

## TRAINING CONDITIONS AND GENDER INEQUALITY PERCEPTION AMONG BEACH HANDBALL ATHLETES

## CONDIÇÕES DE TREINAMENTO E PERCEPÇÃO DE DESIGUALDADE GÊNERO ENTRE ATLETAS DE HANDEBOL DE PRAIA

Higor Santos Fonseca<sup>1,2</sup>, Nathalia Nascimento da Silva<sup>2,3</sup>, Giovanna Xavier de Moura<sup>2</sup>, Ágatha Graça<sup>2,3</sup>, Arthur Garcia de Sales<sup>2</sup>, Matheus Amarante do Nascimento<sup>1,2</sup>, Fernando Augusto Starepravo<sup>2</sup>

<sup>1</sup>State University of Paraná, Paranavaí, PR, Brazil.

<sup>2</sup>State University of Maringá, Maringá, PR, Brazil.

<sup>3</sup>Unifatecie University Center, Paranavaí, PR, Brazil.

## RESUMO

O presente estudo objetivou analisar a associação entre o gênero dos atletas e a percepção de desigualdades nas condições de formação esportiva, remuneração e profissionalização no handebol de praia. Para tanto, foi realizada uma pesquisa descritiva exploratória com abordagem quantitativa, aplicada a 77 atletas participantes do Circuito Paranaense de Handebol de Praia, em 2024. A coleta de dados ocorreu por meio de um questionário estruturado e a análise estatística foi conduzida com o teste de Qui-quadrado. Os resultados evidenciaram que o gênero está significativamente associado à percepção de desigualdades, especialmente no que se refere à remuneração e à profissionalização. As mulheres relataram maior frequência de experiências desiguais em comparação aos homens, confirmando que a igualdade formal ainda não assegura equidade real na modalidade. Os achados ressaltam a importância de políticas públicas esportivas que promovam justiça de gênero e ampliem as oportunidades no handebol de praia.

**Palavras-chave:** handebol, equidade de gênero, esportes, profissionalização.

## ABSTRACT

This study aimed to analyze the association between athletes' gender and the perception of inequalities in sports training, remuneration, and professionalization in beach handball. A descriptive and exploratory research with a quantitative approach was conducted, involving 77 athletes who participated in the 2024 Paraná Beach Handball Circuit. Data were collected through a structured questionnaire, and statistical analysis was performed using the Chi-square test. The results showed that gender is significantly associated with the perception of inequalities, particularly regarding remuneration and professionalization. Female athletes reported a higher frequency of unequal experiences compared to male athletes, confirming that formal equality does not yet ensure real equity within the sport. The findings highlight the importance of public sports policies that promote gender justice and broaden opportunities in beach handball.

**Keywords:** handball, gender equity, sports, professionalization.

## Introduction

Emerging sports modalities have gained increasing prominence as they adapt to diverse environments and game formats, reshaping traditional practices and offering new competitive experiences<sup>1,2</sup>. In this context, beach handball stands out as a relatively recent discipline when compared to more traditional sports<sup>3</sup>. Originating in the mid-1990s, it quickly garnered recognition and popularity across all continents. Although it shares certain elements with indoor handball, beach handball has distinct rules, such as being played on sand with smaller teams and a unique scoring system that awards two points for aerial goals or 360° shots<sup>4</sup>.

The current sports landscape is undergoing significant transformations, particularly regarding women's participation and representation<sup>5</sup>. Historically, women have faced considerable lag and persistent inequalities compared to men; however, notable progress has been made in terms of visibility and opportunities for female athletes<sup>6</sup>. Moura<sup>7</sup> highlights that, despite advancements, women still receive limited media recognition across various domains, which may hinder the potential for girls to find inspiration to pursue sports, regardless of the discipline. Representation plays a crucial role in demonstrating to young women that a career

in sports is a viable path<sup>8</sup>, encouraging them not only to engage in this sphere but also to feel confident and secure in an environment often dominated by men.

Despite improvements in the sporting landscape for women, significant barriers and challenges persist, both during the initiation phase and throughout professionalization<sup>9–12</sup>. The development of high-performance athletes requires the integration of sports training with academic or professional education<sup>13</sup>. Harmonizing these spheres is essential to promote sustainable and holistic development<sup>14,15</sup>.

