Impact of age, practice time, time on the team and gender on self-efficacy of volleyball athletes

Impacto de la edad, el tiempo de práctica, el tiempo en el equipo y el género en la autoeficacia de los atletas de voleibol

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Abstract

Introduction: Self-efficacy, considered as an individual's belief in their ability to achieve, is essential for sports success and can be influenced by various variables. However, it is not known how young volleyball athletes from Bahia self-assess.
Objective: Evaluate self-efficacy in U-16 athletes from Bahia and examine whether gender, age, practice time, and time on the team impact the athletes' self-efficacy.
Methodology: The study involved 72 athletes of both genders, with an average age of 15 ± 1.51 years, practice time of 27.2 ± 24.04 months, and time on the team of 15.31 ± 13.12 months. The VSES-B was used to assess self-efficacy.
Results: Indicated differences in the "Technical-Tactical Skills and Conditioning (DM1)" dimension. Item 14 showed a difference in self-efficacy for both genders. For boys, a weak positive correlation was found in Item 12 and a correlation between DM1 and practice time. For girls, a correlation was found between DM1 and age. Additionally, in DM1, a correlation was found between age and Items 4, 12, and 13, as well as between Global Self-Efficacy and age. For all athletes in general, a weak negative correlation was found in DM1 for Item 11 and age. A weak negative correlation was also found between Item 14 and gender.
Discussion: Self-efficacy values in youth athletes were similar to those found in the VSES-B validation study.
Conclusion: It is concluded that gender, age, and practice time are factors that can impact the sports self-efficacy of young volleyball athletes from Bahia.

Keywords

Athletes; competition; self-efficacy; sport; volleyball.

Resumen

Introducción: La autoeficacia, considerada como la creencia individual en su capacidad de logro, es esencial para el éxito deportivo. Sin embargo, se desconoce cómo se autoevaluan los jóvenes voleibolistas bahianos.
Objetivo: Evaluar la autoeficacia en atletas sub-16 de Bahía y verificar si el sexo, la edad, el tiempo de práctica y el tiempo en el equipo influyen en la autoeficacia.
Metodología: Participaron 72 atletas, con media edad 15 ± 1,51 años, tiempo de práctica 27,2 ± 24,04 meses y tiempo en el equipo 15,31 ± 13,12 meses. Se utilizó la Escala de Evaluación de la Autoeficacia.
Resultados: Se encontraron diferencias en la dimensión «Habilidades Técnico-Tácticas y de Acondicionamiento (DM1)». El ítem 14 mostró diferencia significativa en la autoeficacia para ambos sexos. En los chicos, se encontró correlación positiva y débil en DM1 con el ítem 12, así como entre DM1 y el tiempo de práctica. En las chicas, se encontró correlación entre DM1 y la edad. También correlación entre la edad y los ítems 4, 12 y 13, así como entre la autoeficacia global y la edad. En general, para todos atletas, se encontró correlación negativa y débil en DM1 entre el ítem 11 y la edad. También correlación negativa y débil entre el ítem 14 y el género.
Discusión: Los valores de autoeficacia encontrados en atletas jóvenes fueron similares a los del estudio de validación de la VSES-B.
Conclusión: El sexo, la edad y el tiempo de práctica son factores que pueden afectar la autoeficacia deportiva de estos atletas.

Palabras clave

Atletas; autoeficacia; competición; deporte; voleibol.

Introduction

The Social Cognitive Theory (SCT) proposed by Bandura (1986) views the individual as an agent, capable of performing intentional actions that influence their functioning and the course of their life, and therefore not merely as a product of their environment. Being an agent means pursuing accomplishments through one's own actions necessary to achieve a given goal (Bandura, 1986, 2006). In this way, individuals are able to exert some degree of control over their feelings, thoughts, and actions, shaping their behaviors through self-beliefs (Pajares; Olaz, 2008).

