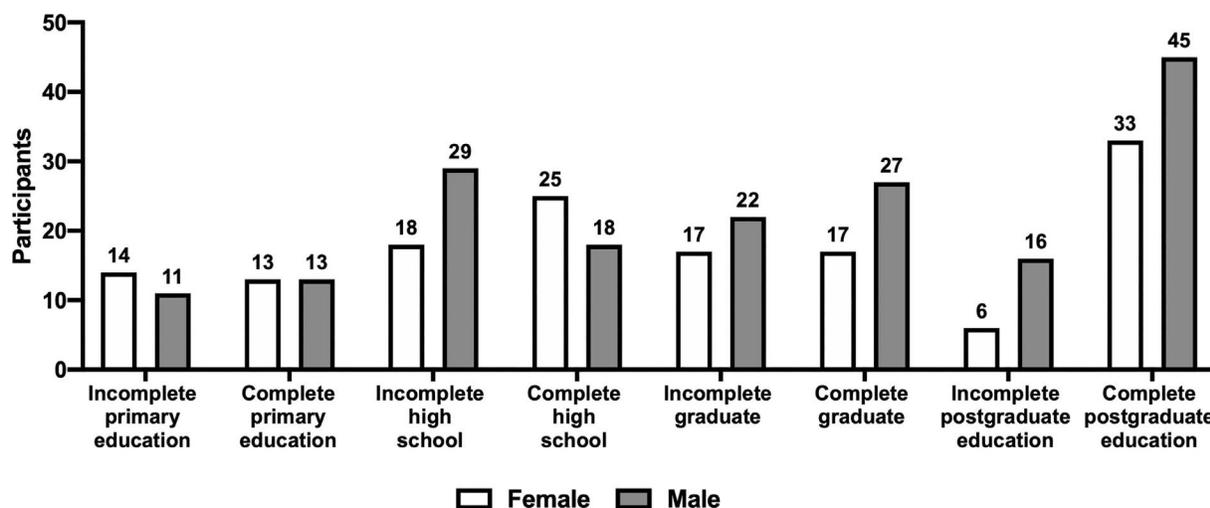


Figure 2 - Sample distribution according to education level.

The data indicate that-in general-most of the athletes and former swimming athletes who participated in the research had higher education levels, with most of the sample having completed graduate studies. The following figure shows the distribution of participants according to family income (Figure 3).

The smallest part of the sample has a family income of up to three Brazilian minimum wages (19.13%), whereas the other participants had higher family incomes, with 28.08% with an income of three to six minimum wages and 25.30% with an income of seven to eleven minimum wages and 27.46% above eleven minimum wages (the Brazilian minimum wage on the date of the survey was approximately \$230 dollars).

Regarding the category in which the research participants were when they started competing in the swimming modality in the performance manifestation (registered in a state federation), it was observed a predominance of the start between 9 and 10 years old (n = 112).

On the other hand, about 97 started between 11 and 12 years old, 61 started from 13 to 14 years old, 31 started between 15 and 16 years old, and another 23 started after 17 years old.

When questioned about the reasons that influenced the beginning of the practice of the modality, the family suggestion and the need to practice a physical activity in free time were the most evidenced reasons, including a predominance over suggestions from friends and teachers, medical indications and the possibility of participating in competitions and trips.

With respect to the characterization of the types of entities that athletes have already represented in their sports trajectory in the manifestation of performance, approximately 42.36% of the general sample of participants (female and male) already represented clubs, 18.95% educational establishments, 17.20% city halls, 11.31% academies and 10.19% associations - it is important to emphasize that the same research participant may

