

# Motivation and Anxiety with Portuguese Women's Rugby Sevens

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## Palavras-chave

Orientação para o Ego,  
Orientação para a tarefa,  
Ansiedade competitiva,  
Rugby Feminino

## RESUMO

A literatura disponível revelou uma tendência para a análise da motivação e ansiedade em atletas de alto rendimento. No entanto, existe uma lacuna no corpo de conhecimento da motivação e traços de ansiedade em atletas femininas de Rugby. Este artigo pretende examinar as relações e as diferenças individuais das diferentes orientações motivacionais, analisando a orientação para a Tarefa e a orientação para o Ego, tal como as dimensões somática e cognitiva do traço de ansiedade cognitiva em cenários de ansiedade competitiva. Foram aplicados os instrumentos de medida: questionário “Orientação Motivacional do desporto” e o questionário de “Reações à Competição”, que foram correlacionados entre si com as variáveis independentes: idade, posição, clube, anos de experiência, internacionalizações, número de sessões de treino e a carga horária do Micro-ciclo semanal. A relação entre variáveis foi apreciada pelo coeficiente de correlação de Spearman's rho, sendo considerados valores  $p < .01$  e  $p < .05$ . Participaram 12 atletas femininas da Seleção Nacional Portuguesa de Rugby de 7's. Os resultados revelaram que a orientação para a Tarefa sobrepõem-se à orientação para o Ego, o que reflete uma interpretação da preocupação (ansiedade cognitiva) como um facilitador, invés de debilitador.

## KEYWORDS

Achievement Goal theory,  
Task and Ego Orientation,  
Competitive Trait Anxiety,  
Portuguese Women's Sevens

## ABSTRACT

Researchers have previously examined motivational goal setting and anxiety among high-level athletes because they are considered important variables in sport performance. Since Rugby Sevens was included in the 2016 Olympics, research interest in rugby Sevens increased significantly. However, the focus has been mainly on the physical demands of the competition (e.g. Hogarth, et al., 2016). Rugby Sevens as a sport for women in Portugal is novel, womens rugby competition only started to win more consistency at the beginning of the 20th century. The sample was composed of 12 female athletes that represent the Portuguese Women's Sevens (PWS) squad. The purpose of the current exploratory study was to measure athletes' goal orientations using Task and Ego Orientation in Sport Questionnaire – TEOSQp (Chi & Duda, 1995) and the anxiety multidimensional subscales cognitive and somatic trait anxiety in sport using Sport Anxiety Scale SAS-2 (Smith, Smoll & Schutz, 1990). The relationships between goal orientation and anxiety variables was analysed by non-parametric correlations using the Spearman's rho coefficient and numerical variance for normality was analysed using Shapiro-Wilk Test. The results revealed that the athletes were high in task goal orientation ( $X = 4.40$ ) and low (for H-P) in ego goal orientation ( $X = 2.88$ ); there was a significant positive correlation between ego goal orientation and quantity of weekly sessions and a positive correlation between worry (anxiety dimension) and the duration of weekly sessions. As expected players' task goal orientation was correlated with low competitive anxiety. These findings are discussed in light of the literature and suggestions are made to contribute guidance from the Head Coach and Technical Director in how these psychological dimensions can influence the development and performance of female Rugby Sevens players.

## INTRODUCTION

There is a dearth of studies examining Portuguese Rugby coaches and players, especially in the field of sport psychology. Furthermore, there is a lack of published research on Women's Rugby worldwide, which is understandable in light of its recent emergence into the international arena. Examining why Portuguese women play rugby and how athlete emotional states, in this case anxiety, in High-Performance (H-P) environments could provide rugby coaches and coach educators with important information to guide policy and practice. Thus, to examine dispositional motivation and anxiety in such an under-examined setting, capturing the motivational sources and emotional traits in a sample of Portuguese Womens Sevens (PWS) player. National Female players seems relevant. Notably, the specificity of different emotional states may be determined by athletes' goal orientation (e.g., Duda, et al., 2007). Specifically, we were interested in examining how anxiety influenced women in Rugby Sevens H-P and how different goal orientations can play a role in anxiety interpretation in PWS athletes. The purpose of this study was to examine how the relationship between trait motivation and anxiety and other related variables (e.g., training frequency and duration).

The focus of anxiety research has been directed to emotional states (Jones & Hanton, 2001; Mellalieu, et al., 2003; 2006) rather than trying to connect emotions with goal orientations. Moreover, the gap between the performance levels achieved during practice and competition is a common sport dilemma. In the pursuit of sporting success it is taken for granted that mind and body are inseparable entities. Florean (2003) argues that rugby players tend to connect amongst each other not only in a physical way but also in a specific psychological way. Therefore, athletes' preparation in both dimensions is crucial for a better insight and approach to coaching.