The theory suggests that there is a triad of factors that influence human agency: internal factors, such as cognitive processes, personal characteristics, affect, and biological events; external environment, which encompasses the social, cultural, and physical context in which the person is embedded; and behavior, as observable actions and responses of the individual. These factors interact and interfere with one another in different ways depending on the circumstances (Bandura, 1997).

Human agency is characterized primarily by intentionality, forethought, self-reactiveness, and self-reflection. Intentionality refers to carrying out action plans aiming to produce a result, though independently of it. Forethought goes beyond planning for the future, manifesting in the regulation of behavior through outcome expectations, trying to avoid negative consequences and achieve positive results. Self-reactiveness is the ability to conform to what was planned, to self-motivate and regulate the fulfillment of plans, thereby constituting a multifaceted self-direction. Lastly, self-reflection refers to the metacognitive ability to self-examine one's thoughts and behaviors (Bandura, 2008).

Individuals contribute to their psychosocial functioning through mechanisms of human agency, among which one of the most relevant is self-efficacy. Self-efficacy is the central construct of SCT; however, it may be considered a theory independent of it, consisting of the belief in the capability to execute and organize courses of action necessary to achieve accomplishments, which are essential for human motivation, well-being, and personal achievement. The ability to form representations of future outcomes is essential for motivation, since to persist in a goal, the person must believe that they can succeed in that action. If they do not hold that belief, at the first sign of difficulty, they will likely give up (Bandura, 1977, 1997; Pajares; Olaz, 2008).

The formation of efficacy beliefs is influenced by four sources: personal experiences, related to the individual's past experiences; vicarious experiences, which occur through observing others successfully performing actions; verbal persuasion, exposure to verbal analysis, which may be linked to the individual's self-talk with reinforcing positive messages; and physiological states, sensations linked to the demands of the task, such as increased heart rate and elevated blood pressure, among others (Machado, 2024a).

Particularly in the sports context, athletes require many hours of effort, dedication, and training to develop certain skills. The more physically, technically, tactically, and psychologically prepared the athlete is, the better their athletic performance will be, which can be the difference between victory and defeat in a match or competition (Machado, 2024a). Therefore, believing in one's athletic capability is just as important for athletes and individuals who aim to become athletes, as it can determine success in these activities. On the other hand, low self-efficacy leads individuals to not even attempt the courses of action necessary to achieve a given goal (Bandura, 1997).

The need for this attribute becomes even more evident given the necessity of persistence to achieve results, since competition generates various emotional reactions (Machado, 2024a). In competitions, there may be changes in psychological functioning, such as decreased concentration, loss of attentional focus, and increased anxiety levels, which can affect sports performance (Bertoldi, et al., 2022). Athletes with high self-efficacy tend to pursue more challenging activities, exerting greater effort and expending more energy to reach specific goals. Conversely, those with low self-efficacy tend to avoid high-difficulty activities and be less resilient to adversities encountered when setting goals (Machado, et al., 2021).

In volleyball, self-efficacy has been studied among high-performance athletes (Machado, et al., 2021; Machado et al., 2024a). However, from the systematic review study by Ramos et al. (2024), which aimed to analyze Brazilian scientific production on self-efficacy in the field of sports, 30 theses and dissertations were found that addressed the topic, with the most studied population being professional athletes, and six of these studies referring to volleyball. Most research was conducted with team sports, mainly

Olympic ones, highlighting the importance of generating knowledge in other modalities. It was concluded that the studies are concentrated almost entirely in the South and Southeast regions. Of the total studies, only two were conducted in the Northeast region and none in Bahia.