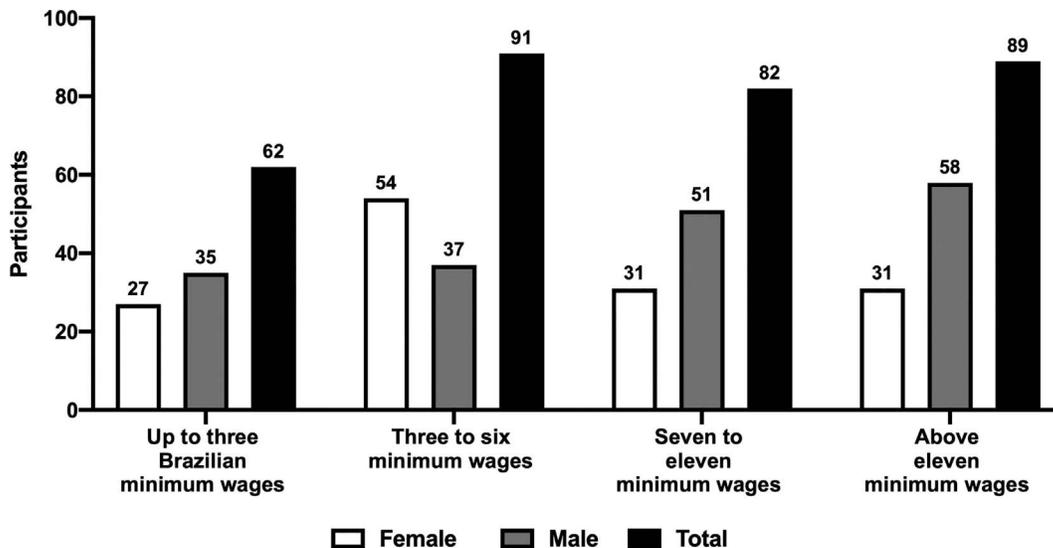


Figure 3 - Sample distribution according to family income.

have represented more than one type of institution (Figure 4).

When the existence of family incentives in the sport trajectory was questioned, both athletes and former athletes reported the existence of family support (93.29% for athletes and 97.24% for former athletes). In addition to family support, 16.4% of the athletes said they had received financial resources, and 17.9% reported having performed paid activities as athletes did. The following figure shows the distribution of participants according to their performance of paid activity during the sports trajectory (Figure 5).

When questioning the participants (former athletes) about what their category was when they abandoned the swimming modality in the performance manifestation

(registered in a state federation), it was observed a predominance of abandonment after 17 years of age (n = 107).

When the reasons that influenced the abandonment of the practice of the modality were questioned, the need to focus on studies (f = 47.6%), the lack of time to train (f = 29.0%), the lack of financial resources (f = 24.8%) and the dissatisfaction with the sports results (f = 17.9%) were the reasons most evidenced as “very influential” for giving up (the former athletes answered how much each of the reasons influenced them to abandon the sport: it did not influence, it influenced little, it influenced reasonably, it influenced a lot).

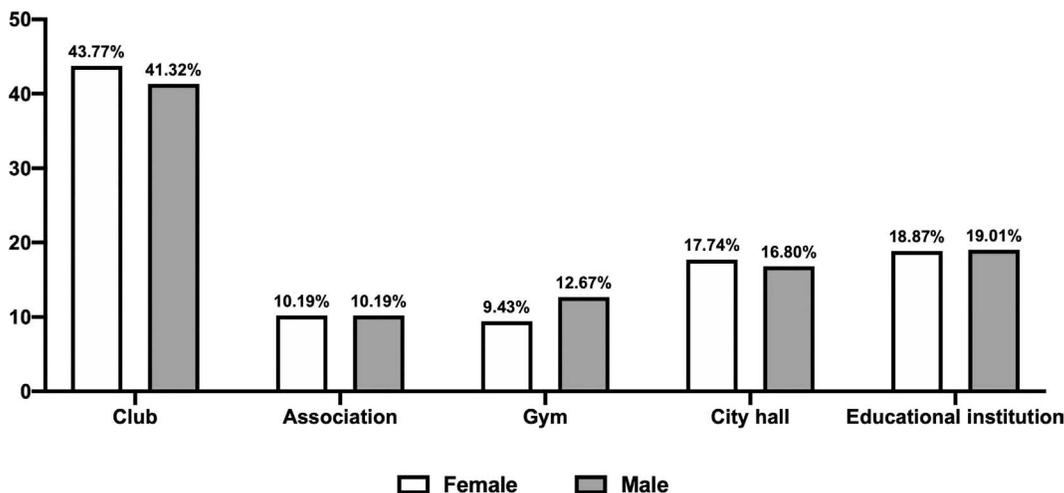


Figure 4 - Type of entities already represented by the athletes in the sample. Considering that the same athlete may have represented more than one type of entity during his career, it was decided to carry out this detailing by means of percentages.

