Anxiety levels in «Under 18» and «Under 20» Elite Rugby Players of National Teams in different field positions

Niveles de ansiedad en jugadores de Elite de equipos de Rugby «Sub-18» y «Sub-20» en diferentes posiciones de campo

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Abstract. The objective of this study was to encourage Rugby players to promote abilities in this sport, therefore we have evaluated the somatic anxiety, cognitive anxiety and self-confidence values of U18 and U20 rugby athletes of the Portuguese Nationals Rugby Teams, who participated respectively in the U18 Elite European Championship and in the U20 Trophy World Rugby, comparing forwards and defenders. For data collection, we used the CSAI-2 which assesses cognitive anxiety, somatic anxiety and self-confidence. The results showed more favourable average parameters for the group of athletes U20. However, there were only significant differences favourable to the U20 team in the domain of self-confidence, in a general level between teams and in the forward positions.

Keywords: Rugby; Anxiety; Self-confidence; Elite; U18: U20.

Resumen. El objetivo de este estudio fue animar a los jugadores de rugby para promover las habilidades en este deporte, la evaluación de la ansiedad somática, ansiedad cognitiva y la autoconfianza de los atletas de rugby Sub 18 y Sub 20 de los equipos nacionales de rugby portugueses que participó, respectivamente, en U18 European Elite Campeonato y en el U20 Trophy World Rugby, comparando avanados y defensas. Para la recolección de datos, utilizamos el CSAI-2 que evalúa la ansiedad cognitiva, la ansiedad somática y la autoconfianza. Los resultados mostraron parámetros medios más favorables para el grupo de atletas Sub-20. Sin embargo, sólo hubo diferencias significativas favorables para el equipo Sub-20 en el dominio de la autoconfianza, en un nivel general entre equipos y en las posiciones de avanados.

Palabras clave: Rugby; ansiedad; Auto-confianza; Elite; Sub18; Sub20.

Introduction

According to (Brooks et. al. 2005) rugby is one of the most practiced Team Sports Games in the world (TSG), however, it is also considered a sport of high physical contact and quite conducive to injuries. Already (McLean, 1992) quoted by (Lopes et. al, 2011) defines rugby as a collective sport played on a grassy field about 100 meters long by 70 meters wide, over two periods of 40 minutes with an interval of 10 minutes between those two periods. The main objective of the game is to win the opponent’s defence and take the ball to the end of the field, which is called the «rehearsal area», marking the «rehearsal», which will give the team that made it about 5 points. Each team consists of 15 athletes who are usually divided into two basic tactical positions «defenders» (seven players) and «forwards» (eight players), according to the tactical orientation they play during the match. The game of rugby consists of the opposition of two teams with identical goals to score points and avoid points of the opposing team. In this relationship, both teams need to coordinate their players (intra-team coordination) through a collective strategy that considers the opposition of the other team (inter-team coordination) in an evolving context (McGarry, Anderson, Wallace, Hughes, & Franks, 2002 cited by Passos et al., 2010), with influence in this synergy between positions becoming the group performance of each team (Gómez-Millán, Delgado-Vega & Fernández-Gaviria, 2017).

All athletes are subject to feel different levels of anxiety in a competitive environment. And since rugby is a contact sport and with a lot of body impact, this possibility is quite evident. Increasingly, there is the awareness that the body and mind are inseparable in pursuit of sport success. Sport is at least 50% mental, in which an athlete’s success results from the combination of physical and psychological skills (Matthew, 2015).