Women's Rugby has experienced an exponential growth, in the last decade. This is supported by the figures released by World Rugby, showing global female participation increased from 1.50 to 1.77 million in 2014. This increase in rugby players as also been observed in Portugal. Indeed, Resende et al. (2015) argue that from national female players' statistics, 2014 was characterized by a remarkable increase in Portuguese female athletes in all sport communities.

With the prospect of competing for an Olympic medal at Rio 2016, it is unsurprising that there has been a global concern in the development of women's Rugby across world unions. Furthermore, not only the senior team achieved a reasonable good position in the international ranking, but also the Portuguese Rugby Federation (FPR) has created a Women's under18 squad in 2014. In fact, their

recent achievements are promising. In the first year, they were in 6<sup>th</sup> at the U18s European Championship EC in Sweden and recently they achieved 4<sup>th</sup> place in the EC Belgium (2015). The majority of the U18 players may comprise the senior squad attempting to qualify for the Tokyo Olympics in 2020. The FPR national development director argues that despite the increase in player numbers, the public profile of Rugby in Portugal remains relatively low (H. Rocha, personal communication, June, 2008).

Rugby Sevens competitions provide a context where athletes are exposed to ongoing fatigue (five to six matches played over one to three days) and consequently affect psychological states, which may have detrimental consequences for performance. For example, increased concentration disruption and well-being (Johnston, et al., 2013; McCarthy, et al., 2013). Furthermore, the increasingly professional nature of Rugby Sevens may lead to an emphasis placed winning at-all-costs, rather than promoting development.

Motivation is considered an important factor in sport participation and performance. What drives players to play and pursue excellence has often been pursued in the sport psychology literature (e.g., Mallett & Hanrahan, 2004). In research literature, one of the main landmark made by Nicholls (1984) was when he presented the cornerstone for the Achievement Motivation Theory (goal orientation), leading to the foundation of the Achievement Goal Theory (AGT: Nicholls, 1984). Since then, AGT has become one of the most widely accepted socio-cognitive theories (Roberts, 2012).

In relation to sport, this phenomenon contribute for how personal judgements interpret success. In other words, it mainly adopted to describe the perception of how most athletes' goal orientations relate to their concepts of ability and, more broadly, how athletes assess competence. "Variations in goal perspectives, or ways in which individuals judge their competence and define successful accomplishment, are critical antecedents to variations in motivational processes" (Duda, 2001, p. 129).

The kernel of AGT as a social-cognitive theory is represented as the individual perception of achievement behaviour in the personal cognitive meaning to perceived success and failure (Maehr & Nicholls, 1980; Maehr & Braskamp, 1986; Dweck & Leggett, 1988; Duda & Hall, 2001). Two ways as athletes can judge ability: ego-orientation, where athletes perceive their abilities in comparison with other athletes (i.e., normative referenced); and task-orientation, where athletes' perception of improvement is built from personal development (i.e., self-referenced).

Duda (1989) introduced AGT into sport research, developing a measurement instrument through correlational design: Task and Ego Orientation in Sport Questionnaire (TEOSQ, Chi & Duda, 1995; Duda & Whitehead, 1998). The TEOSQ is widely

used as a valid and reliable instrument, applied in the current study. Recent research by Guan, Xiang, McBride, and Keating (2013) suggests TEOSQ results have important implications for coaching and educational processes, particularly with regard to promote particular goal orientations in athletes. In other words, task-oriented athletes are those who perceive motivational patterns from experience and personal improvement, independent of their perception of ability. Further, Elliot and McGregor (2001) found that task approach goals correspond positively to perceptions of a task-motivational climate (e.g. goal standards for a specific period of time for monitoring and improvement; athlete involvement in decision making; challenging and diverse training activities), intrinsic motivation, and the belief that sport competence is an attribute that can be enhanced through effort and training. Recently, scholars have found that while the competition and training context may be related to different goal orientation patterns, a task-orientation (mastery) is paramount in any achievement situation in order to develop any type of talent independently of context (van de Pol & Kavussanu 2011; 2012).

Furthermore, other sport psychology researchers affirm that task-orientation is related to positive the motivational outcomes: (a) belief that effort is a cause of success, (b) improved problem-solving and adaptive learning strategies, (c) enjoyment, (d) satisfaction and intrinsic interest (Duda, 2001; Duda, Cumming, & Balaguer, 2005; Roberts, Treasure, & Kavussanu, 1997). In contrast, an ego-orientation has been found to be associated with negative outcomes such as a sense of discouragement and blaming external factors, which is reflected in reported anxiety (Duda, 2001; Roberts, et al., 1997). Meanwhile, athletes who are ego-orientated demonstrate adaptive achievement motivation patterns when they possess highly confident perceptions of their abilities, relying mainly on social comparisons as the source of such perception. They focus on how they can prove rather than improve themselves. However, their motivational patterns are often maladaptive (unstable) when they doubt their competence, especially when they perform at a high-level but possess low mastery (task-orientated), thus leading to potential burn-out or drop-out (Papaioannou, Zourbanos, Krommidas, & Ampatzoglou, 2012). For this reason, the development of task and ego goals rests on a complex interaction of cognitive-developmental and socio-environmental factors (Harwood & Swain, 2001).