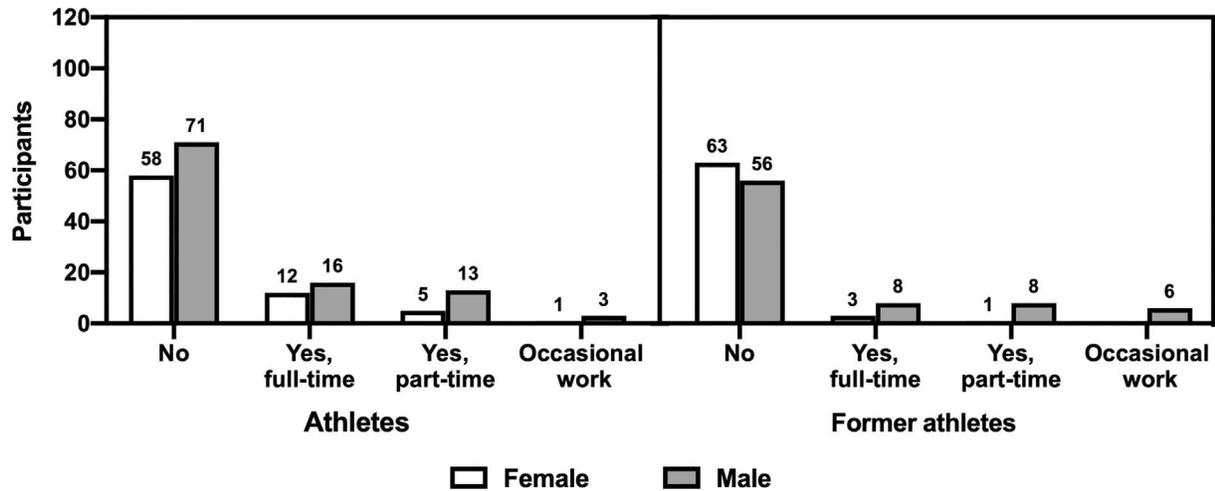


Figure 5 - Distribution of the sample according to the performance of paid activity.

*Intervention of sports financing policies in the permanence of women in sports*

After the profiles of the athletes and former swimming athletes are characterized, several specific statistical tests for former athletes are presented to verify the intervention of funding in increasing female permanence in sport.

Initially, the Kolmogorov-Smirnov test ( $n > 50$ ) was performed to ensure the normality of the data and, subsequently, to identify the statistical tests that would be performed - parametric or nonparametric.  $p < 0.005$  was obtained; therefore, the distribution of the data was non-parametric.

When comparing the age and dropout category indices between former athletes who received some type of financial resource during their trajectory and those who did not, it can be verified, through the Mann-Whitney U test, that there were statistically significant differences ( $U = 1498.000$ ,  $p < 0.05$  for dropout age and  $U = 1424.000$ ,  $p < 0.05$  for dropout category), where those who received it (MD = 20.00 and AI = 6 for age and MD = 7.00 and AI = 2 for category) had higher rates than those who did not receive it (MD = 18.00 and AI = 4 for age and MD = 5.00 and AI = 2 for category) (Table 1).

An analysis of the entire group of former athletes clearly revealed that having received financial resources during the sports trajectory influenced the increase in age and dropout category. Next, the breakdown of data according to gender will be presented to highlight specific differences between the groups (Table 2).

In the case of specific data for the male gender, it is evident that there were statistically significant differences between the indices of age and category of abandonment between former athletes who received financial resources during their trajectory and those who did not ( $U = 413,000$ ,  $p < 0.05$  for age of abandonment and  $U = 337,000$   $p < 0.05$  for category of abandonment).

Those who received (MD = 22.00 and AI = 6 for age and MD = 7.00 and AI = 1 for category) had higher rates than those who did not receive (MD = 18.00 and AI = 4 for age and MD = 5.00 and AI = 3 for category). The following table presents the specific data for females (Table 3).