Beyond the challenges and unequal opportunities within the sports environment, athletes also face the difficulty of balancing educational responsibilities with athletic careers<sup>16</sup>. This dual commitment demands that they fulfill academic or professional obligations while dedicating themselves intensively to training and competition. Achieving this balance is crucial for their development as both students and athletes, ensuring success in both domains. As Costa et al.<sup>14</sup> emphasize, the dual career requires student-athletes to reconcile academic commitments with training, meeting the simultaneous demands of two formative institutions: school/university and sport.

While studies on gender inequality are common in established sports such as soccer and volleyball, research exploring this phenomenon in emerging sports like beach handball remains scarce. This lack of specific investigations limits the understanding of inequality dynamics in growing modalities, where women often face symbolic and structural barriers that may not be reflected in objective indicators but nonetheless impact their continuity and professionalization<sup>7,17</sup>. Moreover, studies suggest that formal equality within sports structures often conceals subtle forms of exclusion, reinforcing the need for analyses focused on the context of beach handball<sup>18,19</sup>. In light of this, the present study aims to analyze the association between athletes' gender and their perceptions of inequalities in training conditions, remuneration, and professionalization in beach handball.

It was approved by the Research Ethics Committee of the State University of Maringá (approval number: 63179516.0.0000.0104) and conducted in accordance with the ethical principles outlined in the Declaration of Helsinki.

## Methods

This study is characterized as a cross-sectional, exploratory, and descriptive research with a quantitative approach<sup>20</sup>. It was approved by the Research Ethics Committee of the State University of Maringá (approval number: 63179516.0.0000.0104) and conducted in accordance with the ethical principles outlined in the Declaration of Helsinki.

### *Participants*

The sample comprised 77 athletes who participated in the Circuito Paranaense de Handebol de Praia (Paraná Beach Handball Circuit), held in São José dos Pinhais, Paraná, during the 2024 Jogos de Aventura e Natureza (Adventure and Nature Games), Capital and Metropolitan Region stage. These athletes voluntarily agreed to participate in the study, including 35 men (mean age:  $23.3 \pm 5.35$  years) and 42 women (mean age:  $25.7 \pm 7.72$  years). All participants signed an informed consent form after being briefed on the study's objectives and procedures.

### *Data Collection Instrument*

To gather data on the athletes' socioeconomic profiles, sports backgrounds, and current training conditions, a structured questionnaire containing both open- and closed-ended questions was employed. Entitled "Questionnaire for Athletes: Training, Development, and

Training Conditions”, the instrument was developed based on three thematic axes to encompass various dimensions of the participants’ sporting trajectories. Its structure and questions were adapted from the study by Martins, Silva, and Souza<sup>21</sup>, which investigated the sporting trajectory, dual career, and socioeconomic aspects of futsal athletes. Notably, the original version of their questionnaire was not available in the article; thus, the adaptation was based on the methodological description and thematic axes presented in their study.

The first axis focused on the athletes’ socioeconomic profiles, including age, gender, education level, parents’ occupations, and salary range, enabling a contextualized analysis of their social conditions. The second axis addressed sports initiation and specialization, with questions about the age of onset, initial training duration, and challenges faced during development, aiming to identify potential gender inequalities. The third axis examined current training and remuneration conditions, as well as perceptions of professionalization in the sport, weekly training hours, satisfaction with remuneration, and experiences in balancing sport with other commitments.

The questionnaire was administered during an official competition, with voluntary participation from all present athletes. Although designed to be self-explanatory, researchers were available to provide support and clarifications during its completion.

### Statistical Analysis

Following data collection, the information was organized in a spreadsheet using Excel (Microsoft Office® LTSC Professional Plus 2021). Data distribution was assessed using the Shapiro–Wilk test. Quantitative data were analyzed using descriptive statistics and expressed as percentages, means, and standard deviations, stratified by gender. To examine associations between questionnaire responses and athletes’ gender, the Chi-square test was applied. Open-ended responses underwent categorical content analysis, with independent categorization by two evaluators; disagreements were resolved through discussion until consensus was reached. Data analysis was conducted using Jamovi® software, version 2.3.26. A significance level of  $p \leq 0.05$  was adopted for all analyses, in line with standard scientific research practices.

