

## PSYCHOLOGICAL PROFILE OF RUGBY PLAYERS-ANALYSIS BETWEEN ATHLETES OF THE U18 AND U20 NATIONAL ELITE TEAMS IN THE POSITIONS OF FORWARDS AND DEFENDERS

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**ABSTRACT:** Anxiety has long been considered as one of the most harmful psychological factors for sports performance, and in this context, the focus in terms of intervention has always been the search for the best strategies and techniques and the development or adaptation of the best programs in trying to lower those anxiety levels (Carvalho, 2007). The objective of this study was to evaluate the psychological abilities of the U18 and U20 elite athletes of the National Portuguese Rugby Team, who participated respectively in the U18 Elite European Championships (2016) and in the U20 World Rugby Trophy (2016), comparing the defenders with the forward players. The three psychological skills under study were basic psychological skills, psychosomatic psychological skills and cognitive psychological skills. Regarding the age groups, the U18 presented better results in the basic psychological skills and in the cognitive psychological skills. The U20 presented better indicators in the parameters of psychosomatic psychological skills. According to the player's positions, forward players had better results in all psychological skills.

**KEYWORDS:** Rugby; Sports Psychology; Psychological skills

### PERFIL PSICOLÓGICO DA ANÁLISE DE JOGADORES DE RUGBY ENTRE ATLETAS DAS EQUIPES NACIONAIS DE ELITE U18 E U20 NAS POSIÇÕES DE AVANÇOS E DEFENDERES

**RESUMO:** A ansiedade foi durante muito tempo considerada como um dos fatores psicológicos mais prejudiciais para o rendimento desportivo, e neste contexto, o foco em termos de intervenção sempre foi a busca das melhores estratégias e técnicas e o desenvolvimento ou adaptação dos melhores programas na tentativa de diminuir esses níveis de ansiedade (Carvalho, 2007).

Este estudo teve como objetivo avaliarmos as habilidades psicológicas dos atletas de sub-18 e sub-20 da Seleção Portuguesa de Rugby comparando os defesas com os avançados. As variáveis analisadas foram as habilidades psicológicas de base, as habilidades psicológicas psicossomáticas e as habilidades psicológicas cognitivas. Os sub-18 apresentam melhores resultados nas habilidades psicológicas de base e nas psicológicas cognitivas. Os sub-20 apresentam melhores indicadores no parâmetro das habilidades psicológicas psicossomáticas. Os avançados apresentam melhores resultados em todas as habilidades psicológicas.

**PALAVRASCHAVE:** Rugby; Psicologia do Desporto; Habilidades psicológicas

### PERFIL PSICOLÓGICO DE LOS JUGADORES DE RUGBY: ANÁLISIS ENTRE ATLETAS DE LOS EQUIPOS DE LA ELITE NACIONAL U18 Y U20 EN LAS POSICIONES DE AVANZAS Y DEFENSORES

**RESUMEN:** La ansiedad fue durante mucho tiempo considerada como uno de los factores psicológicos más perjudiciales para el rendimiento deportivo, y en este contexto, el foco en términos de intervención ha sido siempre la búsqueda de las mejores estrategias y técnicas y el desarrollo o la adaptación de los mejores programas tratando de reducir esos niveles de ansiedad (Carvalho, 2007). Este estudio tuvo como objetivo evaluar las habilidades psicológicas de los menores de 18 y menores de 20 atletas de Rugby Selección portuguesa defensas que comparan con la avanzada. Las variables analizadas fueron las habilidades psicológicas de base, las habilidades psicológicas psicossomáticas y las habilidades psicológicas cognitivas. Los sub-18 presentan mejores resultados en las habilidades psicológicas de base y en las psicologías cognitivas. Los sub-20 presentan mejores indicadores en el parámetro de las habilidades psicológicas psicossomáticas. Los avanzados presentan mejores resultados en todas las habilidades psicológicas.