Recently, particularly in volleyball, studies on the topic have focused specifically on the serve skill (Lola; Tzetzis, 2020). Little is known about the assessment of this construct in youth athletes, specifically as these athletes are in the process of sports development, a process that varies across Brazilian regions and states. This is especially true in the state of Bahia, in the Northeast region, where the number of athletes in the sport is lower compared to other regions of Brazil, such as the Southeast and South, which have the highest concentrations of youth volleyball athletes (Collet, 2018). This may impact the opportunity for young athletes to identify with high-performance athletes, limiting vicarious experiences within their state, which could be an important source of self-efficacy for youth athletes. The variables sex, age, practice time, and time on the team are little studied in research on volleyball, with only one article found that analyzed these variables in high-performance athletes (Machado, 2021). Therefore, it is important to study them in youth categories to understand how they behave in younger athletes and to comprehend how these factors may influence their self-efficacy. Accordingly, the objective of this study is to assess self-efficacy in youth volleyball athletes and identify whether sex, age, practice time, and time on the team impact the self-efficacy of male and female athletes in the under-16 categories in Bahia.

Method

This research is characterized, in terms of its procedure, as a field study, cross-sectional in design, with a quantitative and descriptive nature, aiming to study the characteristics of a group and conduct a quantitative analysis of the collected data (Gil, 2002).

The study was approved by the Research Ethics Committee of the School of Nursing at the Federal University of Bahia (UFBA), CAAE No.: 78643722.9.0000.553.7.

For the sample, volleyball athletes participating in state-level championships in Bahia were intentionally selected. Authorization for participation in the study was requested from the parents or coaches. Accordingly, after agreeing to participate in the research, the Informed Consent Form was signed by the parents and coaches, and the Informed Assent Form was signed by the participating athletes.

Participants

The sample was composed of 72 athletes from five teams, aged between 11 and 17 years, with a mean age of 15 ±1.51 years, mean practice time of 27.2 ±24.04 months, and time on the team of 15.31±13.12 months, comprising 36 female athletes with a mean age of 14.61±1.22 years, mean practice time of 30.72±27.26 months, and 17.25±14.72 months of time on the team; and 36 male athletes with a mean age of 15.34±1.64 years, mean practice time of 23.69±20.11 months, and 13.38±11.17 months of time on the team.

Procedure

Data collection was carried out in the city of Salvador, Bahia, during the second stage of the Sub-16 Bahia State Volleyball Championship, a state-level competition that is part of the calendar of the Bahia Volleyball Federation, which took place in 2023 at the Federal Institute of Education, Science and Technology of Bahia (IFBA), Salvador campus, and in Feira de Santana, a city located 108 km from the capital, at the team's training site. The athletes responded individually to the instrument, which was administered by the researchers of the study prior to training and competition.

Instrument

The Self-Efficacy in Volleyball Scale for Youth Athletes (VSES-B) (Machado, et al., 2023) was used to assess the self-efficacy of the athletes. The VSES-B consists of 14 items that assess the strength of athletes' self-efficacy expectations across two dimensions, using a response scale ranging from 0 to 100, where 0 means none, 50 moderately, and 100 completely. The scale comprises two dimensions. The Technical-tactical skills and conditioning dimension includes nine items (1, 2, 3, 4, 5, 11, 12, 13, and 14), such as "Assume the attack responsibility to decide the match"; "Make quick decisions to define an action

strategy." The Psychological - Cognitive-emotional self-control skills consists of five items (6, 7, 8, 9 and 10) such as "Be able to adapt your level of concentration at different moments in the match"; "Control yourself emotionally to deal with pressure and make quick decisions".

The technical-tactical skills and conditioning dimension encompasses general technical and tactical aspects common in game situations for volleyball athletes. This dimension allows for the assessment of technical-tactical situations that athletes face throughout matches. On the other hand, the Psychological - Cognitive-emotional self-control skills dimension is qualified by cognitive and emotional self-control skills specific to situations athletes encounter during a volleyball match, allowing for the evaluation of psychological situations inherent to the game. Finally, the global score of the scale assesses the self-efficacy of youth athletes (Machado, et al., 2023).