## Results

The study included 77 beach handball athletes, comprising 35 men (mean age:  $23.3 \pm 5.35$  years) and 42 women (mean age:  $25.7 \pm 7.72$  years). Table 1 presents the results of the association analyses between participants’ gender and their perceptions of inequalities in sports training, remuneration, and professionalization, revealing statistically significant differences in certain aspects. For the question “Did you perceive any differences in your sports training compared to athletes of the opposite gender?”, a significant association with participants’ gender was observed ( $\chi^2 = 9.00$ ;  $p = 0.003$ ). Among men, 97.1% ( $n = 34$ ) answered “Yes,” whereas among women this proportion was 71.4% ( $n = 30$ ).

**Table 1.** Association between gender and variables related to training conditions of beach handball athletes.

athletes.					
Variables	Gender		n	X <sup>2</sup>	P
	Men	Women			
Difference in sports training compared to the opposite gender?					
Yes	34	30	64	9.00	0.003
No	1	12	13		
Had the same opportunities as the opposite gender in sports training?					

Yes	26	25	51	1.86	0.173
No	9	17	26		
<b>Receives remuneration?</b>					
Yes	11	12	23	0.08	0.785
No	24	30	54		
<b>Perceives difference in remuneration?</b>					
Yes	6	20	26	7.93	0.005
No	29	22	51		
<b>Perceives difference in professionalization?</b>					
Yes	5	21	26	10.9	< 0.001
No	30	21	51		
<b>Balancing dual/triple career (work/study/training)</b>					
Studies and trains	6	3	9	3.69	0.297
Works and trains	13	14	27		
Works, studies, and trains	16	23	39		
Only trains	0	2	2		

Source: The Authors.

On the other hand, for the question “Did you have the same opportunities in your sports training compared to the opposite gender?”, no statistically significant association was identified between gender and response ( $\chi^2 = 1.86$ ;  $p = 0.173$ ). Nevertheless, a smaller proportion of women (59.5%) reported having had the same opportunities compared to men (74.3%). Regarding athletes’ remuneration, the variable “Do you receive remuneration?” showed no significant association with gender ( $\chi^2 = 0.08$ ;  $p = 0.785$ ). Both men and women reported similar rates of remuneration (31.4% and 28.6%, respectively).

In contrast, the perception of gender-based inequality in remuneration showed a significant association with athletes’ gender ( $\chi^2 = 7.93$ ;  $p = 0.005$ ). Only 17.1% of men perceived differences in remuneration, whereas among women this proportion rose to 47.6%. Finally, the perception of inequality in professionalization was also significantly associated with gender ( $\chi^2 = 10.9$ ;  $p < 0.001$ ). Only 14.3% of men reported perceiving such inequality, compared with 50% of women.

## Discussion

The findings of this study reveal a complex configuration regarding the training and development conditions of male and female athletes in beach handball. Despite the apparent parity in quantitative variables such as declared remuneration range, age of sport initiation, and weekly training hours, a significant difference was observed in women’s perceptions of structural and symbolic inequalities throughout their sporting trajectories.

The finding that 80.9% of women reported differences in sports training, in contrast to only one report among men, highlights a perception of gender inequality that is not directly reflected in objective data but strongly emerges in women’s subjective experiences. Qualitative responses reinforce this perception, emphasizing lower encouragement, limited access to adequate infrastructure, and reduced visibility of women’s teams. Such factors are consistent with the literature, which points to the underrepresentation and unequal institutional support for women in sports<sup>7,17</sup>. Furthermore, national studies show that this perceptual asymmetry is related to forms of symbolic and invisible violence within the sports environment, which naturalize the devaluation of female athletes<sup>19</sup>. These forms of violence are not restricted to physical aggression but also include stigmatization, media comments on appearance, and reduced institutional support—factors that reinforce stereotypes and directly affect women’s retention in sporting careers.

At the same time, it is important to highlight that the data indicate a certain balance between genders in aspects such as current training load and formal remuneration, at least with regard to the reported values. This apparent equity may reflect a progressive democratization of objective conditions, particularly in emerging sports with lower commercial expression, such as beach handball. However, this quantitative balance does not automatically translate into equality of opportunities or professional recognition, as evidenced by women's perceptions of remuneration and professionalization.

