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Presenting a model of predicting competitive anxiety based on intelligence beliefs and achievement goals

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Abstract

The aim of this study was to prepare a model for competitive anxiety based on intelligence beliefs and achievement goals. In order to fulfill this, 500 elite athletes were chosen through multi-stage cluster sampling. They completed a questionnaire consisting of three subscales (intelligence beliefs, achievement goals and competitive anxiety). Using the path analysis, it was showed that entity and incremental intelligence beliefs indirectly affect competitive anxiety through the mediating role of achievement goals. Contrary to the impact of incremental intelligence beliefs, entity beliefs had an indirectly and negative effect on competitive anxiety.

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Keywords: intelligence beliefs; achievement goals; competitive anxiety

1. Introduction

Today, research in the field of sports psychology to identify important and influential interpersonal variables to assist athletes in the implementation of sports skills and also reducing factors such as anxiety which undermines function and performance is essential and indispensable (Rastegar, Hejazi, & Jamshidi, 2008). Anxiety is the concept of unsafe or a threat of which the person clearly does not understand the resource (Dadsetan, 1991). Type of anxiety that in recent years in the field of sport psychology have been considered, is competitive anxiety occurring in competitive sport situations, and is defined as the desire to understand the competitive position as a threatening factor that the response to this situation is associated with a sense of worry and stress (Reteguiz, 2006; Jamshidi, 2006). When discussing competitive anxiety, even professional players who have high anxiety, compared with players who have low anxiety, when placed in a state of anxiety, they show large increase in physiological arousal, so they are more prone to drop on the run (Jamshidi, 2006). One of the approaches that can explain the motivation and anxiety for athletes, especially in competitive situations is Dweck's cognitive-social approach (Dupeyrat, & Marian, 2005). Key concepts of this approach are intelligence beliefs and achievement goals. Intelligence beliefs consists of entity and incremental. Incremental intelligence belief refers that intelligence is flexible and can be increased (Dweck, & Leggett, 1988). Athletes who have incremental belief emphasize on improving skills and

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attempt to overcome past failures as much as possible (Dupeyrat, & Marian, 2005). In contrast, the entity belief refers that intelligence is fixed and cannot be increased (Dweck, & Leggett, 1988). Athletes with the entity belief, do the least effort to achieve their goals and overcome problems. Dweck (1988) believes that intelligence beliefs are side factors of successful behavior and do not impact directly on the success (Dupeyrat, & Marian, 2005). Concept of achievement goals oversees the reasons people have for doing task, in Dweck's opinion (Braten, & Stromso, 2003). In other words, in association with this component, the person answers the question why I perform this task.

Dweck has considered two types of targets: mastery goals and performance objectives. People who choose mastery goals emphasized on being skillful in assignments. In contrast, those who select performance goals seek to demonstrate their abilities to others and gain their favorable judgments (Braten, & Stromso, 2003). Some researchers extended Dweck's theory by dividing performance goals into two dimensions: performance-approach and performance-avoidance goals and they have considered mastery goals, performance-approach and performance-avoidance goals in their studies (Dupeyrat, & Marian, 2005; Elliot, & Church, 1997; Elliot, & Harachkiewicz, 1996). People, who choose performance-approach goals, consider their performance in comparison with others and know learning as a means to achieve a goal. Those, who select performance-avoidance goals, intend to obtain positive judgments from others and pretending to be clever to avoid punishment (Ryan, & Pintrich, 1997). Several researches have examined the relationship between intelligence beliefs and achievement goals.

For example, some research results suggest a positive and significant relationship between incremental intelligence belief and mastery goals (Dweck, & Leggett, 1988; Roedel, & Schraw, 1995; Stipek, & Gralinski, 1996; Spinath, & Pelster, 2003) and between entity belief and performance-approach goals (Dweck, & Leggett, 1988; Stipek, & Gralinski, 1996; Vermetten, Lodewijks, & Vermunt, 2001). In addition, entity intelligence beliefs have been accompanied by the selection of performance-avoidance goals (Braten, & Stromso, 2003; Spinath, & Pelster, 2003). Nevertheless, as mentioned, intelligence beliefs are implicit agents of successful behavior and according to Dweck's model (1988) the direct effect on athletes' competitive anxiety is not also considered in this study. On the other, hand Dweck & Leggett (1988) believe that people with learning goal orientation value to develop skills more and they compare themselves with external criteria such as scores and social points less and therefore they have lower levels of anxiety. In contrast, those, who have performance goal orientation, try to portray themselves with others to look smart and are worried about falling behind others and this cause to have higher level of anxiety compared with those who have the learning goal orientation (Dweck, & Leggett, 1988). In this field, Jamshidi's research (2009) and other researches suggests the crucial role of goal orientation in athletes' competitive anxiety. However, in this research, according to the relations between intelligence beliefs and achievement goals and the decisive role of goals in clarifying the competitive anxiety and based on lack of direct relationship between the intelligence beliefs and achievement goals that was referred to, we investigated the mediating role of achievement goals in relationship between intelligence beliefs and competitive anxiety of elite athletes in Fars province. Therefore, for this purpose, a model based on Dweck's cognitive social approach and previous researches was selected as an input model (Fig. 1) and was examined by using path analysis methods.