For Sullivan (1946), anxiety arises when there is a threat to the security of the individual in the context of interpersonal relationships, trying with this theory to demonstrate the social dimension of the problem of anxiety. For Kelman (1959) anxiety is the normal type of attribute of the human being that can be observed when a certain level of tension exceeds a midpoint. > Already Buss (1966) argues that anxiety is «is conceived as a generalized fear reaction to unknown stimuli, from phobias, conceived as reactions of fear specific to known stimuli.» (Freud, 1932) and (Hull, 1943), cited by (Frischkeinricht, 1990), define anxiety as the natural reaction to situations in which the individual found pain (Weinberg & Gould, 1999; Dias, 2005) present another definition of the concept, understanding anxiety as a negative emotional state characterized by nervousness, worry and apprehension, associated with a general activation of the organism. For Weinberg (1988) anxiety is a negative emotional state to which are associated feelings of nervousness, worry and apprehension associated with the activation or stimulation of the body, although in their review on anxiety and performance, Núñez-Prats and García-Mas (2017) allude that the results indicate that there is insufficient empirical and / or experimental evidence to clarify the relationship between anxiety and sports performance.

This has a thought component, called cognitive anxiety and a component of somatic anxiety that refers to the degree of physical activation. The subject of competitive anxiety has been highlighted in the literature on sports psychology and is frequently cited as one of the most studied areas within this theme (Jones, 1995; Tenenbaum and Bar-Eli, 1995; Bidell, 1997; Woodman and Hardy, 2001; Mellalieu et al., 2009). According to Davies (2013), quoting (Jones, 1995) anxiety is a significant factor in the athlete’s sports performance. This entails a follow-up by professionals of psychology to help athletes deal with stress and anxiety, according to Gonzalez-Campos, Valdivia-Moral, Cachón-Zagalaz, Zurita-Ortega and Romero-Ramos (2017) who develop the psychological ability to control stress, prevent anxiety states and consequently, maintain self-confidence, good attention-concentration during competition. Castro-Sánchez, Zurita-Ortega, Chacón-Cuberos and Lozano-Sánchez (2019) also revealed that it is important to pay attention to the existing associations between the motivational climate perceived by athletes and their anxiety levels, where the promotion of motivational climates oriented to the task and intervening through the use of relaxation techniques in order to reduce anxiety levels, and this same anxiety can be a factor with a risk for injuries (Fernández-García, Zurita-Ortega, Cepero-González, Molina- García, Vilches-Aznar, & Ambria-Sandoval, 2015). Morillo, Reigal and Fernández-Mendo (2016) also unaltered the importance of motivational domain and satisfaction of basic psychological needs as a factor for maintaining sports practice, reducing the unwanted effects of psychosomatic variables. The anxiety is a negative emotional state that can be characterized by a certain nervousness, worry and apprehension, being associated...
with the activation or agitation of the body. Anxiety has an element of thinking called cognitive anxiety and concerns the degree to which the athlete worries or has negative thoughts about his or her sporting performance. It also has an element of somatic anxiety, which is the degree of perceived physical activation and relates to moment-to-moment changes in perceived physiological activation in the athlete. Increased heart rate, sweating in the hands, muscle tension, pallor and cold hands are some examples of physiological changes that may occur (Weinberg & Gould, 2001).

(Dias, 2005) carried out a study with the objective of characterizing psychologically Rugby athletes, in the 1º National Division of Man Rugby in the season of 2004/2005. In this study, several psychological abilities (confrontation with adversity, training, concentration, confidence and motivation for achievement, goal formulation and mental preparation, maximal yield on pressure, absence of worries, personal confrontation resources) the highest average values of the athletes are those relative to the personal resources of confrontation (Mean = 52.79).

Regarding the lowest average scores, these are verified at the level of goal formulation and mental preparation, i.e. setting goals to be achieved in the short term and mental planning and preparation for the competition, also in the two moments of evaluation (Mean = 6.23). Of all the psychological abilities evaluated, the trainability, concentration, maximum yield on pressure, absence of preoccupations and personal resources of confrontation, are those that present better results. Rather than the dimensions of confrontation with adversity, confidence and motivation to achieve and formulate goals and mental preparation, where the values obtained are the lowest in both assessments.