When comparing the age and dropout category indices between former female athletes who received financial resources during their trajectory and those who did not, there were statistically significant differences

Table 1 - Mann-Whitney test results (general for former athletes).

Mann-Whitney U Test stats - overall (former athletes)		
	Age of abandonment	Dropout category
<i>U</i>	1498,000	1424,000
<i>p</i>	0.000	0.000
Grouping variable: Receipt of financial resources.		
Descriptive		
Age of abandonment		
Did you receive financial resources?		
Yes	Median	20,00
	Interquartile range	6
No	Median	18,00
	Interquartile range	4
Dropout category		
Did you receive financial resources?		
Yes	Median	7,00
	Interquartile range	2
No	Median	5,00
	Interquartile range	2

**Table 2** - Mann-Whitney test results (male).

<b>Mann-Whitney U Test stats - male</b>		
	<b>Age of abandonment</b>	<b>Dropout category</b>
<i>U</i>	413,000	337,000
<i>p</i>	0.002	0.000
Grouping variable: Receipt of financial resources.		
Descriptive		
Age of abandonment		
Did you receive financial resources?		
Yes	Median	22,00
	Interquartile range	6
No	Median	18,00
	Interquartile range	4
Dropout category		
Did you receive financial resources?		
Yes	Median	7,00
	Interquartile range	1
No	Median	5,00
	Interquartile range	3

**Table 3** - Mann-Whitney test results (female).

<b>Mann-Whitney U Test stats - women</b>		
	<b>Age of abandonment</b>	<b>Dropout category</b>
<i>U</i>	347,500	367,000
<i>p</i>	0.034	0.041
Grouping variable: Receipt of financial resources.		
Descriptive		
Age of abandonment		
Did you receive financial resources?		
Yes	Median	18,00
	Interquartile range	3
No	Median	17,00
	Interquartile range	2
Dropout category		
Did you receive financial resources?		
Yes	Median	5,00
	Interquartile range	2
No	Median	5,00
	Interquartile range	1

( $U = 347.500$ ,  $p < 0.05$  for dropout age and  $U = 367.000$   $p < 0.05$  for the dropout category), whereas those who received financial resources during their trajectory (MD = 18.00 and AI = 3 for age and MD = 5.00 and AI = 2 for category) had higher rates than those who did not receive financial resources (MD = 17.00 and AI = 2 for age and MD = 5.00 and AI = 2 for category).

In general, there are statistically significant differences in both the general and gender-specific analyses. However, it is evident that the male indices were higher than the female indices, demonstrating that having received financial resources during the sports trajectory was more decisive for the increase in the permanence of the modality in the male group.

To verify whether there is any statistical relationship between having performed paid activity while being an athlete and the period of abandonment, Spearman's correlation test was performed (initially general for all former athletes and, later, specific for each gender) (Table 4).

Through the test, it was observed that, in the general test, there were statistically significant values, with a negative and significant correlation between the exercise of paid activity and age ( $r = -0.255$ ,  $p = 0.002$ ) and the category of dropout ( $r = -0.174$ ,  $p = 0.036$ ).

Thus, it is evident that, in general, an increase in the category of exercise of paid activity is associated with a reduction in age and the category of dropout. However, when performing the gender-specific test, it is possible to observe the existence of an association only in the male test. This result shows that, in the case of women, the increase in workload during the sports trajectory did not influence the anticipation of abandonment, indicating that other factors may have had a greater influence than in male athletes.

## Discussion

The objective of this study was to analyze the intervention of sports funding policies in the female permanence in sport.

**Table 4** - Correlations between the exercise of paid activity and the age and category of dropout.

		<b>Age of abandonment</b>		<b>Dropout category</b>	
		<i>r</i> <sup>a</sup>	<i>p</i> <sup>b</sup>	<i>r</i>	<i>p</i>
Exercise of paid activity	General test	-0.255***	0.002	-0.174**	0.036
	Male test	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
		-0.267**	0.018	-0.159	0.164
	Women's test	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
		-0.109	0.385	-0.094	0.452

<sup>a</sup>Correlation coefficient.

