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Examination of Student Cross-Country Runners' Task and Ego Orientations, Challenge and Threat Levels

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Abstract

The aim of this research is to examine the level of task and ego orientations, challenge and threat experiences of student cross-country runners as well as investigate their dispositional differences in goal orientations, challenge and threat levels according to demographic variables, and the link between ego orientations and challenge and threat experiences. 118 student-athletes voluntarily participated in this research. Since the data were not normally distributed, the Kruskal-Wallis test was used for group comparisons, and the Mann-Whitney U test was used for pairwise comparisons from nonparametric test methods. Results showed no significant differences in the task and ego orientations, challenge and threat levels of the participants in terms of their gender and whether they had a club license ($p > 0.05$).

Significant differences, however, were found in the participants' task and ego orientation levels ($p < 0.05$), while there were no significant differences in challenge and threat levels ($p > 0.05$) in terms of the department studied. There were significant differences in the participants' task and ego orientations and challenge levels in terms of duration to be an athlete ($p < 0.05$) but there was no significant difference found in the participants' threat level ($p > 0.05$). Overall, the results of this research provided valuable information to sports psychologists, managers, and coaches at universities to guide efforts to improve student athletes' performance.

Keywords: Student athletes, Task orientation, Ego orientation, Challenge, Threat, Cross-country

1. Introduction

Success in sports is the function of simultaneously responding to the physical and psychological demands and challenges required by the competition. Sports psychologists, sports managers, and coaches want to make sure their teams or athletes are psycho-physiologically prepared for the upcoming competition. Therefore, predicting whether the athletes are ready for a competition psychologically, whether they can cope with the anxiety caused by the uncertainty of the outcome of the competition or whether they can positively control this situation and designing sound intervention programs where needed attracts the attention of academics in the fields of sports psychology, sports management, and sports education. In the literature, the psychological resources affecting the participation of athletes in sports competitions, their motivational states (experiences), and their attitudes and behaviors to competition have been tried to be explained with different theories. When the literature is reviewed, it looks that the link between task and ego orientation and challenge and threat experiences has not been studied in the context of student cross-country athletes to date, in our knowledge. Therefore, the levels of task and ego orientation, and challenge and threat will be examined in terms of some demographic variables, and the relationship between the dimensions of goal orientation and the dimensions of motivational experiences shown by athletes as a response to competition stress will be examined in this research within the scope of student cross-country runners. The findings of this research contribute to and expand the related literature by revealing the positive relationships between achievement goal orientation dimensions and challenge and threat experiences as well as dispositional differences in these conceptual variables in terms of some demographics in the context of student cross-country runners.

1.1 Task and Ego Orientation

Individuals set different goals to satisfy their achievement motivation (Toros, 2004), which has been defined as Achievement Goal Orientation by Nicholls et al. (1989). In the context of sports, Duda (1989) evaluated goal orientation under two dimensions "task-oriented" and "ego-oriented". These two dimensions reflect what athletes attribute their success to or how they judge their competence (White & Duda, 1993). While individuals with task-oriented associate success with mastering the task, hard work, skill development, and learning new skills; ego-oriented individuals associate success with their superior competence and beating

their opponents with less effort (Duda, 1993). Athlete with high task-oriented recognizes competitions as a chance to improve their skill, and failure is to have done less than the best performance (Toros & Koruç, 2005). The athlete with high ego-oriented, if especially perceives her competence low, may encourage maladaptive reactions such as giving up, cheating, or risking their own health to guarantee success (White & Duda, 1993). Toros (2002) stated by quoting Boyd (1990), and Duda (1992) that individuals with ego-oriented tend to have high levels of anxiety, lack of resistance, and less enjoyment of a sportive activity. Task-oriented athletes, however, are less likely to have anxiety (Hall & Kerr, 1997) because they may able to control the factors that lead to failure and success, which results in high enjoyment (McCarthy et al., 2008). Therefore, it is possible to say that associating success and competitive anxiety in terms of task orientation can probably produce more positive results than associating them in terms of ego orientation, although both orientations have been adopted by athletes to define success.