In a study by (Davies, 2013) aimed to qualitatively analyse the symptoms of anxiety and confrontational tendencies of Rugby XV and how these affect their performance. In this investigation, no major differences were found between the advanced and the defenders regarding the interpretation of anxiety symptoms. Players who absorb negative thoughts should initiate strategies to turn those thoughts into positive. It also refers to the importance of psychology and sports psychologists and how they can manage the symptoms of negative anxiety within a sports team.

Vaz, Martin, Batista, Almeida and Fernandes (2017) carried out a study where the objective was to identify differences in the use of psychological competences in competitive situations according to the game position (advanced vs. delayed lines) and considering the final classification obtained (1st to 3rd vs. 4th to 7th places). 183 male athletes from seven different nationalities played in the European Under Championship and 24 from the U20 Trophy World Cup, aged between 16 and 20 years old. The sample had a mean age of 16.67 years at the U18 level and an average of 18.7 years at the U20 level. The athletes’ experience practice time ranged from 3 to 14 years, with the U18 level averaging practice time of 7.5 years and the U20 level a practice average of 8.2 years. The data were collected during the competitive season of clubs, specifically during the final stages of international competitions by competitive age group.

**Participants**

Our sample consisted of 45 athletes from the Portuguese Rugby Federation, 21 from the U18 level who competed for the U18 European Elite Championship and 24 from the U20 Trophy World Cup, aged between 16 and 20 years old. The sample had a mean age of 16.67 years at the U18 level and an average of 18.7 years at the U20 level. The athletes’ experience practice time ranged from 3 to 14 years, with the U18 level averaging practice time of 7.5 years and the U20 level a practice average of 8.2 years. The data were collected during the competitive season of clubs, specifically during the final stages of international competitions by competitive age group.

**Methods**

**Objective**

The objective of this research was to evaluate the somatic anxiety, cognitive anxiety and self-confidence values in the U18 and U20 athletes of the Portuguese Rugby National Teams, and to interpret the symptoms in the competitive state in different athletes (Forward and Defenders) and respective levels in their participation in international competitions.

**Instruments**

The data collection instrument used was the Competitive State Anxiety Inventory (CSAI-2), a Portuguese language version translated by (Fernandes, Nunes, Vasconcelos Raposo, Fernandes & Brustad, 2013), composed of 16 items that evaluate the intensity dimension cognitive anxiety, somatic anxiety, and self-confidence. At the same time, for each item is assigned a scale from negative to positive, so that the athlete focuses on the question posed to him and what kind of emotion causes him in a competitive context, helping or harming him, that is, evaluating the dimension direction of anxiety. The factorial analysis carried out by these authors revealed the following values of adequacy to the model, intensity dimension (CFI = 0.96, NNFI = 0.95, RMSEA = 0.053), direction (CFI = 0.96, NNFI = 0.96, RMSEA = 0.058), and frequency (CFI = 0.941, NNFI = 0.929, RMSEA = 0.057). We also had the approval by the Ethics Committee of our faculty to proceed with this study.

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In table 1 we present the participants of our sample, namely the number of forwards and defenders players.

In table 2 are the results of the U18 and U20 players according to their practice time and ages.

**Results**

Considering the data in table 3 we observe the global descriptive values of the sample. Although the ampleness of the scale is between 1 and 4, the average values are not very high, except for the self-confidence variable. The sample revealed a mean level of somatic anxiety of 1.62 for a minimum of 0.89 and a maximum of 2.56, cognitive anxiety 2.20 for a minimum of 1.33 and a maximum of 3.11, for self-confidence 2.97 for a minimum of 1.44 and one maximum of 3.89.

As for the degree to which these emotional states could help or hinder their performance, from the average point of view, the group seems to be favoured in this context.

The mean level of somatic anxiety was 0.53 for a minimum of 1.78 and a maximum of 2.11, on cognitive anxiety 0.37 for a minimum of 1.00 and a maximum of 2.44, on self-confidence 1.77 for a minimum of 0.67 and a maximum of 2.89.
In table 4, in terms of Somatic Anxiety in the defender’s players we can verify that the results regarding this point are higher on average in the U18 level (mean = 1.79) than in the U20 level (mean = 1.52).