Furthermore Duda (2001) argued that when evaluating whether athletes are optimally motivated or not to target the positive outcomes of motivated athletes, it is important to take into account: (a) goal orientation, (b) fulfilment of psychological basic needs, (c) motivation levels, (d) how anxiety influence performance, (e) indices of athletes'

mental and physical welfare, (f) other indicators of optimal functioning (e.g., imagery, strategies the remain focused).

Notwithstanding this, athletes have the flexibility to focus on either task or ego goals during different times in their training or performance to enhance their motivation (Duda, 2001). Nicholls (1989) argues that achievement goal orientations are not polar opposites, they are orthogonal. Athletes who are high in both task and ego-orientation have multiple sources of judging their success and perceived competence. This orthogonality, led a number of leading sport psychologists to contend that a high ego-orientation may not in fact be detrimental to performance (Duda & Hall, 2001). To note, this orthogonality can work in both high and low dimensions. Specifically, athletes can be high task-oriented and high ego-oriented or low task-oriented and low ego-oriented for combination of task and ego.

Indeed, it is hard to see how an individual could succeed, particularly in H-P context, without having a strong ego-orientation. As stated by Duda (2001), "the literature suggests that a larger percentage of elite athletes are high in both task and ego orientation rather than low in both or high in one and low in the other" (p. 132).

Research examining goal profiles by Burton and Weiss (2008) contribute to understand how both goal orientations are fundamental to achieve success, mainly in H-P. In different contextual factors, personality influence different motivational involvement patterns. In line with AGT, Burton and Weiss (2008) argue that athletes can be Performance-Oriented (PO) where despite being orthogonal (high in task and ego orientations), task tends to be more predominant; Success-Oriented (SO) share the same orthogonality however, with an ego predominance and finally Failure-Oriented (FO), with an orthogonality in the opposite direction (low in task and ego orientations). PO athletes are self-referenced, high in self-confidence and pursue success according with the ability to be Mastery-Oriented (MO) using learning has the ultimate goal to improve performance in an amaranthine and everlasting process, commitment is normally perceived in the highest dimension.

On the other hand, SO defined success based on social comparison and self-evaluation according to personal results. In fact, the amount of effort SO apply in a Task is dependent on how much is required to win. PO athletes tend to set performance improvement, process goals that goes in line with the concept of growth mindset (Dweck, 2000) and SO set outcome goals, which can be related with fixed-minded (Dweck, 2000). Indeed, SO athletes have athletic ability slight higher than PO, however PO maximizes their capabilities in the long-run, achieving greater career success. Finally, FO athletes tend to be low in self-confidence, avoid

social expose mainly due their lack of ability, Mastery-Avoidance (MA) and inefficient use of goal settings (Burton, et al. 2013).

A high task and ego orientations profile enables an athlete to buffer against the negative consequences of poor performances when judged against the performance of others. A higher task goal orientation might provide a safety net for athletes in performance sport when results are considered has the primary goal, such as H-P.

Different motivational orientations are connected with different anxiety states and traits. Martinent, et al. (2012) studying the emotional process of 11-experienced table-tennis players and identified anxiety as one of the most frequent emotions by participants. Anxiety is commonly represented as a negative emotional *state* where arousal and apprehension are manifested through a mood change (e.g., Berger, et al., 2002). This state anxiety is characterized as a cognitive (thought component) or a somatic (physical symptoms), not necessarily a change in physical activation but rather the self-awareness of such change.

The source of *state* anxiety can also depend on *trait* anxiety, related with the personal experiences shaping the athlete personality. Athletes' level of *trait* anxiety greatly influence how feelings such as worry and concentration disruption (cognitive) have an impact in the way a person perceives the world. Those who have high trait anxiety tend to perceive more self-evaluative situations (task-orientation), mainly through deeper and more accurate self-reflections as opposed to those with low trait anxiety (ego-orientation).

There is an assumption that anxiety is associated with poor performance, however research has challenged this assumption (Hanin 1980, 1986; Jones et al., 1994; Raglin, 1992; Raglin & Hanin, 2000). This quantum of research has shown that the way individuals interpret (appraise) anxiety may vary depending upon several factors, including the importance of the event, goal orientation, and the appraisal processes (Jones, 1995; Jones et al. 1994). Hence, anxiety might be appraised as helpful for performance (facilitative) or as harmful for performance (debilitative), which lead to different behavioural outcomes. Therefore, to fully understand how anxiety intensity and direction has an influence on an athlete's performance, a useful variable to consider is goal orientation and athletes' anxiety interpretation.