The instrument has content suitability for youth volleyball athletes, and the mean completion time is 10 to 15 minutes. The factorial structure of the VSES-B demonstrated good psychometric properties for the two-dimension model with a good fit (x^2 = 2537.383; df = 91; S-Bx^2 = 214.6798; df = 74; p < .05; x^2/df = 2.90; NNFI = .93; CFI = .94; and IFI = .94; RMSEA = .06). Reliability values were above the recommended threshold (Cronbach's Alpha α = .91; McDonald's Omega = Ωt = .94 and CR = .92), indicating that the instrument is accurate and reliable.

The α, Ω, and CR coefficients for each dimension ranged from .85 to .90, and for the total score ranged from .85 to .94. Furthermore, the Average Variance Extracted (AVE) indicators ranged from .50 to .54, and the chi-square differences (x^2 = 323.8524, df = 163; p < .01) indicated invariance of equal forms, however, not invariance of equal factor loadings between sexes (p < .01). The convergent validity of the VSES-B with the Collective Efficacy Questionnaire For Sports, validated for Brazilian athletes (CEQS-B) (Paes, et al., 2023), showed a general correlation value between the CEQS-B and VSES-B of r = .37; p = .00. The mean VSES-B self-efficacy scores correlated positively (r = .37; p = .00) with the mean collective efficacy (CEQS) scores. For VSES-B dimensions D1 and D2 and the five CEQS-B dimensions, significant and positive, though weak, correlations were observed, ranging from r = .25 (p = .00), between VSES D2 – Psychological - Cognitive-emotional self-control skills – and Ability, to r = .34 (p = .00), between VSES D2 – Psychological - Cognitive-emotional self-control skills – and Preparation.

Data analysis

The data collected from the athletes' responses to the VSES-B were tabulated in an Excel® spreadsheet (Version 2405 Build 16.0.17628.20006) and analyzed using SPSS® (IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp). The Kolmogorov-Smirnov test was conducted to test the normality of the data. As normality was not plausible, the Mann-Whitney test was used to assess differences in self-efficacy between sexes. The delta value of the differences was calculated to determine the impact of the result (Espírito Santo; Daniel, 2015). To determine the impact of sex, age, and practice time on the athletes' self-efficacy, Spearman correlations were performed among the variables analyzed. The GPower 3.1.9.7 software was used to calculate the effect size (Faul, et al., 2007). The type of analysis was post hoc. The test power found was .73, considered medium, for the Mann-Whitney test, and .74 for the Spearman correlations, also considered medium. The significance level adopted for all tests was p < .05.

Results

This section presents the results of the self-efficacy assessment of male and female athletes in the under-16 volleyball categories in Bahia. The total sample of athletes showed a mean score of 63.09±19.47 for self-efficacy in the Technical-tactical skills and conditioning dimension, a mean score of 68.56±23.00 in the Psychological - Cognitive-emotional self-control skills dimension, and a Global Self-Efficacy in Volleyball mean score of 65.04±19.12. Table 1 presents the results regarding the difference in self-efficacy between sexes.

Table 1. Mean self-efficacy scores of youth volleyball athletes from the state of Bahia based on the Mann-Whitney test

	Male	Female	*Z*	*p*
Technical-tactical skills and conditioning	37.79	35.21	-0.52	.60
Psychological - Cognitive-emotional self-control skills	38.19	34.81	-0.68	.49
Global Self-efficacy in Volleyball	37.32	35.68	-0.33	.74

*p < .05

The results of self-efficacy in the dimensions Technical-Tactical Skills and Conditioning, Psychological – Cognitive-Emotional Self-Control Skills, and Global Self-efficacy in Volleyball showed no significant differences between boys and girls. However, in the Technical-Tactical Skills and Conditioning dimension, Item 14, "Be brave enough to perform actions necessary for the game," showed a significant difference in self-efficacy between the sexes. The mean self-efficacy for boys was 82.50±17.78 and for girls was 68.05±26.59, with Z=-2.35, p < .01 and Δ=37.16. When analyzing the age of the athletes, differences were found between the sexes, Z=-2.498, p < .01 and Δ=39.42, with boys presenting a higher mean age, 15.34 (±1.64) years, compared to girls, 14.61 (±1.22). Table 2 presents the results regarding the correlation between self-efficacy and age.