Task and ego orientation concepts are widely studied in the sport context; however, it continues to attract academicians since the concept is still highly related to improving the motivational performance of athletes of all ages and kinds. The earlier researcher focused on developing a reliable and valid measure of the Task and Ego Orientation scale TEOSQ (Duda, 1989), and the scale adapted to use in different cultures such as the Turkish sports environment (Toros, 2004) and contexts such as in youths with intellectual disabilities (Tracey et al., 2021). Later research in the literature mostly focused on the relationships between the goal orientations of athletes and the motivational climate in the sports environment. It was found that task-oriented athletes perceive the mastery climate in which lifelong skill development and learning are supported as a motivational climate, but a performance-oriented climate in which focusing on the opponent and being a star is encouraged as a motivational climate by ego-oriented athletes in different sports settings (Robert & Ommnudsen, 1996; Toros & Koruç, 2005; Gencer, 2021; Jacobsen, 2021). Another stream of research recently is investigating the relationships between the goal orientations of athletes and sports motivations. Knoblochova et al. (2021) showed that there were positive and significant relationships between task orientation and intrinsic motivation, between ego orientation and external regulation, and between ego orientation and competitive performance in competitive beach volleyball players. Similarly, Jacobsen (2021) showed that there was a positive and significant relationship between task orientation and intrinsic motivation, and a significant and negative relationship between task orientation and amotivation, while there was a significant and negative relationship between ego orientation and intrinsic motivation in ice hockey players. Although, dispositional differences in task and ego orientation have been assessed in recreational sports (White & Duda, 1994); in amateur soccer players (Özsarı & Cetin, 2019); in professional woman handballers (Miçooğulları & Göksu, 2022) in respect to some demographics; but these goal orientations have not been examined in the competitive student cross-country runners. Examining dispositional differences in task and ego orientation with respect to different demographics in this young population will provide inside into their achievement goal orientation, which will enable them to conduct sound and effective interventions to improve their future performance for sports psychologists as well as sports managers and coaches in universities. For this purpose, we establish our first research

question as below.

Q1: Do the levels of Task and Ego Orientation of student cross-runners vary according to the a) gender? b) whether they have a club license or not? c) the departments being studied? d) the duration of actively doing sports?

1.2 Theory of Challenge and Threat States in Athletes (TCTSA)

TCTSA, which accounts for the way athletes respond to a competition, was proposed to understand athletes' interpretation of anxiety symptoms, perceptions, and experiences related to an upcoming competition (Jones et al., 2009). According to Blascovic and Mendes (2000), challenge and threat are motivational states that describe how an individual is personally involved in a meaningful situation. Thus, it is anticipated that challenge and threat can only arise in a motivated performance situation such as a sports competition associated with a sense of effort or uncertainty (Rossato et al., 2018). According to TCTSA, athletes can evaluate the stress of competition in either way: being challenged or threatened (Jones et al., 2018). In general, an athlete's interpretation of competition anxiety as a challenge is defined as a positive response that is expected to be beneficial for competition performance, while interpreting it as a threat is defined as a response that is not beneficial for competition performance. A challenge situation is experienced when sufficient resources (*e.g.*, skills, self-esteem) are perceived to meet the demands of a situation (*e.g.*, danger, uncertainty), however, a threat situation is experienced when insufficient resources are perceived to meet the demands of the situation (Blascovich & Mendes, 2000; Blascovich et al., 2003). Similarly, Skinner and Brewer (2004) associate challenge experience with opportunity for success and confidence the demand can be met while associating threat with low confidence in one's ability to cope with the demand also challenge is associated with reporting high levels of self-efficacy while threat associated reporting with low-self-efficacy (Jones et al., 2009). In order to embody TCTSA, we can give an example of a cross-country runner. If a cross-country runner recognizes that she will be able to compete against opponents she has beaten before, or if she knows that her recent running time is good, in this case, she may experience a challenging situation. If the cross-country runner considers the running time insufficient from her previous attempts, she may be able to experience a threat situation in this case. In short, challenge and threat states increase or worsen the competitive performance of athletes. Thus, it is essential for sports managers and coaches to understand whether the response of their athletes to competition anxiety is a challenge or a threat to the accuracy of the decisions they will make regarding the performance states of athletes. Therefore, we establish the second research question below to address this problem.