Whether, the resulting anxiety state is perceived as facilitative or debilitative will depend on the athletes' goal orientation. Hanton and Jones (1999) found that parents, coaches, peers and experience played a significant role in how swimmers perceive facilitative anxiety. Consequently, these athletes developed goal-setting strategies, imagery and self-management that allowed them to manage anxiety in a positive way.

Admittedly, athletes' self-awareness, capacity to control anxiety (coping resources), and confidence are closely related with differences in personality traits, which are based in different goal orientations. However, the full concept on how athletes' perceive anxiety is not only influenced in their goal orientation, but also in the coach "modus operandi" to create the environment and guide athletes to match their needs (Smith, et. al. 2007).

As mentioned previously, considering how professionalization has brought a tendency to increase ego-orientation, especially in H-P contexts, the emotional impact on athletes tends to be amplified when high valued goals are at stake (e.g., winning; Lazarus, 2006). Thus, athletes are expected to experience a considerable amount of anxiety, which for some, can be interpreted as a positive stimulus and an indicator of optimal performance, increasing the concentration span and predisposed to execute in an optimal level (e.g. the feelings shared inside of a team sport locker room before a important match).

According to Mack and colleagues (2016), what distinguish the 'good' from the 'great' athlete in elite sport are strong self-motivation and the way athletes cope with anxiety. The reasonable notion on how facilitative anxiety is interpreted before and during competition is reasonably dependent on their motivational orientation. A task-oriented athlete possesses a desire for demanding challenges, interpreting them as learning situations. Therefore, we may infer that the way task-oriented (mastery) athletes interpret anxiety is as a facilitator leading to superior performance (e.g. the ability to learn from the mistake instead of getting upset, can be interpreted as success) while ego-oriented athletes tend to interpret anxiety as a debilitator, leading to poor performance (e.g. the main athletes average perform well-learned skills effectively when they fully concentrate in the task and not on results or others). Craft and colleagues (2003) argue that two personality traits that consistently relate to heightened state anxiety reactions are high trait (cognitive) anxiety and low self-confidence. Competitive anxiety has been considered as a significant construct that holds a special interest for sports coaching scholars. Woodman and Hardy (2001) support that if the expectation of demonstrating low ability becomes chronic, it may lead to constant and high levels of anxiety and loss of interest in the activity; that is to say, amotivation. This is reinforced by Duda, Balaguer, Jowett, and Lavalley (2007) who concur that an ego involving motivational environment has been linked to greater anxiety.

According to Smith, Smoll, and Schutz (1990) there are three main components of anxiety that can be measured: somatic and cognitive with the subscales: worry, and concentration disruption. Somatic anxiety is the perceptions of physical symptoms

## METHOD

### Participants

Data were collected from a sample of 12 female athletes from the PWS senior squad as well as competing locally in the Portuguese female 1<sup>st</sup> division, aged between 19 and 26 years ( $M = 21.1$ ,  $SD = 1.96$ ). Half of the participants (six) are characterized by an average on two to four years' rugby experience, one to two international caps and a practice load of four weekly sessions of 90 minutes each. Meanwhile, the other half of the participants (six) had five to ten years' experience in the sport, holding an average of three to six international caps and practice between two, three or even five times a week, with the average duration of more than 90 minutes. The sample size ( $n = 12$ ) represent the entire PWS squad.

### Instruments

The first questionnaire applied was the translated version (Cruz & Viana, 1997) of the 'Reactions from Competition' questionnaire (Smith, Smoll & Schutz, 1990). In this questionnaire, trait anxiety was analysed through Sport Anxiety Scale 2 (SAS-2). SAS-2 aims to assess individual differences in measuring somatic anxiety and the two-dimensions of cognitive anxiety; namely, worry and concentration disruption.

The questionnaire consists of three sub-scales, which measure the levels of somatic anxiety (9 items), worry (7 items) and concentration disruption (5 items) in competition. Athletes responded on a four-point Likert scale, containing the follow anchors: (1 = *not at all*, 2 = *a little bit*, 3 = *pretty much*, 4 = *very much*), to set the anxiety level they felt before and during competition. Overall, the results of the summation of Somatic Anxiety (0 – 36), Experiential Thoughts (0 – 28) and concentration levels (0 – 20) reflect the trait competition anxiety level.

Smith and colleagues (2006) reported internal consistency (Cronbach's alpha) coefficients exceeding .80 for all subscales, plus alpha = .91. In the current study all the 15 items, yielding the total trait anxiety score, stratified Somatic Cronbach's  $\alpha = .696$ ; Worry Cronbach's  $\alpha = .852$ ; concentration disruption Cronbach's  $\alpha = .703$ . This internal consistency match Smith et al. (2006), accuring the application of the measurement tools for the sample in the current study (Ho, 2014).