As for Somatic Anxiety (2), the mean of the U18 level (mean = 0.57) is also higher than the U20 level (mean = 0.39). As for the Cognitive Anxiety, the average is higher in the U18 level (mean = 2.39). In the sub-20 the mean is lower (mean = 2.34). In Cognitive Anxiety (2) the average is higher in the Sub-20 (mean = 0.31) than in the Sub-18 (mean = 0.28). Regarding the values of self-confidence, the average is higher in the U20 level (mean = 2.97), overlapping the U-18s (mean = 2.82). In the self-confidence parameter 2 the U-20 gradient (mean = 1.73) presents an average higher than the U-18 gradient (mean = 1.42).

Table 4. Significant statistical values according to level and field position.

<table>
<thead>
<tr>
<th>Teams</th>
<th>U18 U20 Sig</th>
<th>U18 U20 Sig</th>
<th>U18 U20 Sig</th>
<th>U18 U20 Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Somatic anxiety</td>
<td>1.97 1.51 0.005</td>
<td>1.79 1.52 0.33</td>
<td>1.64 1.54 0.49</td>
<td>1.92 1.52 0.16</td>
</tr>
<tr>
<td>Somatic anxiety</td>
<td>0.46 0.59 0.59</td>
<td>0.57 0.59 0.03</td>
<td>0.51 0.64 0.64</td>
<td>0.31 0.64 0.64</td>
</tr>
<tr>
<td>Cognitive anxiety</td>
<td>2.18 2.21 0.79</td>
<td>2.39 2.34 0.31</td>
<td>1.9 2.12 0.16</td>
<td>2.39 2.34 0.31</td>
</tr>
<tr>
<td>Cognitive anxiety</td>
<td>0.23 0.5 0.16</td>
<td>0.28 0.31 0.31</td>
<td>0.16 0.64 0.64</td>
<td>0.28 0.31 0.31</td>
</tr>
<tr>
<td>Self-confidence</td>
<td>3.15 3.15 0.01 *</td>
<td>3.29 3.29 0.01 *</td>
<td>3.29 3.29 0.01 *</td>
<td>3.15 3.15 0.01 *</td>
</tr>
<tr>
<td>Self-confidence</td>
<td>1.57 1.94 0.22</td>
<td>1.42 1.73 0.36</td>
<td>1.76 2.09 0.20</td>
<td>1.42 1.73 0.36</td>
</tr>
</tbody>
</table>

Legend: Values of somatic and cognitive anxiety, and self-confidence according to the team level and field position.

Discussion

In this investigation, it is mainly discussed the themes of somatic anxiety, cognitive anxiety and self-confidence in rugby athletes and having as main variables the comparison of their field sectors (forwards and defenders) and the age groups (Sub-18 and Sub-20). After analysing the results, we verified that the psychological ability with the best results refers to self-confidence. Whether by comparing by levels (Sub-18/Sub-20) or by field sector (forwards/defenders). The psychological ability with more moderate results was the somatic anxiety, both in the field positions and in the age groups.

Comparing by age groups, we can conclude that the rank with the best rates of somatic anxiety control is the U18 level (mean = 1.73), compared to the U20 level (mean = 1.53). Concerning cognitive anxiety, the sub-20 (mean = 2.21) presented better control of cognitive anxiety compared to the U20 level (mean = 1.53). Concerning cognitive anxiety we can see that the forwards at the U20 level (mean = 2.34) have better values of cognitive anxiety control compared to forwards (mean = 2.12), as compared to the U18 forwards (mean = 2.39) presents better control of cognitive anxiety values in comparison with the forwards (mean = 1.9). In terms of self-confidence, the defenders (mean = 2.82) of the U18 are more self-confident than the forwards (mean = 2.7), unlike the U20 where the forwards (mean = 3.29) are more self-reliant than the defenders (mean = 2.97). The study of Váz, Martín, Batista, Almeida and Fernandes (2017) found more favourable results in the group of better classified forwards compared to the less well classified, which in this study was not verified, and did not present statistically significant differences in the backlines, but with higher ratings favouring defenders U18, the best ranked team. Sometimes it’s quite complex to differentiate the above levels by comparing forwards and defenders, since they are athletes with the potential to be elite athletes in the future and normally athletes of this level do not present high levels of anxiety or low levels of self-confidence, but with this study we have been able to find some small differences in the comparison between field positions and in relation to age groups.