Table 2. Correlation between self-efficacy and age for boys, girls, and both sexes

	Boys (*r*)	Girls (*r*)	Both sexes (*r*)
Technical-Tactical Skills and Conditioning	.18	-.38*	-.10
1. Assume the attack responsibility to decide the match.	-.17	-.23	-.17
2. Make quick decisions to define an action strategy.	.30	-.26	-.04
3. Be able to guide your team and command the defensive court zone	.20	-.22	-.02
4. Able to read the defensive court zone	-.12	-.38*	-.14
5. Save a tipped ball	.27	-.26	.00
11. Score a difficult point	-.29	-.30	-.30**
12. Be able to decide the match	.11	-.33*	-.02
13. Demonstrate the courage to stand and defend	.09	-.43**	-.05
14. Be brave enough to perform actions necessary for the game.	0,14	-0,32	-0,01
Psychological - Cognitive-emotional self-control skills	.10	-.25	-.06
6. Be able to adapt your level of concentration at different moments in the match	.07	-.30	-.12
7. Control yourself emotionally to deal with pressure and make quick decisions	-.05	-.26	-.11
8. Recover quickly from an error (not caring about the error)	.11	-.18	.01
9. Control your thoughts by focusing on the next move	.12	-.11	.24
10. Be focused on distinguishing what to do at specific times in the match	.02	-.20	-.06
Global Self-Efficacy in Volleyball	.16	-.37*	-.09

*p < .05; **p < .01.

When correlating self-efficacy and age, no correlation was found for boys. However, for girls, a correlation was demonstrated between the dimension Technical-tactical skills and conditioning and age $r = .38$, $p = .02$. It is noteworthy that in this dimension, correlations were also found between age and the items: Item 4. “Able to read the defensive court zone” $r = .38$, $p = .02$; Item 12. “Be able to decide the match” $r = .33$, $p = .04$; and Item 13. “Demonstrate the courage to stand and defend” $r = .43$, $p = .01$. As well as for the Global Self-Efficacy in Volleyball of the athletes and age $r = .37$, $p = .02$. Considering the athletes in general, in the dimension Technical-tactical skills and Conditioning, a weak negative correlation was found for Item 11. “Score a difficult point” $r = .31$, $p = .01$.

When correlating self-efficacy and practice time, a weak positive correlation was found for boys between practice time and the “Technical-Tactical Skills and Conditioning” dimension $r = .40$, $p = .01$. In this same dimension, a weak positive correlation was found for Item 12. “Be able to decide the match” $r = .33$, $p = .04$. For girls and the group as a whole, no correlation was found between self-efficacy and practice time.

For the variable time on the team and self-efficacy, no correlation was found for girls, boys, or both sexes.

For the dimension Technical-Tactical Skills and Conditioning, a weak negative correlation $r = .28$, $p = .01$ was found between Item 14. “Be brave enough to perform actions necessary for the game” and sex.

Discussion

This study aimed to evaluate the self-efficacy of volleyball athletes in the youth category and to verify whether sex, age, practice time, and time on the team impact it. The analysis of the results was conducted considering the two dimensions (Technical-tactical skills and conditioning, Psychological - Cognitive-emotional self-control skills) and the Global Self-Efficacy in Voleyball, as proposed by the conception and validation of the instrument. In addition, the items that compose each dimension separately were also analyzed, since this analysis, although not foreseen in the instrument’s construction and validation

process, may allow coaches and other members of the technical teams to develop specific intervention programs to promote sport self-efficacy in youth athletes.

Firstly, it is important to highlight that the moderate values of self-efficacy found for this sample represent the developmental stage of youth athletes, related to chronological age, as they are in a phase of motor specialization, which depends on various factors such as the refinement of game fundamentals, important to reach an optimal physical, technical, tactical, and behavioral level (Mendes, et al., 2021), and therefore do not present higher levels of self-efficacy.