**PALABRASCLABE:** Rugby; Psicología del Deporte; Habilidades Psicológicas.

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Sport psychology has increasingly shown that the main differences between athletes are not in the physical, technical or tactical issues, but rather in their ability to cope with specific and often stressful situations generated during competitions (Melo and Giavoni, 2010, citing Bara Filho & Ribeiro, 2005). During the last two decades, coaches and athletes from a wide range of sports have realized the importance of the psychological factor for sports performance. More specifically, individuals involved in organized sport have understood that for athletes to achieve maximum performance, they must possess and use a certain number of psychological skills. It is accepted by sports psychologists that to gain mental advantage in performance, it is necessary to apply a program of psychological skills training systematically

over an extended period (Carvalho, 2007, quoting Daw & Burton, 1994). (Cox, 1994; Rolo, 2003) state that athletes possess physical and psychological abilities that allow them to succeed in the sport environment and carry specific tasks in individual and collective sports. These psychological skills allow the approach to a situation of competition with confidence and knowledge that the body and mind are prepared for optimal performance. According to this, most coaches consider that sport is fifty percent mental and, in some sports such as tennis and golf, this percentage increases and can reach values ranging from eighty to ninety percent, however, athletes train physically for ten or twenty hours a week and ignore or devote little time to mental training (Weinberg & Gould, 1995; Williams, 1986; Rolo, 2003). Almost all areas of

human endeavour are somehow affected by anxiety (Levitt, 1967, quoted by Kais, 2005). According to Cozzani et al. (1997) quoted by Lavoura, Castellani, Moreno & Machado (2003) anxiety is an expression of the personality of the individual, and the extent to which it is manifested in a specific situation must be considered in relation to the imposed pressure, at the skill level of the athlete and the nature of the activity. Cognitive anxiety can be defined as the mental component of anxiety and is caused by negative expectations about success or negative self-assessment. According to Morris, Davis and Hutchings (1981), cognitive anxiety is characterized by an apprehensive awareness of unpleasant feelings about oneself or external stimuli. In sport cognitive anxiety is commonly manifested by negative performance expectations as well as negative self-assessment (Martens, Vealey & Burton, 1990, cited by Carvalho, 2007), while somatic anxiety refers to the psychological and affective elements of experience of anxiety that develop directly from autonomous stimuli. Somatic anxiety is reflected in responses such as accelerated heart rate, wheezing, shortness of breath, tightness in the stomach, sweaty hands, and muscle tension (Martens, Vealey & Burton, 1990, quoted by Carvalho, 2007). However, psychological aspects that interfere with the sport phenomenon, such as stress, motivation, aggressiveness, concentration, group cohesion, among others. De Rose Jr., Deschamps and Korsakas (2001) highlight anxiety as one of the most important in determining performance. For these authors, dealing with stressful situations and maintaining adequate levels of anxiety are fundamental for maintaining a state that allows the athlete, besides achieving an acceptable performance, make important decisions in different moments of play in another study, Hanton, Jones and Mullen (2000), with the objective of analysing the intensity and direction of anxiety (interpretation of anxiety as a facilitating or debilitating factor for the competition), according to two types of sport. The types of sports chosen for the study were rugby and shooting. This study was carried out to 50 athletes of rugby and 50 athletes of shooting. In the analysis of the results there were significant differences in the number of rugby players who interpreted somatic anxiety as a performance facilitator rather than athletic athletes who interpreted somatic anxiety as debilitating for sports performance. Already for cognitive anxiety, no significant differences were found. Regarding the intensity of anxiety, both for the cognitive and somatic components, no significant differences were found between the two sports, but the rugby players interpreted both states as facilitators for the performance and reached values higher for self-confidence than shooting athletes.

Rugby is second McLean (1992) cited 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 a two-stroke period of 40 minutes with an interval of 10 minutes between the two periods. The main objective of the game is to win the opponent's defense and take the ball to the end of the field, which is called the "rehearsal area", marking the "rehearsal", which will give that team about 5 points. Each team consists of 15 athletes who are divided into two basic tactical positions "Defenders" (seven players) and "Forwards" (eight players) according to their tactical behaviour played during the match (Batista et al. 2019). However, there are other variables, as Rigou & Thélot (2008) affirmed that Rugby is an international sport, of high physical contact practiced mainly in context XV (Rugby Union), that opposes two teams of fifteen players for eighty minutes. However there are also quite a few other players in the two variants: The Sevens (VII) and XIII (Rugby League). Passos & Araújo (2008) sees in the Rugby game something that is not linear at every instant of time and as such, it becomes difficult to predict exactly what will happen whenever a set of opposing players meets. Consisting of the opposition of two teams with identical goals, 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).