<sup>b</sup>P value (a statistical parameter that indicates whether a given hypothesis should be rejected).

\*\*The correlation is significant at the 0.05 level.

\*\*\*The correlation is significant at the 0.01 level.

nence in Brazilian swimming. Among the reasons evidenced by former athletes as influential for abandoning performance swimming, it is possible to perceive the need for some athletes to move away from the sport to dedicate themselves to other activities, especially in search of financial resources, which results in less time dedicated to the sport. When the intervention of sports policies for financing women's permanence in swimming is analyzed, it is perceived that the existence of financial subsidies contributes to continuity in the modality, increasing the age and category of abandonment of athletes. However, compared with the male universe, this influence is perceived to occur less intensely, considering that in the case of the male gender, the financial resource manifested itself in a more decisive way. This finding may indicate that the absence of financial resources that makes women not continue in sports, but rather the existence of other factors.

This finding corroborates Dunning and Maguire's<sup>27</sup> point, when they argue that the existence of specific pressures in favor of sports practices manifests in the male universe and is rarely explored in the female universe, a fact that often occurs due to the numerous obstacles that do not exist in the male universe compared with the female universe. Botelho-Gomes, Silva, Graça and Queirós<sup>28</sup> present some of the obstacles that exist in the female universe, such as the characterization of sports activities associated with gender from school physical education. Nevertheless, in relation to men, it is possible to mention the distancing of women from sports space during their youth, in addition to the social function that women have in marriage and the attributions of motherhood<sup>29</sup>.

It is also possible to draw attention to the possible contribution of the symbolic violence existing in sports relations in our society through the existence of male domination<sup>30</sup>. In the case of swimming, we have the following situation: female swimmers tend to abandon the swimming modality earlier in performance than male swimmers do. This fact influences the predominance of male athletes and results, as well as the number of athletes considered by the largest incentive program for athletes in the country (Bolsa-Atleta Pódio program). However, in addition to simply discussing this difference, it is important to discuss the reasons that led to the existence of this situation because only in this way can a certain change occur in the long term.

According to Corsino and Auad<sup>16</sup>, "It is important to emphasize that men and women go through a certain training of the body, and even of their behavior, already in childhood, extending to adolescence". Therefore, by stating these issues, the maturational differences between men and women are not ignored but rather understood from the idea that the body is an expression of culture, formed and influenced by it<sup>16</sup>.

Based on this quote from Jocimar Daolio<sup>31</sup>, who also addressed the work of Corsino and Auad<sup>16</sup>, the upbringing of boys and girls in Brazil-unfortunately-contributes to the existence of these gender differences. For example, in Brazil, which is known worldwide as the "country of football", approximately 85.6% of the practitioners of this sport are male, and only 14.4% are female<sup>15</sup>. Such information may indicate that the difficulties related to gender in sports are not specific to certain modalities but are present in the Brazilian sports universe in general, as well as in the swimming modality.

Therefore, it is understood that gender acts as a social representation that constructs identities and that the characteristics evidenced in different sports become hierarchical differences between genders<sup>15,16</sup>.

According to Altmann<sup>15</sup>, the practice of sports by women can be characterized as a resistance movement surrounded by specific conflicts that directly impact existing power relations. For the author, throughout history, women have had to conquer the right to be in the sports universe, continuously seeking to deny the hypothesis of fragile bodies, bodies that were prohibited from practicing modalities said to be "incompatible with their nature". Historically, men have been encouraged to practice adventure, power, strength and challenge; however, sporting spectacles are encouraged only to women, as long as they do not abandon their "feminine essence"<sup>17</sup>.

Corroborating Corsino and Auad<sup>16</sup>, Altmann<sup>15</sup> stated that this resistance movement occurs from childhood, when the education of the bodies of boys and girls is usually manifested in a significantly different way (from encouragement to practice, the delineation of the indicated clothing and restricted learning opportunities). In general, girls are not as encouraged to practice sports as boys are and, generally, those who continue to practice sports in adulthood initially needed-even without initial external encouragement-to prove that they had the necessary skills to be considered "fit" for this universe. This barrier is non-existent in the case of boys, who receive incentives even before starting the practice itself. In fact, usually, physically skilled girls tend to "conquer" the possibility of playing sports with boys; however, boys who do not demonstrate physical skill are "demoted" to practice with girls<sup>15</sup>.