A additional instrument was applied to assess goal orientations, based on motivational Task and Ego Orientation in Sport Questionnaire (Chi & Duda, 1995). It was translated into a Portuguese version TEOSQp (Fonseca, 1999) and further adapted transculturally (Fonseca & Brito, 2005). The

(Martens, et al., 1990). Recent findings reveal a high correlation between a task-involving motivational climate and the cognitive features of anxiety: worry and concentration disruption (Más, et al., 2012). Academics have also argued that an ego-orientation has been linked to greater fear of failure, stronger beliefs on fixed sport ability, perceptions of an ego-involving climate, heightened anxiety, lower intrinsic motivation, and greater amotivation (Conroy, et al., 2006; Cury, DaFonseca, Rufo, Peres, & Sarrazin, 2003; Morris & Kavussanu, 2008; Nien & Duda, 2008). For this reason, the critical implication that motivation and anxiety has in athlete development, lead to the primary reason for this study, specifically in the PWS squad.

Another essential factor particularly relevant to this research study is the relevance of gender. Is there any goal orientation distinction between genders and the social environment context? McClelland (1961) support that, achievement motivation varies significantly across cultures and between men and women. Research has shown that females tend to make more external attributions (ego-orientation) and that attribution patterns change with age (Marsh & Jackson, 1986).

Conversely, Duda and Whitehead (1998) argue that men ( $n = 1.331$ ;  $M = 3.05$ ,  $SD = .80$ ) tend to score higher mean ego-orientation in comparison with women ( $n = 1.285$ ;  $M = 2.285$ ,  $SD = .78$ ). These authors, also reported negligible discrepancies on men ( $n = 4.11$ ,  $SD = .49$ ) and women ( $M = 4.18$ ,  $SD = .47$ ) on task-orientation.

After a decade, Abrahamsen and colleagues (2008) also reported that Elite Female athletes reported higher level of somatic anxiety and performance worry and concentration disruption than male. They argued that females with higher perceived ability tend to be less stressful and anxious in competition contexts than males. In addition, Grossbard, Smith, Smoll and Cumming (2008) also reported similar findings however with youth sport participants (9 – 14 years old). In line with these findings, we outlined our predictions that PWS squad will achieve higher task-orientation predominance.

Furthermore, Jones et al. (1991) showed that female athletes exhibit higher levels of cognitive anxiety during the week before competition, in comparison with male athletes. However, we support that regardless of gender distinctions, goal orientations and the context have a considerable effect on how athletes perceive emotions, such as anxiety. Besides the two achievement goal orientations, some publications (e.g., Stuntz & Weiss, 2009) suggested the inclusion of social-approval orientation as a goal in achievement situations. As this concepts, has not received much attention in the literature to date, the present study intend to provide a contribution for sports psychology and PWS squad.

TEOSQp evaluates task and ego orientation through the perception of success in sport contexts, in AGT (Nicholls, 1984). Further, the questionnaire used 13 items with a five-point Likert scale, which varied between, 1 = *totally disagree* to 5 = *totally agree*. There were two subscales: task-orientation (7 items, e.g. “when I do as much as I can”) and ego orientation (6 items, e.g. “when I am the best of all”). The total result is provided from the summation for each sub-scale.

According with the psychometric properties of the TEOSQp, the reliability was analysed using Cronbach’s alpha is task Cronbach’s  $\alpha = .657$  and ego Cronbach’s  $\alpha = .871$ . Representing a powerful internal consistency, matching Fonseca e Brito (2005).

**Variables**

The Dependent variables are the athletes’ motivational task and ego orientation, competition *trait* anxiety (associated sub-classes). The Independent variables are the athletes’ personal specifics, including age, rugby experience (years), national playing experience, international playing experience, quantity of weekly sessions and duration of weekly sessions.

**Procedures**

**Data Collection**

The questionnaires were administered during a National PWS squad training camp. Prior to data collection, informed consent was given with details regarding the project aim, the confidentiality, optional participation and the process to fill out the questionnaires.

**Data Analysis**

In regard to the number of the sample ( $n = 12$ ), we considered it more appropriate to use non-parametric correlations and test their numerical variance for normality using Shapiro-Wilk Test (1965), has recommended by a strong body of research (e.g., Ho, 2014) (see Table 1). Spearman’s rho and the significance interval  $p \leq .05$  was taken in consideration. In addition, a preliminar analysis was made to look for missing values and or outliers. From this analysis, we found the inexistence of missing values or outliers, which preserved the original amount of the sample. The analysis were analysed using SPSS 23.0.