Rugby is a team sport that requires important athlete's individual and collective skills. Besides the great physical capacity required, psychological skills such as concentration, mental strength, as well as flexibility and speed to make decisions are necessary. Factors such as companionship, collaboration and communication can also be stated as essential characteristics of this sport. The current rugby player tends to be stronger and faster both physically and mentally, which requires a lot of physical as well as psychological preparation (Florea, 2003 cited by Dias, 2005). Rugby as a collective sport is played in a normally turf field and outdoors, which allows a wide variety of physiological responses because of repeated short sprints and high frequency of physical contact between athletes. The physiological requirements of rugby, like those

of other sports that originated in football, are very complex when compared to individual sports (e.g. athletics, cycling or swimming), (Duthie et al., 2003, Ferreira, 2012). Freitas (2010) describes Rugby as a contact sport, collective and intermittent, in which high-intensity sprints and frequent contact situations generate a series of complex physiological responses. The large number of actions leads to specific fitness needs and training levels that combine speed, agility, endurance, strength, flexibility, and self-skills (Perkins, et al., 2005; Rugby Ready, 2011).

## MATERIALS AND METHODS

This was a transversal, correlational and descriptive study, where we developed a descriptive statistics analysis, with incidence in the mean and standard deviation of the U18 and U20 teams, between defenders and forward positions. An inferential analysis was establishing to evaluate the support of normality, which led us to use the application of a non-parametric statistic tests. For the comparisons between teams and positions, the Mann-Whitney test was used, taking as significance level values of  $\alpha \leq 0,05$ , for a probability degree of at least 95%.

### Purpose of the study

The purpose of this research was to evaluate the psychological profile of the U18 and U20 athletes of the Portuguese National Rugby Team, to interpret qualitatively the symptoms in the competitive state in the different athletes (forwards and defenders) and respective levels, in their participation in international competitions through assessment of their basic psychological skills, psychosomatic psychological skills, and cognitive psychological skills.

### Instruments

As an analytical tool we used the scale of evaluation of psychological competences (OMSAT 3 - EACP) translated and validated version for the Portuguese language by Silva, Borrego, Moutão, Cid, Timóteo and Dias (2008), with 36 items, basic psychological skills (goal setting, self-confidence and commitment), psychosomatic skills (relaxation, activation, reaction to stress and control of fear) and cognitive psychological skills (mental visualization, psychological training, competitive planning, attentional focus and refocusing of attention).

### Participants

The number of participants were 44 athletes from the Portuguese Rugby Federation, 23 from the U18 team that competed for the U18 European Elite Championship (2016) and 21 of the U20 World Championship U20 Trophy (2016), all aged between 16 and 20 years. With an average age of 16.67 years (sd 0.49 years) in the U18 level and 18.7 years (sd 1.17 years) in the U20 level. Concerning the time of practice all athletes vary from 3 to 14 years, with the U18 level an average practice time of 7.5 years (sd 2.5 years) and the U20 level with a practice average of 8.2 years (sd 2.69 years).

Table 1. Table for the number of participants under study.

	Number of players	Forwards	Defenders
U18	21	9	12
U20	24	14	10
Total	45	23	22

Table 2. Ages and time of practice of the U18 and U20 Athletes Portuguese Rugby Federation.