Q2: Do the levels of challenge and threat states of student cross-runners vary according to the a) gender? b) whether they have a club license or not? c) the departments being studied? d) the duration of actively doing sports?

In addition, as explained in the task and ego orientation section, the relationships between goal orientation dimensions and the dimensions of the motivational climate surrounding the athletes as well as the relationships with the dimensions of sports motivation revealed. The relationships, however, between motivational experiences (*e.g.*, challenge and threat) and

goal orientation dimensions, which may play an important role in determining motivational experiences, has not been revealed in sport settings. In the sports context, goal orientations were related to the athlete's responses to competitive sports and the important role that goals play explained in achievement goal theory (White & Duda, 1993). Thus, in order to reveal the relationships between achievement goal orientation dimensions and motivational responses experienced by athletes to a competition, the third research question is established below.

Q3: What are the relationships between task and ego orientations and challenge and threat experiences?

2. Method

2.1 Participants and Sampling Procedures

The sample of this research consists of 118 student-athletes who participated in the Turkish Universities Cross Country Championship organized by the Turkish University Sports Federation held in Iğdır in 2022 and voluntarily agreed to participate in the research. The sample is representative of the entire population that participated in the event and we want to make inferences. The survey-type descriptive research method was used in this research.

2.2 Data Collection

Ethics approval for this research was provided by the ethics committee of Iğdır University with the decision numbered 2022/18 on 02 November 2022. Then, the data were collected through a face-to-face questionnaire from all the athletes participating in the competition the day before and on the day of the competition. While the first part of the questionnaire consisted of questions about the demographic structure of the participants, the second part of the questionnaire consisted of questions to measure the level of task and ego orientation, challenge and threat level of the participants.

2.3 Research Instruments

The "Task and Ego Orientation Scale in Sports (TEOSQ)" developed by Duda (1989); Duda and Nicholls (1992) and adapted to the Turkish population by Toros (2004) was used as well as the "Challenge and Threat in Sport Scale" developed by Rossato et al. (2018) and adapted to the Turkish population by Gürbüz et al. (2021) were used to collect the data of the research. The Task and Ego Orientation Scale in Sports consists of 13 items, 7 of which are tasks, 6 of which are ego orientation, and two sub-dimensions. The reliability of the scale was found by Toros as .87 for task-oriented goals and .85 for ego-oriented goals according to Cronbach's Alpha (α) coefficient. The scale is of the 5-point Likert type in this research as in the original research (1 = strongly disagree; 5 = completely agree). The Turkish version of the Challenge and Threat Scale consists of 11 items, 6 of which are threats, 5 of which are challenges, and two sub-dimensions. The reliability of the scale was found by Gürbüz et al. (2021) as .80 for challenge and .84 for threat according to Cronbach's Alpha (α) coefficient. The scale is of the 5-point Likert type in this research as in the Turkish version of Gürbüz et al. (2021) (1 = strongly disagree; 5 = completely agree).

2.4 Analysis of Data

Cronbach's Alpha (α) coefficient was used for the reliability and corrected item-total correlations, which indicates the validity and discrimination of the items were used for the validity of the data. Percentage, frequency, mean, and standard deviation values from descriptive methods were used in the evaluation of demographic information. Since the data were not normally distributed according to the Shapiro-Wilk and Kolmogorov Smirnov tests, non-parametric tests were used in the data analysis, and therefore the median was given where necessary instead of the mean. Mann-Whitney U tests were used for pairwise comparisons and the Kruskal-Wallis test was used for group comparisons. Statistical significance was accepted as 0.05. Data analysis was performed with the SPSS Statistic 26 program.