Table 3. Non-parametric descriptive analysis of Sport Anxiety Scale 2 (SAS-2)

Variable / Anxiety Sub – Scales	Intensity		Direction	
	IM	M (SD)	IM	M (SD)
Somatic	1.37 – 1.96	1.66 (.46)	(-1.34) – .14	-.60 (1.17)
Worry	2.10 – 2.99	2.55 (.69)	(-.58) – .84	.13 (1.12)
Concentration Disruption	1.19 – 1.63	1.41 (.34)	(-2.33) – (-.36)	-1.35 (1.54)

Note. IM = confidence Interval for Mean, M = Mean and SD = Standard Deviations

Notably, the coefficients of correlation show significant correlations between several dimensions of TEOSQp and SAS-2 (Table 4: .341, .321, .453). As expected, the athletes with higher levels of task-orientation presented lower levels of competitive anxiety.

Table 4. Non-parametric correlations: Goal orientations with anxiety intensity and direction

Goal Orientations / Anxiety Sub scales	Intensity						Direction					
	S	<i>ρ</i>	W	<i>P</i>	CD	<i>P</i>	S	<i>p</i>	W	<i>p</i>	CD	<i>p</i>
Task Orientation	.341	.278	.321	.308	-.004	.991	.182	.925	.177	.470	.212	.850
Ego Orientation	-.271	.393	.057	.861	-.344	.273	.453	.139	.014	.965	.336	.285

Note. S = Somatic, W = worry and CD = Concentration disruption, correlation is significant at the 0.05 level  $p =$  Sig. (2-tailed) in Spearman's rho correlation coefficient.

The non-parametric correlation between goal orientations and the independent variable regarding the amount of weekly sessions (see Table 5), revealed a symbolic correlation between ego-orientation and quantity of weekly sessions ( $p < .01$ ). Meaning, that increasing the quantity of weekly sessions, the PWS ego-orientation increase, increasing their own perception of their abilities and increase the propensity for social comparisons. Moreover, the independent variable of duration of weekly sessions correlates significantly with cognitive anxiety represented as worry ( $p < .05$ ) (see Table 6).

This suggests as the duration of each weekly session increases, so too does the level of worry the athletes' experience. For this reason, it is expected that the increased sense of worry will continue to be experienced in competition environments.

Table 5. Non-parametric correlations; Goal orientations with the independent variable: Quantity of Weekly sessions (QWS)

Goal Orientations / Independent variable	QWS	P
Ego Orientation	.775**	.003
Task Orientation	.382	.220

\*\* Correlation is significant at the 0.01 level  $p = \text{Sig. (2-tailed)}$ , Spearman's rho correlation coefficient.

## DISCUSSION

Research suggests that goal orientation is closely related to how the coach fosters a motivational climate thereby influencing performance and how athletes perceive anxiety. It is this phenomenon that provided the impetus for further research in the field of sport psychology.

### Goal Orientations

Because PWS athletes are predominantly task-oriented with a significantly low ego-orientation, they demonstrate their persistence on achieving team and personal goals, judging success through consistent high levels of performance, taking advantage of them as learning opportunities. This fact lead to the importance of orthogonality mainly in H-P. Therefore, low ego-orientation in PWS can be interpreted from six main factors:

(a) as argued before women tend to score less in ego-orientation (e.g., Duda & Whitehead, 1998); (b) PWS despite playing at an elite level, there are no full-time professional players, which may reduce their ego-orientation, (c) there is a lack of competitiveness in the female national championship (absence of social comparisons); (d) the lack of international experience may influence their low ego-orientation and finally (e) the duration of weekly sessions.

Similar results were obtained by, Hirota and De Marco (2006), using TEOSQ, where a University female soccer squad ( $n = 19$ ), reported a mean task-orientation score of 4.28. These authors concluded that the perception of skills and abilities is enhanced through self-referencing and setting achievable realistic goals. The present findings support this research.

Rugby is characterised as an open skill sport, meaning that creativity influences the athlete and team performance in an interactive and ever changing environment. It is common to accept that squads are made up of individuals with different personal traits. Thus, can be beneficial in several ways, for example, how a team pursues goals. If a squad has a task-orientation predominance (PO), it is expected that the athletes with more ego-orientation (SO) tend to increase their predisposition to task-orientation (Burton, et al. 2013). Moreover, in repeated failures SO tend to become more destructive and emotional-focused. In addition, the ability to set goals that focus on the process of performance rather than the outcome is critical to success (Durand-Bush, & Salmela, 2001).

Table 6. Non-parametric correlations: Somatic (S), Cognitive anxiety: worry (W) and Concentration disruption (CD) with independent variable, Duration of weekly sessions (DWS)

Independent variables / Anxiety subscales	Intensity				Direction							
	S	P	W	P	CD	$r$	S	$r$	W	$r$	CD	$r$
Duration of weekly sessions	.031	.924	.685*	.014	.295	.353	.180	.575	.246	.440	.038	.906

Note. S = Somatic, W = worry and CD = Concentration disruption, \*Correlation is significant at the 0.05 level  $p = \text{Sig. (2-tailed)}$  in Spearman's rho correlation coefficient.