In a comparative study conducted by Hanlon, Jones & Mullen (2000), 50 male rugby players aged 22-28 and 50 rifle athletes aged 22-30 showed that anxiety somatic before competition is considered for rugby athletes as a facilitator process, as for athletes shooting with carbine is considered as a debilitating factor. Rugby players found significantly more facilitating the interpretation of both cognitive anxiety symptoms (p < 0.05) and somatic anxiety (p < 0.001) in relation to their performance. There was also a significant difference of high self-confidence (p < 0.01) among Rugby players, a trend that was also respected in the direction of the anxiety pointed out by the athletes interviewed in the present study, feeling favoured in their performance.

In the research presented by Davies (2013), it is based on demonstrating how anxiety symptoms affect the performance of Rugby athletes, having as study variables their field positions (Forwards and Defenders). The explanations are presented in eight causal networks, each one explaining and succinctly dividing the cognitive and somatic symptoms occurring in forwards and defender’s players. In this study about 60% of the forwards players found the concern with competition as a facilitating cognitive symptom. Of these 60%, 20% believe that the course of the game is under their control while the remaining 40% believe it is out of their control. This has resulted in the increase of thought and concerns associated with the opponent, coping strategy of imagining that they were «dominating» the opposition and winning the game. All 60% believed that visualization would provide a greater commitment in the field, which led to a higher rate of work during the game.

About 20% of those in the study identified worrying about others being disappointed with their performance. This has led to an increase in the thoughts of letting teammates down, resulting in better playing visualization, so increase your efforts in the game thereby increasing the rate of work.

In addition, 20% of the identified strikers were also apprehensive about losing the game, causing further thoughts about defeat. Resulting in a viewing strategy in which they defeated, the opposition that led to increased efforts then increased work rates and face counting in the game.

Another 20% of the forwards players declared themselves worried about having a poor performance in the game. This triggered negative thoughts, which led the advanced to imagine in his thinking that he was performing a good game causing, a greater focus of his control and his
predisposition to the task, thus improving performance.

Another 20% of the identified players imagined that they had poor performance, which consequently triggered negative thoughts, which forced them to do the same exercise with opposite thinking. This led the forward to gain a new focus on the game and thus increase their confidence. As for the defenders, about 20% saw it as a facilitating and controlled symptom.

Which consequently resulted in a visualization strategy, imagining himself to defeat the opposition. This has led to greater efforts and therefore increased labour rates. About 40% of the defenders showed that they were not worried about defeat. However, after questioning about 20% of these 40% of respondents, they began to be concerned about this issue. However, all 40% stated that this triggered a strategy of visualizing their team winning the game and the associated feelings that led to greater efforts and increased rate of work in the field, improving their performance.

Around 60% of the defenders were not worried or disappointed with their performance. Of those 60%, 20% mentioned a desire to impress others in the club causing increased motivation and then greater focus on performance. This allowed them to concentrate and increase their rate of work in the game. 40% believe that this kind of thinking brings demotivation to the team, the remaining 20% explained that the thought of letting the teammates down, triggers a winning viewing strategy and a good feeling, which caused a greater effort and rate work in-game to improve performance. Still in this study by Davies (2013), about 20% of the defenders were worried about their poor performance. And about 20% of the defenders believe they can perform better than they have. Which forces the players to think about what they should do to improve as well as the duty to gain a greater positivist spirit. In the research conducted by Dias (2005), of all the psychological abilities evaluated, the trainability, concentration, maximum yield on pressure, absence of worries and personal resources of confrontation, are those that present better results.