3. Results

The ages of the participants ranged from 18 to 27 ($\bar{x}_{age}$ = 21.02±1.872), and study at varying departments of different universities, mostly in departments related to sports sciences. Most participants also hold a sports club license and have been active as an athlete for more than five years. The detailed demographics of participants were given in Table 1.

Table 1. Participants' demographics

Demographics	**Frequency (n)**	**Percent (%)**	**Demographics**	**Frequency (n)**	**Percent (%)**
Gender			**Having Club License**		
Man	66 ($\bar{x}_{age}$ = 21.20±.245)	55.9	*Yes*	76	64.4
Woman	52 ($\bar{x}_{age}$ = 20.79±.235)	44.1	*No*	42	35.6
Total	118			118	100
Department			**Duration to be an athlete**		
Physical Education and Sport Teaching	24	20.03	*1 year and less*	24	20.03
Coaching Education	60	50.08	*2-3 years*	18	15.3
Sport Management	12	10.02	*4-5 years*	8	6.8
Recreation	6	5.1	*More than 5 years*	68	57.6
Departments Other Than Sports Sciences	16	13.1			
Total	118	100		118	100

Cronbach's alpha (α) values of the variables were found to vary between .87 and .94, which

were ≤ .70 (Nunnally, 1978) for reliability. Corrected item-total correlations, which give information about the validity and discrimination of the items, ranged between .406 and .876 which were higher than the cut-off point of > .30 (Cristobal et al., 2007). The median of the variables changed between 3.00 and 4.00 (Table 2).

Table 2. Reliability and validity results, and median values

Variables/*Items*	**α**	**Median**	**ITTC**	**Variables/*Items***	**α**	**Median**	**ITTC**
Task	.88	3.29		Challenge	.92	4.00	
TEOSQ2			.622	*Challenge1*			.822
TEOSQ5			.642	*Challenge2*			.710
TEOSQ7			.577	*Challenge3*			.876
TEOSQ8			.734	*Challenge4*			.831
TEOSQ10			.689				
TEOSQ12			.689				
TEOSQ13			.758				
Ego	.87	3.67		Threat	.94	3.00	
TEOSQ1			.780	*Threat1*			.751
TEOSQ3			.765	*Threat2*			.726
TEOSK4			.789	*Threat3*			.864
TEOSK6			.792	*Threat4*			.855
TEOSK9			.477	*Threat5*			.834
TEOSK11			.406	*Threat6*			.851

Note. TEOSQ: task and ego orientation in sport questionnaire; α: cronbach's alpha coefficient; $\bar{x}$: mean; S.D.: standard deviation; ITTC: item to total correlation.

Comparison of athletes' task and ego orientation, and challenge and threat levels by gender and whether they have a club license or not were given in Table 3 and in Table 4 respectively. According to the findings in Table 3 and Table 4, there were no significant differences in the participants' task and ego orientations, and challenge and threat levels by gender and club license ($p > 0.05$).

Table 3. Comparison of athletes' task and ego orientation, and challenge and threat level by gender variable (Mann-Whitney U Test)

Variables	Gender	Mean	SD	Mean Rank	U	Z	P
Task Orientation	Man Woman	3.26 3.13	.107 .170	60.38 58.38	1658.000	-.316	.752
Ego Orientation	Man Woman	3.56 3.42	.101 .164	61.06 57.52	1613.000	-.562	.574
Challenge	Man Woman	2.86 3.18	.138 .186	58.38 60.92	1642.000	-.403	.687
Threat	Man Woman	3.75 3.78	.141 .177	55.62 64.42	1460.000	-1.390	.164

Note. SD: Standard deviation; P < 0.05.

Table 4. Comparison of athletes' task and ego orientation, and challenge and threat level by club license variable (Mann-Whitney U Test)

Variables	Club License	Mean	SD	Mean Rank	U	Z	P
Task Orientation	Yes No	3.08 3.43	.126 .137	55.76 66.26	1312.000	-1.602	.109
Ego Orientation	Yes No	3.43 3.63	.125 .121	56.74 64.50	1386.000	-1.188	.235
Challenge	Yes No	3.81 3.69	.136 .190	60.63 57.45	1510.000	-.486	.627
Threat	Yes No	3.04 2.91	.143 .187	60.26 58.62	1538.000	-.327	.744

Note. SD: Standard deviation; P < 0.05.