	U18		U20	
	Time of practice	Age	Time of practice	Age
Minimum	3	16	4	16
Maximum	12	17	14	20
Mean	7,5	16,67	8,2	18,7
Standard deviation	2,5	0,49	2,69	1,17

## RESULTS/OBSERVATION

According to basic psychological skills in table 3, the best parameter refers to self-confidence (mean = 6.07), whereas the parameter with lower values corresponds to goal setting (mean = 5.31). Now, we have found that in relation to the basic psychological skills, the U18 level registers higher values in all parameters. Comparing with the field sectors in all the parameters, the forwards present superior values than the defenders except in the commitment variable where is similar. As for the psychosomatic psychological skills, the parameter

with the highest positive value corresponds to the relaxation (mean = 5.05) and the worst outcome corresponds to the reaction to stress (mean = 2.83). After the analysis of these psychological skills presented in table 4 we found that the U20 players presents superior values with respect to the relaxation, reaction to the stress and control of the fear, already the U18 present superior values with respect to the U20 in the activation. In the different sectors of the field, the forward ones present superior results related to the activation, relaxation and fear control. However, the forward ones presented better results regarding the reaction to stress. Finally, we analysed the cognitive psychological skills presented in table 5, where we found that the best results presented are related to mental visualization (mean = 5.01), while the parameter with the lowest results corresponds to the attentional focus (mean = 2.49). After the analysis of table 5, we verified that the U20 level presents better results in relation to the attentional focus, while the U18 present superior results regarding to the mental visualization and the refocusing of attention, psychological training and competitive planning. By sector of field we can verify that the forward players present superior results once compared to the defenders with respect to the mental visualization, psychological training and competitive planning. The defenders presented higher results than the forwards only in the parameter of the attention focus.

Table 3. Basic psychological skills.

	Team			Team			Team		
	U18	U20	Sig.	U18	U20	Sig.	U18	U20	Sig.
				Defenders	Defenders		Forwards	Forwards	
Relaxing	4.81	5.05	0.62	4.5	5.25	0.24	5.2	4.91	0.52
Activation	5.1	4.9	0.29	5.03	4.96	0.57	5.2	4.86	0.68
Stress reaction	2.83	4.3	0.01	2.94	4.04	0.88	2.7	4.46	0.24
Fear control	3.41	4.74	0.01	3.44	4.79	0.99	3.36	4.72	0.79

Table 4. Psychosomatic psychological skills.

	Team			Team			Team		
	U18	U20	Sig.	U18	U20	Sig.	U18	U20	Sig.
				Defenders	Defenders		Forwards	Forwards	
Mental visualization	5.01	4.93	0.85	5	5.08	0.88	5.03	5.08	0.52
Psychological training	4.86	3.98	0.01	4.63	3.67	0.53	5.09	4.19	0.38
Competitive planning	4.68	4.38	0.15	4.5	4.72	0.61	4.88	4.72	0.07
Attentional focus	2.49	4.46	0.01	2.69	4.12	0.08	2.7	4.69	0.24
Refocusing of attention	3.8	3.38	0.05	3.72	3.58	0.09	3.72	3.17	0.98

Table 5. Cognitive psychological skills.

	Team			Team			Team		
	U18	U20	Sig.	U18	U20	Sig.	U18	U20	Sig.
				Defenders	Defenders		Forwards	Forwards	
Mental visualization	5.01	4.93	0.85	5	5.08	0.88	5.03	5.08	0.52
Psychological training	4.86	3.98	0.01	4.63	3.67	0.53	5.09	4.19	0.38
Competitive planning	4.68	4.38	0.15	4.5	4.72	0.61	4.88	4.72	0.07
Attentional focus	2.49	4.46	0.01	2.69	4.12	0.08	2.7	4.69	0.24
Refocusing of attention	3.8	3.38	0.05	3.72	3.58	0.09	3.72	3.17	0.98