On the basis of these questions, it is evident that there is a certain degree of male domination<sup>30</sup> - still present -in the sports universe that, even with the passage of time and with the "fall" of formal prohibitions related to women's access to sport, contributes to the existence of symbolic violence in this universe, which consequently contributes to the difference between the characteristics of female and male practices. According to Bourdieu<sup>30</sup>,

Even when external pressures are abolished and formal freedoms - the right to vote, the right to education, and access to all profes-

sions, including political ones - are acquired, self-exclusion and "vocation" (which "acts" both negatively and in a negative way). positive ones) come to replace the express exclusion: the rejection of public places, which, when explicitly stated [...] condemns women to discrimination of spaces and makes the approximation of a male space, such as the place of assemblies, a terrible test, can also take place in other places, in an almost equally effective way, through a kind of *socially imposed agoraphobia*, which can persist for a long time after the most visible prohibitions have been abolished and which leads women themselves to exclude themselves from the agora (p. 71).

Notably, even if the practice of sports is no longer prohibited for women, there are still reflections of these prohibitions, reflections that have marked the signs, habits and power relations of this universe until the present day. The practice of women's sports is sometimes characterized as a practice of resistance, which is based on power relations and the reflexes of Brazilian social culture. Thus, one of the objectives of physical education and sport in Brazil is to modify this culture, with the aim of providing physical education to bodies, regardless of their gender. For this purpose, it is essential to modify existing pedagogical practices and, in addition, create specific public policies aimed at solving this highlighted problem.

In the present study, in addition to the finding related to the impact of receiving funds on the permanence of athletes in the modality, through the data analyzed, it can be observed that the increase in the exercise of paid activity was associated with a reduction in age and the category of abandonment only for male athletes, showing that, in the case of women, increasing the workload during the sports trajectory did not influence the anticipation of abandonment. These data may indicate that there are other determining factors for female abandonment in the sport, such as "nonpalpable" factors, which do not refer to financial resources but may be linked to the sociohistorical process that affects several sports.

Even with such notes, biological determinism sometimes ends up gaining space to argue and naturalize such differences between men and women in the sports universe, linking the existing differences in the number of sports participations and results as a consequence of physical characteristics, discarding the entire historical and sociological process related to this theme<sup>17</sup>.

Although the study presents relevant findings, the fact that it focuses on a single sport modality can be considered a limitation. Thus, it is suggested to expand this analysis and conduct further research that seeks to analyze distinct sporting realities.

### Final considerations

The present study aimed to analyze the intervention of sports funding policies in the female permanence in Brazilian swimming. Through data analysis, it was shown that the profile of swimming athletes and former athletes

consists predominantly of individuals with schooling and high family income, who mostly started practising the sport in the manifestation of performance in the junior category (from 17 to 19 years old), as a result of family suggestions and the need to practice physical activity in their free time. In general, it was possible to perceive the existence of family encouragement during the sports trajectory of the athletes and former athletes belonging to the research. With respect to the abandonment of sports practice in the manifestation of performance, the predominance of the senior category (More than 20 years old) was noted for reasons related to the need for study, lack of time to train and financial resources, and dissatisfaction with the results of the sport.

When the intervention of sports policies related to the permanence of women in sports is analyzed, financing contributes to the continuity of women in the sport, increasing the age and category of abandonment of athletes; however, this contribution was also observed in the male reality - and in a more significant way - although the financial resource contributes, it is not its absence that makes women abandon the sport but rather the existence of other sociocultural factors linked to difficulties related to the female gender, a consequence of the entire historical process related to the practice of female sports in Brazil.

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#### *Corresponding author*

Mayara Torres Ordonhes. Avenida Coronel Francisco H. dos Santos, Curitiba, PR, Brazil.  
E-mail: mayaraordonhes@ufpr.br.

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