The results also align with investigations showing that formal equality within sports structures often conceals deeper dynamics of symbolic, institutional, and cultural exclusion. Several recent studies indicate that the lack of female representation in leadership positions, the unrecognized burden of emotional labor (such as self-management of one's career and promotion of the sport), and the imposition of gender stereotypes in the sporting environment reinforce the persistence of inequality between male and female athletes<sup>9,18</sup>. Even in contexts where numerical parity or equality in basic training conditions is present, women often report a lack of recognition, limited opportunities for growth, and constant pressure to prove their legitimacy in historically male-dominated spaces. Studies by Goellner<sup>22,23</sup> demonstrate that gender inequalities in sport are structural, historically constructed, and reinforced by the patriarchal logic that underpins sporting practices. When analyzing the context of handball<sup>24</sup>, these authors emphasize that the professionalization of women remains conditioned by reduced investment and limited visibility, which, in turn, reinforces the perceptions expressed by the athletes in this study regarding inequalities in remuneration and professional recognition. In this sense, the experiences reported here resonate with the broader Brazilian sports context, in which female protagonism continues to be systematically undervalued.

It is important to emphasize that training conditions, although showing similar quantitative indicators between men and women, cannot be analyzed solely through the lens of training load or competition participation. As argued by Altmann<sup>25</sup> and Devidé<sup>26</sup> women's experiences in sport are shaped by structural asymmetries expressed in differential access to qualified coaches, adequate infrastructure, and technical support. Recent studies reinforce that resource scarcity affects both genders in emerging sports such as beach handball; however, for women, this scarcity is compounded by symbolic and cultural barriers, making their sporting trajectories more restrictive<sup>24,27</sup>. Goellner<sup>22,23</sup> further adds that these inequalities are not merely circumstantial but structural, as they reflect the very historical logic of women's exclusion from the sporting field. Therefore, understanding training conditions requires moving beyond objective metrics, recognizing that gender inequalities are also materialized in subjective experiences, social expectations, and the lower institutional valuation of women's sporting careers.

The discrepancy between men's and women's perceptions regarding equality in remuneration and professionalization was one of the most striking findings of the study. While most men reported not perceiving differences, women, in their open-ended responses, described recurrent experiences of inequality, both in financial recognition and in invitations to events, sponsorship support, and institutional visibility. These findings reiterate that gender inequalities in sport are not limited to access, but are also manifested in symbolic dynamics of recognition, legitimacy, and belonging.<sup>8,28</sup>

Moreover, women's reports pointed to specific barriers related to balancing sports participation with family responsibilities, such as motherhood and the absence of support networks—factors historically overlooked in sports development policies. This dimension reinforces the need for public policies and institutional actions that address the multiple dimensions of women's sporting experiences, particularly regarding their retention and advancement in athletic careers.

This need becomes even more evident when considering that women's sporting trajectories are often shaped by multiple forms of intersectional discrimination. Studies such as Holzer<sup>29</sup> and Cannoot et al.<sup>30</sup> demonstrate that regulations concerning clothing, hormonal criteria, and institutional practices have historically imposed specific barriers on women, especially when issues of gender, race, and sexual orientation intersect. Such requirements, often naturalized within the sports environment, contribute to the construction of an ideal athletic body and conduct that excludes female bodies not aligned with dominant standards. This directly impacts perceptions of belonging and athletic self-esteem, leading many athletes to abandon their careers prematurely<sup>29</sup>.

Although women's accounts reveal experiences marked by inequalities in different spheres of sports training and professionalization, most men do not explicitly perceive these distinctions. Such perceptual asymmetry may indicate a naturalization of historical privileges or a lack of direct experience with the obstacles faced by women. Thus, the scarcity of comments from men in the open-ended questionnaire responses may reflect not only a lack of awareness but also a distancing from the dynamics that sustain gender inequality in sport<sup>19,31</sup>.

It is essential to highlight that gender disparities in sport are not only manifested in visible inequalities such as remuneration or access to infrastructure, but also in subjective and symbolic elements that shape a sports system still structured under male-oriented logics. Recent literature has emphasized the importance of adopting approaches based on athletes' action capabilities and perceptions, such as the affordance model proposed by Zheng & van der Kamp<sup>32</sup>, which suggests adapting sports practices and regulations to the specific capabilities of women, thereby fostering a more inclusive environment. Furthermore, the active inclusion of female athletes in decision-making processes and in the construction of sports policies is identified as a crucial step toward the structural transformation of contemporary sports culture.

It should be noted, however, that the fact that a portion of men also face precarious training conditions—such as the lack of remuneration and institutional support—points to a broader scenario of structural fragility within the modality in Brazil<sup>7,15</sup>. Precariousness affects athletes of both genders, albeit in different ways. In the case of women, this is compounded by the symbolic burden of social stigmas, gender expectations, and additional challenges such as balancing family life<sup>8,16</sup>. Therefore, although there are points of convergence in the challenges faced by men and women in beach handball, the repercussions of these challenges are often deeper for women.