Comparison of athletes' task and ego orientation and challenge and threat levels by departments being studied and the duration of doing active sport were given in Table 5 and Table 6. According to the findings in Table 5, significant differences were found in the participants' task and ego orientation levels ($p < 0.05$), while there were no significant differences in challenge and threat levels ($p > 0.05$) by the department they studied. Mann Whitney U test was applied in pairwise comparisons in order to determine between which department groups there were significant differences. According to this;

(a) The "task orientation" scores of those in the department of recreation (mean rank = 50.00) are higher than those in the department of coaching education (mean rank = 31.85) ($Z_{(-2,216)} = .025$; $p < 0.05$).

(b) The "ego orientation" scores of those in the department of physical education and sport teaching (mean rank = 51.71) are higher than those in the department of coaching education (mean rank = 38.82) ($Z_{(-2,211)} = .027$; $p < 0.05$).

(c) The "ego orientation" scores of those in the department of recreation (mean rank = 52.67) are higher than those in the department of coaching education (mean rank = 31.58) ($Z_{(-2,586)} = .008$; $p < 0.05$).

(d) The "ego orientation" scores of those in the department of recreation (mean rank = 13.83) are higher than those in the department of sport management (mean rank = 7.33) ($Z_{(-2,470)} = .013$; $p < 0.05$).

(e) The "ego orientation" scores of those in the department of recreation (mean rank = 16.00) are higher than those in other departments other than sports sciences (mean rank = 9.81) ($Z_{(-2.009)} = .049$; $p < 0.05$).

Table 5. Comparison of athletes' task and ego orientation, and challenge and threat level by department studied (Kruskal-Wallis Test)

Variables	Departments	Mean Rank	X^2	P
Task Orientation	Physical Education and Sport Teaching	64.17	10.37	.035*
	Coaching Education	50.65		
	Sport Management	71.17		
	Recreation	86.33		
	Other Departments than Sports Sciences	66.88		
Ego Orientation	Physical Education and Sport Teaching	68.08	12.55	.014*
	Coaching Education	50.25		
	Sport Management	61.83		
	Recreation	92.67		
	Other Departments than Sports Sciences	67.13		
Challenge	Physical Education and Sport Teaching	48.92	9.25	.055
	Coaching Education	56.27		
	Sport Management	64.00		
	Recreation	73.83		
	Other Departments than Sports Sciences	78.75		
Threat	Physical Education and Sport Teaching	51.17	6.30	.197
	Coaching Education	61.58		
	Sport Management	67.17		
	Recreation	35.38		
	Other Departments than Sports Sciences	67.38		

Note. *: $P < 0.05$.

The findings in Table 6, also showed that there were significant differences in the participants' task and ego orientations and challenge level by the duration of doing sport actively ($p < 0.05$) but there was no significant difference found in the participants' threat level ($p > 0.05$). Mann Whitney-U test was applied in pairwise comparisons to determine the significant differences between which duration groups. According to this,

(a) The "task orientation" scores of those who do sports for 1 year or less (26.75) are higher than those who do sports for 2 to 3 years (14.50) ($Z_{(-3.228)} = .001$; $p < 0.05$).

(b) The "ego orientation" scores of those who do sports for 1 year or less (26.08) are higher than those who do sports for 2 to 3 years (15.30) ($Z_{(-2.841} = .004$; $p < 0.05$).

(c) The "challenge" scores of those who do sports for 1 year or less (57.08) are higher than the scores of those who do sports for more than 5 years (42.76) ($Z_{(-2.272)} = .023$; $p < 0.05$).

(d) The "challenge" scores of those who do sports for 4 to 5 years (53.50) are higher than the scores of those who do sports for more than 5 years (36.74) ($Z_{(-2.043)} = .041$; $p < 0.05$).