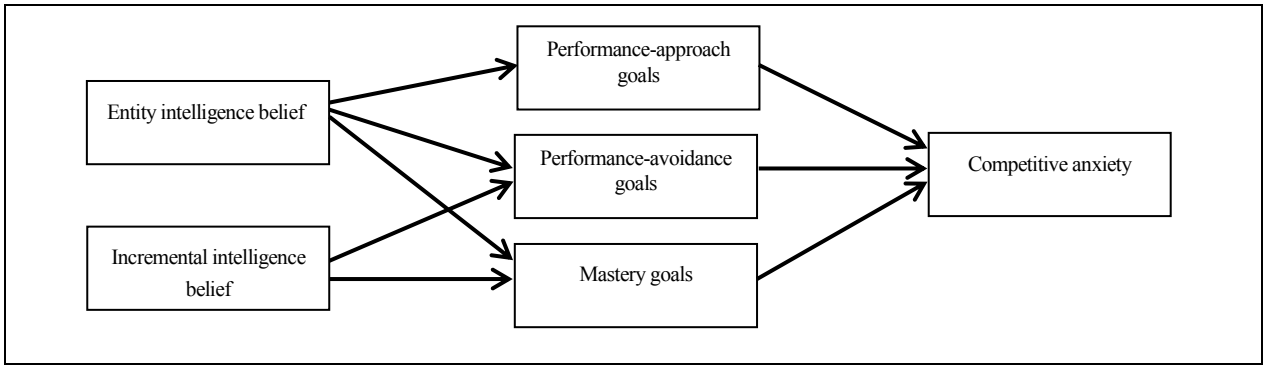

Figure 1. A theoretical model depicting the relations between intelligence beliefs, achievement goals, and competitive anxiety

2. Method

The method of this study is descriptive (non-experimental) and the study design is correlation, because the relationships between variables in the form of the causal model are discussed.

2.1. Participants

The sample consisted of 500 elite athletes in Fars Province chosen through multi-stage cluster sampling.

2.2. Measures

Participants completed three questionnaires. Competitive anxiety was measured by using *Martins Competitive Anxiety Scale* (1990). Achievement goals were measured by using the *Achievement Goal Scale* developed by Middleton and Midgley (1997). The scale measures three kinds of goals: mastery, performance-approach and performance-avoidance goals. To assess athletes' intelligence beliefs, the *Dupeyrat and Marian Intelligence Beliefs Questionnaire* (2005) was used. Cronbach's alpha reliability coefficients for subscales of incremental intelligence belief, entity intelligence belief, mastery goals, performance-approach, performance-avoidance goals and competitive anxiety in this study are respectively 0.78, 0.73, 0.76, 0.75, 0.79, and 0.70. Content validity based on expert opinion was considered to determine the validity of questionnaires.

3. Results

The correlation matrix and values of skewness and kurtosis for each variable have been given in table 1.

Table 1. Correlation matrix, skewness and kurtosis

No.	Variables	1	2	3	4	5	6	skewness	kurtosis
1	Entity intelligence belief	1						-0.12	-0.79
2	Incremental intelligence belief	-0.20**	1					0.49	-0.34
3	Performance-avoidance goals	0.23**	-0.26**	1				0.10	-0.73
4	Performance-approach goals	0.13**	-0.07	0.09**	1			0.29	-0.09
5	Mastery goals	0.07	0.42**	-0.12**	-0.03	1		0.14	-0.51
6	Competitive anxiety	0.20**	-0.21**	0.37**	0.04	-0.24**	1	0.15	-0.91

*P<0.05 **P<0.01

As can be seen in Table 1, performance-avoidance goals (0.43), mastery goals (-0.22), incremental intelligence beliefs (-0.21) and entity intelligence beliefs (0.20) had respectively the most correlation coefficients with competitive anxiety which all the coefficients were significant (P<0.01). The correlation coefficient between performance-approach goals and competitive anxiety was not statistically significant. Skewness and kurtosis rates of variables showed that distribution of variables is normal. In Table 2, direct, indirect and total effects of variables will be presented along with their meaningful levels.