Another relevant aspect is the persistence of so-called hidden forms of violence in sport, particularly in handball, which manifest through derogatory comments, prejudice, and gender stereotypes<sup>19</sup>. These symbolic mechanisms, often subtle, operate as additional barriers for female athletes, requiring them to constantly prove their competence and resilience in the face of a sports culture that remains predominantly male-dominated. Thus, even in contexts of apparent quantitative equity, women face qualitatively more complex obstacles in affirming their sporting trajectories.

Among the limitations of this study, the regional sampling frame restricted to a single stage of the Circuito Paranaense should be highlighted, as it limits the generalization of the results to other contexts. The instrument used in this research did not undergo a formal psychometric validation process, which constitutes a methodological limitation to be considered when interpreting the findings. Furthermore, reliance on self-reported data may introduce perceptual biases, particularly regarding sensitive topics such as inequality and recognition. For future studies, the use of mixed methods with in-depth interviews is suggested, as well as longitudinal monitoring of athletes to better understand the evolution of perceptions and objective conditions over time. It would also be relevant to investigate the intersectionality of gender, class, race, and territory, broadening the understanding of inequality mechanisms in sport.

In summary, although the objective data of the present study point to a certain equivalence between men and women in terms of formal training conditions and remuneration, the perceptions reported—especially by women—indicate the persistence of structural and symbolic barriers that compromise equity in sports development. The integrated analysis of the findings allows us to affirm that, in the context of beach handball, formal equality is still not accompanied by equitable recognition of the trajectories and needs of athletes of both genders.trajectories and needs of athletes of both genders.

## Conclusions

This study demonstrated that athletes' gender is significantly associated with the perception of inequalities in sports training, remuneration, and professionalization in beach handball. Women more frequently reported experiences of inequality compared to men, particularly with regard to professional recognition. These findings confirm that formal equality does not ensure real equity, underscoring the importance of specific actions to promote gender justice in the development of the sport.

The results also indicate that, even in a scenario where men and women report similar objective training conditions—such as weekly training hours and access to competitions—female athletes continue to experience persistent symbolic and structural barriers, linked to gender stereotypes, media invisibility, and lower institutional support, which affect both their career continuity and advancement.

Among the limitations of the study are the regional scope of the sample and the reliance on self-reported data, which may restrict the generalization of the results and introduce perceptual biases. To overcome these limitations, future research should adopt longitudinal designs and mixed methodologies capable of integrating quantitative and qualitative analyses, as well as considering intersectional perspectives that include gender, race, social class, and geographic context.

From a practical standpoint, the findings reinforce the need for robust public policies and coordinated institutional actions to ensure equity in access to resources, training conditions, and professionalization opportunities. Strategies such as investments in sports infrastructure, financial support programs, increasing media visibility of women's sports, and fostering female leadership in sports management positions are essential to consolidate women's careers and reduce historical inequalities in sport.

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#### CRediT author statement

Higor Santos Fonseca: Investigation, Methodology, Formal analysis, Writing – original draft.

Natália Nascimento da Silva: Investigation, Methodology, Writing – original draft.

Giovanna Xavier de Moura: Supervision, Writing – original draft.

Ágatha Graça: Writing – review & editing.

Arthur Garcia de Sales: Writing – review & editing.

Matheus Amarante do Nascimento: Writing – review & editing.

Fernando Augusto Starepravo: Writing – review & editing.

#### ORCID:

Higor Santos Fonseca: <https://orcid.org/0000-0003-2676-6576>

Nathalia Nascimento da Silva: <https://orcid.org/0009-0000-0550-9816>

Giovanna Xavier de Moura: <https://orcid.org/0000-0001-5493-7059>

Ágatha Graça: <https://orcid.org/0000-0003-2094-1863>

Arthur Garcia de Sales: <https://orcid.org/0009-0005-2964-7531>

Matheus Amarante do Nascimento: <https://orcid.org/0000-0002-4677-8956>

Fernando Augusto Starepravo: <https://orcid.org/0000-0002-1655-998X>

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**Corresponding author:** Higor Santos Fonseca. [higorfonse@gmail.com](mailto:higorfonse@gmail.com)