Rather than the dimensions of confrontation with adversity, confidence and motivation to achieve and formulate goals and mental preparation, where the values obtained are the lowest in both assessments. Ferreira et. al. (2016), carried out a study of 12 female rugby players aged between 19 and 26 years, to examine the relationships and individual differences of the different motivational orientations, analysing the orientation to the task and ego orientation, as well as the somatic and cognitive dimensions of the cognitive anxiety trait in competitive anxiety scenarios.

As expected, athletes with higher level of task orientation had lower levels of competitive anxiety. The non-parametric correlation between the goal orientation and the independent variable in relation to the number of weekly training revealed the symbolic correlation between the ego orientation and the number of weekly training sessions (p <0.01). It means that increasing the number of weekly workouts increases ego orientation, and increasing the personal skills perspective increases the propensity for social comparisons. In addition, the variable independent of the duration of weekly training is significantly correlated with the cognitive anxiety represented by the concern (p <.05).

Therefore, in the author’s view, increasing the duration of each weekly training, or the number of training sessions also increases the level of concern of the athlete’s experience. For this reason, it is expected that the increased sense of concern will continue to be experienced in competitive environments.

This study points to another reality different from ours. As our sample consists of elite athletes, they are consequently athletes with a higher level of concentration and predisposition for the task of there, the low levels of anxiety and high levels of confidence that they present, however, our study is carried out in a sample that is still in formation, which makes the future of these athletes somewhat uncertain. Instead of the research carried out by Dias (2005) to examine the relationships and individual differences of the different psychological abilities, the somatic and cognitive dimensions of the cognitive anxiety trait, the cognitive and somatic components of the competitive anxiety state, and the self-esteem, having a sample of rugby athletes, aged between 18 and 38 years. Three subscales (self-confidence, somatic anxiety and cognitive anxiety) were evaluated in this study.

Of all the values presented, the highest values were those of Self-confidence (mean = 24.41), with somatic anxiety reaching the lowest values of the three. The development of self-confidence is one of Pizarro’s (2002) methods to lead rugby athletes to obtain a better performance, so the fact that these athletes have a good index of confidence in themselves can then make us predict a good performance in competition. In our study, the concrete results were similar because of all the variables that we studied that we obtained better results was in the parameter of self-confidence and in which we obtained worse results regarding the subscale of somatic anxiety.

Conclusions

After analysing the results, we can conclude that the psychological ability with the best results refers to the parameter of self-confidence. Whether by comparing by levels (U18 / U20) or by field position (forwards / defenders). At all points the best results are presented in this parameter. Regarding the psychological ability with the lowest results was that of somatic anxiety, both in the field and in the age groups, as a positive aspect for competitive performance. Comparatively between the sectors of field we can affirm that according to the results the advanced ones are more self-confident than the defenders however, within the defenders the most self-confident are those of the rank of U20. In the advanced it was also the U20 level that have better rates of self-confidence.

With respect to the somatic anxiety values we can verify that forward players are more anxious than the defenders. Within the forwards section the most anxious group is the U20 level, as well as in the defensive sector. As for cognitive anxiety we found that the forwards are also more anxious than the defenders with respect to this parameter. In defenders, those with the highest levels of cognitive anxiety are the U18, as in the forwards.

We can conclude that although they have better self-confidence rates, the forwards are more anxious than the defenders. As for the ranks we can see that the U18 level reveals better anxiety values and the U20 best self-confidence values. Another of the conclusions that we can draw from our research is that these athletes are already being prepared to be part of the elite and live in the context of high competition, which consequently ends up responding to the low levels of anxiety and high levels of confidence they present.

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