### CONCLUSIONS

In this research, we analysed the psychological profiles of the U18 and U20 athletes of the Portuguese Rugby Federation through three psychological skills, basic psychological skills, psychosomatic psychological skills and cognitive psychological skills, comparing these results by field sectors between forwards and defenders) and by levels, U18 and U20. The results showed that when comparing all U18 and U20 teams, significant differences were observed

among them, specifically in the skills of psychological training, attentional focus, refocusing of attention, self-confidence, stress reaction and fear control. When comparing the players by field positions, no significant differences in expected skills were observed, as was observed for the teams overall. We will detail the main results in the continuation of the text. In the scope of the basic psychological skills we conclude that the parameter with the best results corresponds to the self-confidence variable, compared by field sectors or by levels. The field with the worst results corresponds to the goal setting, also compared by levels and by field sectors. At the U18 level we can see that they generally dominate the basic psychological skills rather than the U20 level, the only value analysed. Regarding the field positions, we can say that the forwards present better results than the defenders in all the parameters, but at the level of the commitment the values are similar in both sectors. In the psychosomatic psychology skills its observable that the parameter with higher values correspond to the relaxation by both levels and field sectors, and the worst is the reaction to stress, comparing by level or by field sector. After verifying this psychological skill, we conclude that the U20 level presents better results than the U18 level, although the U18 present a greater task activation, the U18 are more relaxed, react better to stress and have better control of fear. By field sector we conclude that the forward ones present better results than the defenders, being more relaxed, more active for tasks, react better to the stress and have a better fear control. However, defenders have better fear control than the forwards. As in the study by Vaz et al. (2017) where the forward ones have better levels of activation and relaxation compared to the defenders. Regarding cognitive psychological skills we conclude that the variable with best results is the mental visualization, except for the forwards where its better variable is the psychological training. The parameter with the lowest results corresponds to the attentional focus, either by levels or in field sectors.

The posthumous conclusions to the analysis of the results presented in table 5 refers that the U18 level had superior results than the U20 with respect to the cognitive psychological skills because they present superior results according to the mental visualization, psychological training and planning competitive and refocusing of attention, but the U20 level presents superior results within the attentional focus. As for the filed sectors we can verify that the forward ones are superior in this psychological skill, related to the defenders, in all the parameters except for the refocusing of attention where the defenders are superior. Instead of the investigation by Vaz, et al. (2017) the defenders, have better mental visualization indexes than the forward ones, but according to competitive planning as evidenced in our study the forward players had better levels than the defenders. According to several investigations based on this subject, allows us to make some comparisons. In a study conducted by Mahl and Raposo (2007) with 529 professional soccer players from the several divisions of Brazilian soccer. And for the accomplishment of the investigation the authors carried out a questionnaire denominated of PPP (Psychological Profile of Provision). The questionnaire consists of 42 items grouped into 7 factors: self-confidence, negativism, attention, mental visualization, motivation, positive thoughts, competitive attitude. PPP responses are given on a 5-point Likert scale (1 = "almost always" to 5 = "almost never"). The evaluation of the answers is obtained by calculating the average of the items corresponding to each scale. As in our study, the variable that presented superior results was self-confidence, namely in Goalkeeper position (mean = 3.07) and in midfield athletes (mean = 3.15). However, if we verify the average of some of the parameters like those of our investigation only with Brazilian first division athletes in the parameter of self-confidence, the values of self-confidence are (mean = 4.42). Carvalho (2007) carried out a study with a general objective to perform a description and a psychological characterization of athletes of Basketball, Volleyball, Hockey, Badminton, Table Tennis, Handball and Judo, participating in the respective national championships, 2006/2007, a questionnaire called ACSI-28 was used to carry out this research.

In this study, the mean number of athletes in terms of concentration was about 6.93, already in the attention focus in the analysis of the psychological profile of the athletes studied by us, who presented an average of 3.40. Regarding goals achievement and mental preparation, the athletes presented an average of 5.56, compared to the so-called psychological training (mean = 4.45) and competitive planning (mean = 4.54).

According to these results its observable that U18 levels of basic psychological skills and cognitive psychological skills present better indicators, and in psychosomatic skills the U20 perform better. With respect to the field sectors the forward ones present better results in the basic psychological skills, the psychosomatic psychological skills and the cognitive psychological skills.

Another of the conclusions has to do with the short research carried out according to this theme. In Rugby, or in any other sport, it is essential that the psychological component of your athletes is well developed. More and more research is needed in order to be a developing tool in Rugby and its athlete's, especially in Portugal.

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