

Relationships between psychological skills and European U19 rugby union tournament outcomes and performance indicators

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ABSTRACT

The purpose of this study was to investigate and identify the psychological skills and strategies related to tournament outcomes and performance indicators in a European under-19 Rugby Union Championship. The sample included a total of 183 elite male U19 rugby players, aged between 17 and 19 years ($M = 18.67$, $SD = 0.51$), who competed at the U19 European Championship 2014. These players represented seven national teams ranked by the teams' final classification in the championship, as follows: Georgia (1st place, $n = 34$), Portugal (2nd place, $n = 20$), Spain (3rd place, $n = 26$), Russia (4th place, $n = 27$), Netherlands (5th place, $n = 17$), Belgium (6th place, $n = 14$), and Romania (7th place, $n = 45$). Athletes responded to translated and adapted versions of the questionnaire Test of Performance Strategies (TOPS; Thomas et al., 1999) an hour before the first match of the tournament. Summary matches' statistics and the final ranking position (inverted) of the national teams were retrieved from an official website. Correlation results showed that a more frequent use of self-talk, emotional control and goal-setting strategies was positively related to points, tries and conversions scored, whereas imagery levels were positively associated to penalties scored. On the other hand, higher levels of negative thinking were positively correlated to points, tries and penalties conceded, whereas higher activation levels were negatively related to points, tries and conversions conceded. The teams' final ranking was significantly predicted by goal-setting ($\beta = 0.21$), imagery ($\beta = 0.17$), activation ($\beta = 0.32$) and negative thinking ($\beta = -0.16$) levels ($R^2 = 0.11$, $p = 0.005$). **Keywords:** Rugby Union; Under 19; Psychological skills and strategies; Tournament outcomes; Performance.



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INTRODUCTION

Much of the applied sport psychology literature has devoted a lot of attention to the relationships between psychological factors and individual or teams' performance. Regarding rugby union, some studies have investigated the association between certain psychological skills and competitive anxiety levels (e.g., Neil et al., 2006), but mainly in adult players. Consequently, knowledge is still lacking on the psychological skills and strategies used by youth rugby players before and when competing and, even more important, its influence on team's performance indicators and outcomes during an international tournament.

Therefore, the aim of the present study is to identify the psychological skills and strategies related to tournament outcomes and performance indicators in a European U19 Rugby Union Championship.

MATERIAL AND METHODS

Participants

A total of 183 elite male under-19 rugby players (backs, $n = 91$; forwards, $n = 92$), aged between 17 and 19 years ($M = 18.67$, $SD = 0.51$), volunteered to participate in the current study. Participants competed at the U19 European Championship 2014, held in Lisbon – Portugal, representing seven national teams ranked by the teams' final classification in the championship, as follows: Georgia (1st place, $n = 34$), Portugal (2nd place, $n = 20$), Spain (3rd place, $n = 26$), Russia (4th place, $n = 27$), Netherlands (5th place, $n = 17$), Belgium (6th place, $n = 14$), and Romania (7th place, $n = 45$). Data from the Polish national team (8th place in the tournament; $n = 17$) was not analysed because of low reliability issues (Cronbach's α values below 0.60).

Measures

Athletes completed the 32-item of the competition subscales of the Test of Performance Strategies (TOPS; Thomas et al., 1999), which assesses eight psychological skills and strategies (self-talk, emotional control, automaticity, goal-setting, imagery, activation, relaxation and negative thinking). A detailed description of the different language versions of the instrument that were used is available elsewhere (Vaz et al., 2017).

Summary matches' statistics and the final ranking position (inverted) of the national teams competing at the U19 European Championship 2014 were retrieved from an official website (old.rugbyeurope.tv/archives-competition-71.htm, retrieved July, 8, 2015). The total tournament statistics collected for analysis were: i) points, tries, conversions and penalties scored, and ii) points, tries, conversions and penalties conceded.

Procedures

The institutional ethics committee of the first author provided ethical approval for this study (CE.UTAD 27/2015). After obtaining approval from the team managers or coaches, signed informed consents were obtained from the athletes or by the legal guardians of minors. Athletes completed the questionnaire one hour before the first match of the tournament. The instrument was completed, individually, in a quiet room.

Analysis

Statistical analysis included descriptive statistics (mean, standard deviation, skewness and kurtosis), internal consistency (Cronbach's α), Pearson correlations and multivariable linear regression. Significance was set at $p < 0.05$. All analyses were performed using SPSS 17.0 (SPSS Inc., Chicago).

RESULTS

TOPS' competition subscales presented acceptable values of skewness and kurtosis (between -0.67 and 0.98). All of the subscales demonstrated satisfactory reliability (i.e., Cronbach's alpha > 0.60), with the exception of the automaticity subscale. Taking this into account, and also previous evidence (Hardy et al., 2010), the data from this subscale was omitted from the following analyses.

Table 1 shows the correlations between the study variables.

Table 1. Correlations between psychological skills/strategies and tournament performance indicators

Competition subscales	Total tournament indicators scored				Total tournament indicators conceded				Final Ranking
	Points	Tries	Conver.	Penalt.	Points	Tries	Conver.	Penalt.	
Self-talk	0.29**	0.28**	0.28**	-0.10	-0.17*	-0.16*	-0.13	0.01	0.02
Emotional control	0.16*	0.16*	0.24**	0.10	0.00	-0.07	0.03	-0.16*	-0.09
Goal-setting	0.23**	0.22**	0.22**	0.09	-0.11	-0.04	-0.13	-0.15*	0.14
Imagery	0.10	0.08	0.06	0.25**	-0.06	0.00	-0.14	-0.16*	0.14
Activation	0.09	0.09	0.08	0.00	-0.19*	-0.21**	-0.26**	0.13	0.15*
Relaxation	-0.05	-0.03	-0.06	-0.06	-0.12	-0.13	-0.12	0.04	-0.04
Negative thinking	-0.14	-0.13	0.02	-0.11	0.25*	0.32**	0.12	0.21**	-0.10

Results showed small to moderate significant correlations between the study variables. A more frequent use of self-talk, emotional control and goal-setting strategies was positively related to points, tries and conversions scored, whereas imagery levels were positively associated to penalties scored. On the other hand, higher levels of negative thinking were positively correlated to points, tries and penalties conceded, whereas higher activation levels were negatively related to points, tries and conversions conceded.

Multivariable linear regression analysis using the teams' final ranking (inverted) as the dependent variable showed that goal-setting ($\beta = 0.21$, $p < 0.01$), imagery ($\beta = 0.17$, $p < 0.05$), activation ($\beta = 0.32$, $p < 0.001$) and negative thinking ($\beta = -0.16$, $p < 0.05$) were the significant predictors in the model ($R^2 = 0.11$, $p = 0.005$).

DISCUSSION

Using a prospective design, the results of the current study indicate that pre-tournament levels of certain psychological skills and strategies predict the teams' final classification. More precisely, our findings expand previous evidence (Neil et al., 2006; Vaz et al., 2017) by suggesting that these effects are somehow explained by the specific influence of psychological dimensions on certain teams' performance indicators.

CONCLUSIONS

In sum, the findings of the present study suggest that certain competition psychological skills and strategies play an important role on U19 rugby union tournament outcomes and performance indicators. Taken as a whole, this evidence underscores the importance and relevance of planning and implementing appropriate psychological preparation before and during rugby union youth tournaments.

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