Rugby union, more precisely Sevens is recognized as a team and a contact sport. Thus, task-oriented athletes tend to build stronger and more positive relationships between themselves, coaches and officials. Cohesion plays an essential role in team sports development, one of the most important influences may be the ability to set and pursue common goals, in a combination of different goal orientations. This may differ to what extent the team gets along (emotional thoughts, feelings and behaviours share) in a sport team can encourage or discourage performance, depending on how athletes perceive anxiety (Eys, et. al. 2009).

Furthermore, research supports that task-orientation is reflected through the perception of higher performance levels rather than the results themselves (Roberts, 1992). Additionally, task-oriented athletes have a special drive for high levels of competence (Winterstein, 2002). Further, the increase of confidence is promoted by the perception of self-abilities and self-control of undesired levels of anxiety.

### *Trait anxiety*

The current results report that cognitive anxiety (internal factors) in particular worry, will be more present not only in competition contexts but also practice contexts, a conclusion also reached by Cruz (1996).

Neil et al. (2006) reported that, at least in competition settings, more experienced athletes tend to apply psychological skills more often than lesser experienced players, and that the more frequent use of those skills enabled a more facilitative psychological status.

Gould, Dieffenbach, and Moffett (2002) achieved similar results with 10 Olympic medal athletes specifically: somatic anxiety ( $X = 16.7$ ;  $SD = 4.52$ ); worry ( $X = 11.2$ ;  $SD = 3.43$ ) and concentration disruption ( $X = 7.0$ ;  $SD = 2.58$ ). Such findings suggest that the higher scores from the Olympic athletes may be a reflection of specific mental practices and emotional control from experience, leading to lower levels of trait anxiety.

Despite this, high levels of trait anxiety was recognized mainly as facilitative to performance and direction was prioritize instead of intensity.

The characteristic of Sevens as a contact sport (collision), expose athletes to high levels of adrenalin. This may play a role in how athletes appraise anxiety as a facilitator to their performance (e.g., Jones, 1995; Robazza & Borteli, 2007). Moreover, this could be one of the main reasons for such strong and deeper bonds (cohesion) between teammates.

### *Non-parametric correlations between Goal orientations and anxiety*

The current findings indicated goal orientations are closely correlated with anxiety. Despite half of the participants' trained four to five times a week, their predisposed to be ego-oriented is higher in comparison with the other half of the sample, who trained two to three times a week. This pertinent connection is consistent with AGT research already covered. Therefore, educational and sport research inspired by AGT has shown that ego-orientation is strongly correlated with performance anxiety (pejorative) and task-orientation (Performance-Oriented) is negatively correlated to performance anxiety (Bandalos, Finney, & Geske, 2003; Harackiewicz et al., 2002; Vealey & Campbell, 1988).

### *Non-parametric correlations between Goal orientations and frequency of weekly sessions (independent variable)*

The correlational coefficients of goal orientations and the frequency of sessions per week, support that the greater number of weekly sessions, the higher ego-orientation, regardless of their task-orientation. If the weekly sessions increase, an increased need for self-promotion and social comparisons levels increase. This is affirmed by Rodrigues et al. (2009) where athletes with higher ego-orientation tend to be more influenced by debilitating anxiety. However, a reasonable ego-orientation seemed fundamental to achieve higher performance levels, mainly in H-P. If more ego environments are promoted (e.g., increase national competitiveness; international experience) in this case increasing the frequency of weekly sessions, athletes will have more information about their abilities, become more aware of their capabilities, increasing their social comparisons. This may lead the desirable goal profile balance, high task and ego orientations.

### *Non-parametric correlations between anxiety and duration of weekly sessions*

The most significant correlation between cognitive anxiety more specifically worry was strongly correlated with the duration of weekly sessions (independent variables). The interpretation of such data can lead to biased conclusions. Indeed, Weinberg and Gould (2015) defined cognitive anxiety as the level of concern and personal negative thoughts represented by worry and concentration disruption. This implies that H-P may influence the athletes' anxiety interpretation (ego-oriented) considering the impact of external factors, such as media, supporters and the importance of results.

However, according to the literature, worry may act as a stimulus, a catalyst to higher and longer periods of concentration and focus on the task (facilitative). This outcome will depend mostly on the athletes' self-interpretation of such worry through his / her feelings, cognitions and behaviours. Given the PWS squad characterization as high task-orientation and low ego-orientation, their interpretation may imply that worry manifestations will lead them to achieve higher levels of performance, in other words, working as facilitative to higher performance levels (e.g., Jones, 1995; Robazza & Borteli, 2007).