Regarding sex and the Technical-tactical skills and conditioning dimension, a significant difference was found in the self-efficacy of both sexes for Item 14 "Be brave enough to perform actions necessary for the game," as well as a weak negative correlation between the item and self-efficacy for both sexes, which demonstrates a difference in self-assessment between sexes. This difference may be related to gender stereotypes and the differentiated socialization that boys and girls receive, which influences individuals' expectations and experiences regarding sport. Nunes and collaborators (2020) affirm that differences regarding the variable sex in self-efficacy studies are better understood when the particularities of the context and the activity in question are considered.

The gender stereotypes we internalize durably shape how we perceive and interpret our experiences, as well as influence how we use our skills. Gender categorization not only serves to classify people but also highlights the characteristics and activities associated with them (Bandura, 1989). There is a belief that men tend to evaluate their self-efficacy more positively than women. However, this is not valid in all cases. This tendency is not confirmed when the task is considered appropriate for all genders, when clear feedback on performance is given, and in non-competitive situations (Feltz; Short; Sullivan, 2008). Therefore, gender stereotypes affect self-efficacy evaluation in such a way that it tends to be higher when the task is considered appropriate for the gender. However, this mismatch between gender stereotypes and the performed activity seems to affect women more (Feltz; Short; Sullivan, 2008).

Looking at the history of Physical Education, it is shaped by various discourses from the biological sciences that have produced, and continue to produce, gender stereotypes. Boys are expected to demonstrate traits such as power, strength, and courage, while girls are expected to embody beauty and grace, performative qualities associated with an ideal of femininity (Silva; Cesar, 2012).

Regarding self-efficacy and practice time, the results indicate a weak positive correlation for boys in the dimension Technical-tactical skills and conditioning dimension and practice time, as well as in Item 12. "Be able to decide the match" in the same dimension, suggesting that experience acquired with practice time positively influences the formation of self-efficacy beliefs. Personal experiences together with the past experiences of the athletes are related to the formation of self-efficacy beliefs, so that the more experienced the athlete, the greater the sense of self-efficacy. Although the correlation is weak, it reinforces the importance of continuous training and positive experiences for the development of self-efficacy (Feltz; Short; Sullivan, 2008).

In a study with high-performance athletes participating in the main national championship – Superliga, there was a correlation between Global Self-Efficacy in Volleyball and practice time and global self-efficacy and age, supporting the idea that experience has the power to increase self-efficacy. The delta value related to age was greater than that related to practice time, indicating, therefore, that for this group of athletes, age has a greater influence on self-efficacy (Machado, et al., 2021). This does not corroborate the findings of this study, since considering the entire sample, there was no positive correlation between global self-efficacy and age. However, given the greater experience time of high-performance athletes, it is assumed that the limited experience time and age for youth athletes may not be sufficient to consolidate sport self-efficacy beliefs for this group.

For girls, a negative correlation was found between the dimension Technical-tactical skills and conditioning dimension and age, highlighting that this correlation also occurred in the following items of the dimension: Item 4. "Able to read the defensive court zone"; Item 12. "Be able to decide the match"; Item 13. "Demonstrate the courage to stand and defend," as well as for the athletes' Global Self-Efficacy in Volleyball and age. Interpretations based solely on chronological age may be imprecise, since athletes are sometimes evaluated according to their physical growth and maturation based on chronological age, lacking assessments related to other aspects such as technique, tactics, and psychological skills (Mendes, et al., 2021).

These correlations may indicate that girls develop certain capacities and skills earlier than boys, displaying higher self-efficacy at younger ages. At the end of childhood, physical differences between boys and girls become more pronounced, such as weight, height, and overall physical maturity, with motor performance indicators at the end of childhood revealing greater progress in girls, which places them in a favorable position to excel in sports activities that value speed, power, and strength (Gallahue; Ozmun; Goodway, 2013). Socio-affective characteristics may influence these relationships; the bond with peers, coaches, and family members is essential for the construction of self-efficacy in both boys and girls. The parental relationship helps children recognize the social consequences of their actions, shaping their perception of their abilities, as well as the comparisons children make of their skills with those of their teammates (Bandura, 1997).