Table 6. Comparison of athletes' task and ego orientation, and challenge and threat level by duration to be an athlete (Kruskal-Wallis Test)

Variables	**Duration to be an athlete**	**Mean Rank**	**X^2**	**P**
Task Orientation	1 year and less	75.42	10.24	.017*
	2-3 years	41.61		
	4-5 years	58.75		
	More than 5 years	58.71		
Ego Orientation	1 year and less	74.33	8.16	.043*
	2-3 years	44.50		
	4-5 years	58.00		
	More than 5 years	58.41		
Challenge	1 year and less	71.25	8.60	035*
	2-3 years	64.50		
	4-5 years	76.75		
	More than 5 years	52.00		
Threat	1 year and less	54.50	1.69	.638
	2-3 years	64.50		
	4-5 years	70.00		
	More than 5 years	58.71		

Note. *: $P < 0.05$.

Spearman correlation analysis revealed significant relationships between achievement goal orientation and motivational states experienced by participants. The positive significant relationships were identified between task orientation and challenge ($r_s = .425$; $p < .001$) and

threat (r_s = .250; p < .001) states; and between ego orientation and challenge (r_s = .478; p < .001) and threat (r_s = .299; p < .001) sates (Table 7).

Table 7. Spearman Correlation Analysis Between Achievement Goal orientation and Motivational States

Variables	**1**	**2**	**3**
Task Orientation	1.00		
Ego Orientation	.926**	1.00	
Challenge	.425**	.478**	1.00
Threat	.250**	.299**	.598**

Note. **: P < 0.01.

4. Discussion and Conclusion

Predicting whether the athletes are ready for a competition psychologically, whether they can cope with the anxiety caused by the uncertainty of the competition or whether they can positively control this situation is essential for sports psychologists, managers, and coaches for designing sound and effective intervention programs to enhance athletes' future performance. With this sight in mind, the aim of this research was to examine the task and ego orientations, challenge and threat experiences levels of university student cross-country runners. This research contributed to the development and expansion of the literature by revealing the dispositional differences in goal orientation and motivational states experienced by student cross-country runners in terms of some demographics. Participants reported relatively "higher task orientation than ego orientation" and "higher challenge experience than threat experience" to a competition. The fact that the threat score of the participants is relatively low and close to the medium value, and the task, ego, and especially the challenge scores of the participants are relatively higher than the medium value can be evaluated positively in terms of athletes' psychological performance. Overall, these findings show that athletes are highly motivated in terms of achievement motivation, both task-oriented and ego-oriented. This finding is similar to the research of White and Duda (1993), who showed that both task-and ego-oriented goal perspectives exist among athletes with disabilities.

With respect to "gender" and "whether they have a club license or not" there were no dispositional differences in the task, ego, challenge and threat levels of the athletes. In terms of gender variable, this result coincides with the findings of Ekmekçi et al. (2021), who examined the task and ego orientation of volleyball referees, but it contradicts White and Duda's (1994) research, which showed that males had a significantly higher ego orientation than females in a sample of high school, university, and recreational sports participants. In terms of whether they have a club license, the result obtained in this research, although not

the same, is similar to Toros's (2002) research, which showed no significant differences in task and ego orientation levels in elite and non-elite basketball players. These findings also show that the variables of gender and whether they have a club license or not may not have a significant function in the context of this research, in terms of differentiating task, ego, and challenge and threat levels.

One of the important results of this research is that the task and ego orientation levels of the participants differed significantly according to the "department being studied". Regarding "task orientation level", the score of students studying in the department of recreation is significantly higher than that of students in coaching education. In terms of "ego orientation level", the scores of those studying in physical education and sports teaching are higher than those in the coaching education department, while the scores of those studying in the department of recreation are higher than the scores of those studying in coaching education, sports management and other departments other than sports sciences. On the other hand, the findings pointed out that the levels of challenge and threat of the participants did not differ with respect to the "department being studied" and therefore they are at a similar level. It is stated that the tendency of individuals to define their goal orientations in sports is compatible with the reasons for participating in the activity (White & Duda, 1993). One of the reasons why students studying in the recreation department have higher ego orientation scores, especially task orientation scores, may be attributed to the education they received in the department they studied and their motives for participating in the competition. The results show that, at least in this sample, the department being studied may be an important function in differentiating the task and ego orientation levels, but not in the case of the challenge and threat levels.