In addition, from this concept of constructive worry, increasing the duration of weekly sessions would also provide athletes with information about their personal abilities, increased opportunity for social comparisons. With that said, we strongly support the catastrophe model of performance (Hardy, 1990) where a considerable amount of anxiety is crucial to act as a catalyst for optimal performance.

In addition a goal profile of high task-orientation and low ego-orientation may be interpreted as anxiety absence, that may infer athletes' interpretation in H-P pressure situations tend to be less challenging and less demanding, which according with Hanin's (2007) is reluctant for athletes engage in their Individual Zone of Optimal Functioning (IZOF).

Cox and Yoo (1995) noted that success in professional sport is not only dependent on the physical and tactical aspects of the events, but also on the athlete's psychological skills. Rugby is no exception to this. According to Pizarro (2004), psychologist of Chilean rugby national squad "The psychological dimension influences 80% of athletes' performance, against merely 20% attributable to physical, technical and tactical dimensions...Rugby is highly dependent on triggering the athlete's mind-set and commitment levels".

Recognizing that athletes tend to perceive emotions as facilitating or debilitating in regards to their personal performance (Hanin, 2007; Martinet, Campo, & Ferrand, 2012; Robazza, & Borteli, 2007) seems relevant, specifically Robazza and Borteli (2007) when they argued Italian rugby players (amateurs and professionals) perceived anger (catalysed mainly by cognitive anxiety) as a facilitator to performance. Despite the similarities represented in the previous study, variances in cultural contexts, gender, performance level (amateur vs elite) and methodology may provide a contribution to understanding why Portuguese female rugby athletes tend to perceive anxiety as facilitative rather than debilitating.

Pertinent to our research is that elite rugby players have higher self-confidence, concentration, motivation, greater use of imagery, and self-talk (Neil, Mellaieu, & Hanton, 2006). The characteristics of Sevens tournaments may also play a role in how athletes interpret anxiety. The necessity to remain focused for an extended period

of time (two-three days, five-six matches, during five-six hours each day), emotions, such as worry (anxiety) may play a role in such demanding fatigue scenario to perform.

To summarise, the results from this study characterize the PWS squad as having a high task-orientation and emerging high intensity values of cognitive anxiety. The latter results, from worry and concentration disruption, were higher in comparison with somatic results. This connection between PWS athletes' goal orientation and their cognitive anxiety appears to form the basis of how athletes interpret anxiety and how this interpretation can facilitate then to achieve optimal performance levels, regarding their ability to set specific process and performance team and individual goals. Recognizing this fact, it is appropriate to consider that 'do-your-best' goals may lead to less challenging and demanding tasks, than specific performance and process goals (Burton, et al., 2013).

The benefits of both high task and ego orientations, may lead to dysfunctional unpleasant emotional states (e.g. fear, guilt, shame, anger), considering the concept of multidimensional anxiety (Martens, et al., 1990; Smith, et al., 1998). Therefore, it is important to ensure a task-oriented focus and promote more self-regulated athletes in order to manage and lead with emotions that facilitate rather than debilitate performance, mainly in H-P.

In line with the results achieved in the present study, anxiety (expressed mainly by worry) acts as a catalyst to facilitate higher levels of performance. This can be justified, not only through PWS squad being task-orientated, but also how worry has a beneficial effect in promoting an athlete's self-evaluation and self-reflection, leading to significant improvements (Zuckerman & Spielberger, 2015). Additionally, worry (cognitive anxiety) has a crucial role in promoting a task-oriented motivational climate (Más, et al., 2012). Following this line of thoughts, Robazza and Bortoli (2007) affirmed, "Rugby players felt a moderate frequency of anger (emotion) as advantageous for performance because they believed themselves able to exert control over their feelings and to channel properly the energising effects of emotional arousal on the task" (p. 889).

### Limitations

Admittedly, there is considerable goal orientation research focused on quantitative methods. That said, important aspects may be overlooked. Therefore, a mixed methods approach is currently increasing in sport psychology (Culver, Gilbert, & Sparkes, 2012). Research also indicates that competitive anxiety and motivational goal orientation are more common in settings of individual sports and Physical Education rather than team sports (Hall & Kerr,

1997; Ntoumanis & Biddle, 1998), which limits possible comparisons with the results obtained.

In addition, the specificity of participants included in this research (PWS athletes) limits the extent to which these findings can be generalised. It is also important to consider the context in this particular case, Portuguese female Rugby players, and how the competitive structure and tournament system in Portugal influences the female athletes' motivation and anxiety. Finally, it seems relevant to consider how athletes perceive different motivational and emotional states as an idiosyncratic process in a specific sport context, rather than nomothetic.

Further work is recommended to corroborate our findings arguing the benefits of both high task and ego orientations in the way it influences athletes' interpretation of anxiety in such a characteristic context such as Portuguese Womens Sevens.

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