For all athletes in general, in the Technical-tactical and conditioning skills dimension, a weak negative correlation was found for Item 11, "Score a difficult point," and age. These findings may be attributed to the fact that this sample is composed of youth athletes who are in the process of sports development and do not yet have extensive experience. The age of the athletes ranged from 11 to 17 years and the practice time from 01 month to 9 years, with 73.61% of the sample having up to 2 years of practice and only 5.55% (4 athletes) having more than 6 years, which reinforces the group's inexperience. When performing a quartile analysis of the athletes' ages, there were 11 athletes in the first quartile (11 to 13 years), 18 in the second quartile (14 years), 25 in the third quartile (15 to 16 years), and 18 in the final quartile (17 years). Therefore, it can be observed that there is greater variability in the distribution of athletes across the quartiles and that age is not directly related to practice time. Consequently, this wide variation in practice time and age results in a high variability of experience in this group, which may explain this negative correlation between age and self-efficacy.

Furthermore, in Bahia and in the Northeast in general, the sport is less developed, meaning that Bahia does not have a high-level youth championship, unlike the Southeast and South regions (Machado, et al., 2023; Paes, et al., 2023). This may influence the lower self-assessment of the athletes, explained by the lack of vicarious experiences in the development of athletes' self-efficacy. Considering the 2022/2023 Superliga A season, the Northeast had only one participating team, Rede Cuca/CE (TvCeará, 2022), in the men's division. In the 2023/2024 season, there was no participation from any Northeastern team. In the last five years, the only other participation of a team based in the Northeast was FUNVIC Natal, a team previously based in Taubaté/SP (Globo Esporte, 2024a; 2024b), which highlights the difficulty of integrating Northeastern teams into the highest levels of the sport.

Historically, Northeastern participation in the women's Superliga A included: Sport in the 2007/2008, 2008/2009, and 2009/2010 seasons; São Luís-MA in the 2013/2014 and 2014/2015 seasons. In the Superliga B, the access championship to the Superliga A, the main national competition in the sport, participation included: Sport 2019/2020; Recife Vôlei, 2022/2023 and 2023/2024; Vôlei Natal 2023/2024. In the men's division: Sport 2011/2012; UFC-CE 2011/2012; Aero-RN 2020/2021; Rede Cuca-CE 2021/2022 and 2023/2024; Vôlei Natal 2023/2024 (Ne45, 2024). Currently, in the 2024/2025 Superliga, in both the men's and women's competitions, there are no Northeastern teams participating (CBV, 2025a; 2025b), highlighting the lack of high-performance teams in the Northeastern context.

In a study on the development of volleyball athletes, Collet (2018) observed that most elite athletes came from metropolitan areas with greater infrastructure and encouragement for sports development in general and from cities that have or are near nationally relevant clubs. The study also identified that the presence of well-known clubs, particularly those with a strong presence in the National Superliga A and better-developed sports structures in those locations, generates more practice opportunities and appears to be a crucial factor for the emergence and development of talent in the sport. These data once again highlight the lack of representation of Northeastern teams in the Superliga, consequently reflecting the lack of high-performance team role models for youth categories in their respective states.

It is important to emphasize that the data presented here represent the first application of the instrument (VSES-B) (Machado, et al., 2023), which makes direct comparison with previous studies and extrapolation of the results found impossible, especially in the context of youth athletes who are still developing their physical, technical, tactical, and psychological repertoire in the sport. Although there are no other applications with the instrument, it is possible to compare the results found in the present study with those of the VSES-B validation (Technical-tactical and conditioning skills M=63.05±18.60; Psychological - Cognitive-emotional self-control skills M=64.80±18.34; Global Self-efficacy in Volleyball,

M=63.67±16.68), which were similar to those found in the validation study, supporting the results of the present research.