Another important result is that the participants' task orientation, ego orientation and challenge levels differed significantly in terms of "duration of doing sports actively" but did not differ significantly in terms of "threat" level. In terms of "task and ego orientation level", the scores of those who do sports for 1 year or less are significantly higher than those who do sports for 2-3 years. Similarly, in terms of "challenge level", the score of those who do sports for 1 year or less is higher than the score of those who do sports between 2 to 3 years. Also, the score of those who do sports between 4 to 5 years is higher than the score of those who do sports for more than 5 years. While this finding contradicts the research of Özsarı and Çetin (2019), which revealed that the level of task and ego orientation in amateur football players did not differ according to the age of playing sports, it is similar to the research of Öcal et al. (2010), which showed that the task and ego orientations of female handball players differed according to the age of playing sports. The findings showed that the duration of doing sports or sports experiences in student-athletes and other athletes may have an important function in the context of differing the level of task and ego orientation and challenge, but not in the context of changing the level of threat.

The third research question of the research was aimed at questioning the relationship between achievement goal orientations dimensions and the motivational responses experienced by athletes to competition, and the correlation test revealed that there could be positive and significant relationships between constructs. Although the ego orientation was relatively

associated higher by the athletes, the task orientation was also strongly associated with the challenge experience. Furthermore, the ego orientation was relatively associated higher by the athletes, the task orientation was also strongly associated with the threat experience. These findings supported the sight that goal orientation dimensions may play an important role in determining the motivational experiences of individuals in achievement goal theory (Nichols et al., 1989; White & Duda, 1993; Jones et al., 2009). In the literature, there are studies suggesting that when an achievement-related situation arises like a sports competition, high ego-oriented individuals are more likely to consider the situation as a threat than high task-oriented individuals, especially if they feel that they have insufficient resources such as skills, self-efficacy to meet the demand of the challenging situation. Thus, in this research, the association of ego orientation with threat experience relatively more than task orientation by student-athletes seems to support the literature (Blascovich & Mendes, 2000; McGrogor & Elliot, 2002; Jones et al., 2009; Skinner & Brewer, 2004).

This research also provided valuable information for practitioners especially in universities such as sports psychologists, managers, and coaches by revealing how students' goal orientations, challenge and threat levels differed according to demographic variables, as well as how athletes associated goal orientations with challenge and threat experiences. In universities, the team responsible for the performance of their athletes can conduct sound interventions to control their athletes' anxiety or stress levels, which arise from upcoming competitions. For example, they may encourage their athletes to adopt task orientation as a goal of achievement, as it is likely to contribute to more positive attitudes or positive motivational states such as challenge. Another example, as determined in this research, is that the task and ego orientation levels of the athletes with more years of doing sports are relatively lower than the athletes who do sports for 1 year or less, giving an important signal to the sports managers and sports psychologists about the sustainable management of the positive goal orientations of the experienced athletes.

5. Limitations and Recommendations

There are also some limitations that should be considered. First, we conducted this research with a relatively small number of respondents. The sample of student cross-country runners consisted of entire competitors or population that competed in the Universities Turkish Cross-Country Championship; thus, they were highly selective and also represents this population fairly well, however, the generalizability of the result for other sports settings requires consideration. Second, this research employed a cross-sectional design that does not allow the analysis of behavior over a period. Intervention programs can change the attitudes and behaviors of the athletes over time, so longitudinal studies can be employed to seek the differences athletes may have in relation to the variables examined in this research. In future studies, the relationships between goal orientations and challenge and threat states as well as the factors that may moderate this relationship such as athletes' self-efficacy and motivational climate can be considered for examination with structural equation modeling to get more deep insight into athletes' psychological performance to success.

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