Youth athletes and high-performance athletes have different characteristics in terms of physical, technical, tactical, psychological, and vocabulary repertoire. When responding to a scale, the individual undergoes a sequence of cognitive stages: interpreting the item, retrieving memories and emotions, formulating a judgment, and finally selecting a response. Due to differences in experience repertoire, youth athletes may not properly assess their capacities concerning the intended construct when responding to the instrument (Machado, et al., 2023). Supporting this argument, Bandura (1997) identifies previous performance as one of the most influential sources in the formation of self-efficacy beliefs, when the individual relies on their own mastery experiences. If these experiences are seen as failures, self-efficacy beliefs are likely to decrease.

In a study conducted by Machado and collaborators (2024b) with high-performance athletes with 12.54 ± 2.71 years of practice and 26.20 ± 1.73 years of age, which evaluated self-efficacy during the Superliga competition season in three different moments, the authors found that athletes maintained high levels of self-efficacy even when performance varied during the competition. This is a particularity of high-performance athletes due to their high technical level and years of experience in the sport. While these athletes showed Global Self-Efficacy in Volleyball with means ranging from 75.49 to 89.36, youth athletes had a mean of 65.04 for Global Self-efficacy in Volleyball, reinforcing the argument of the limited experience of the group analyzed.

Self-efficacy beliefs may be influenced by discrepancies between the performance standards expected by athletes and the achievements attained by them. It is possible that older athletes have set higher performance standards, and the difficulty in meeting them ends up reducing self-efficacy. Moreover, how athletes react to success and failure, and the perceived difficulty of tasks, may be factors that explain these results. Other aspects, such as social pressures, injuries, and changes in priorities, may also contribute to this decrease in self-efficacy with age. Developing athletes who interpret their past failures as learning opportunities and believe that they can improve their skills through practice tend to exhibit higher levels of self-efficacy compared to those who attribute their difficulties to physical limitations, perceiving them as insurmountable obstacles (Feltz; Short; Sullivan, 2008).

In this way, this negative correlation between age and self-efficacy may be explained by a perception of one's capacities being more linked to past failure experiences, favoring older adolescents to have a lower sense of self-efficacy. Experiences of failure are part of human development and may serve as learning opportunities, shaping the individual's belief in their capacities and influencing how they assess perceived ability. Therefore, it is possible that older athletes have gone through more challenging situations, and these situations have served as a reference for their self-efficacy (Nunes, et al., 2020).

When analyzing the relationship between the effort exerted for an action and the perceived efficacy, young children tend to interpret that the more effort, the greater the ability, which may generate a stronger sense of efficacy. However, when observing this situation in adults, there is no single pattern. Some understand the need for more effort as an indicator of low ability, while others view effort as an indication that they are developing their skills. In general, self-efficacy comes from a combination of factors, such as effort and the difficulty of performing the task. Success experiences in tasks considered arduous, achieved with little effort, tend to reinforce self-efficacy beliefs. Likewise, perceiving oneself as talented in a given skill will reinforce high self-efficacy (Feltz; Short; Sullivan, 2008).

Conclusions

Global Self-Efficacy in Volleyball was moderate among youth athletes in Bahia. Sex influenced the athletes' self-efficacy, indicating that gender stereotypes may shape the expectations and experiences of youth athletes in sports. Time spent on the team did not impact the athletes' self-efficacy.

For boys, the time of practice positively influenced the development of game skills. Girls, in turn, demonstrated stronger self-efficacy earlier than boys, due to earlier maturation between sexes at the end of childhood.

With regard to the limitations presented during the study, the cross-sectional design does not allow for monitoring changes in athletes' self-efficacy over the course of the competition or competitive season, which makes it difficult to extrapolate the results.

Future directions include studies evaluating self-efficacy in youth athletes at different time points, with athletes from other states. It is also suggested to evaluate self-efficacy in beach volleyball athletes from different youth categories, as well as to conduct studies correlating self-efficacy with performance in training and competitions.

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