As can be seen, none of the exogenous variables had direct effects on competitive anxiety. In addition, none of the endogenous variables had indirect effects on competitive anxiety. On the other hand, incremental and entity intelligence beliefs had direct effects on performance-avoidance goals and were respectively -0.22 and 0.18 that were both meaningful (P<0.01). The direct effect of entity intelligence beliefs on performance-approach goals (0.14) is meaningful (P<0.01). Hypothesis of direct effect of incremental intelligence beliefs on performance-approach goals was not examined. The direct effect of incremental intelligence beliefs on mastery goals (0.42) was meaningful (P<0.01). However, the direct effect of entity intelligence beliefs on mastery goals was not meaningful. The direct effects of performance-avoidance and mastery goals on competitive anxiety were respectively 0.35 and -0.20 that both effects were meaningful (P<0.01).

Table 2. Standardized direct, indirect, and total effects in the final model

Predictor	Criterion	Direct effect	Indirect effect	Total effect	Explained variance
Entity intelligence belief	Competitive anxiety	-	0.06**	0.06**	
Incremental intelligence belief		-	-0.16**	-0.16**	
Performance-avoidance goals		0.35**	-	0.35**	0.18**
Performance-approach goals		0.00	-	0.00	
Mastery goals		-0.20**	-	-0.20**	
Entity intelligence belief	Mastery goals	0.00	-	0.00	0.18**
Incremental intelligence belief		0.42**	-	0.42**	
Entity intelligence belief	Performance-avoidance goals	0.18**	-	0.18**	0.10**
Incremental intelligence belief		-0.22**	-	-0.22**	
Entity intelligence belief	Performance-approach goals	0.14**	-	0.14**	0.02
Incremental intelligence belief		-	-	-	

*P<0.05 **P<0.01

Direct effect of performance-approach goals on competitive anxiety was zero. Among of all research variables, performance-avoidance goals had the highest direct effect (0.35) on competitive anxiety. Indirect effects of incremental and entity intelligence beliefs on competitive anxiety were respectively -0.16 and 0.06 that both were meaningful (P<0.01). Regarding the lack of meaningfulness of indirect effect of performance-approach goals on competitive anxiety, we conclude that the indirect effects of incremental and entity intelligence beliefs on competitive anxiety only were done through mastery and performance-avoidance goals. The following, the fitted model of competitive anxiety accompanied by its fit indices is being exhibited.

Fit indices in Table 3 shows that the fit indices of competitive anxiety model are at a very good level.

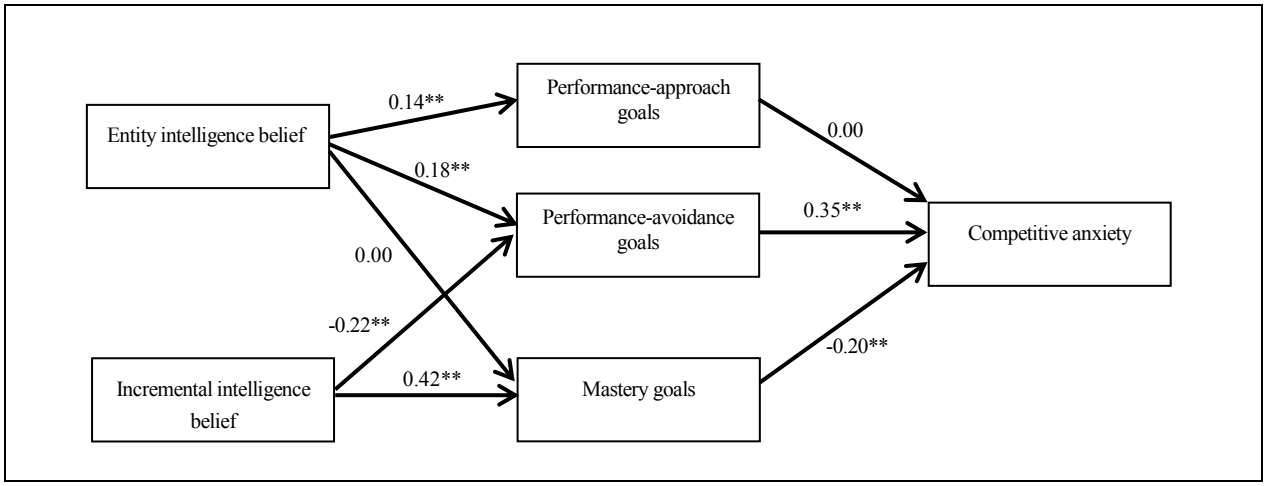

Figure 2. The fitted model of predicting competitive anxiety, depicting the relations between intelligence beliefs, achievement goals, and competitive anxiety

Table 3. Fit indices of competitive anxiety model

x2/df	RMSEA	GFI	AGFI	CFI	NFI
0.043	0.00	0.99	0.97	0.98	0.96

4. Discussion

This study was conducted with the aim of investigating the relationship between intelligence beliefs and competitive anxiety with regard to the mediating role of achievement goals among elite athletes in Fars province. To achieve this goal, by the help of Dweck's cognitive social approach and theoretical and empirical research

backgrounds, a conceptual model was proposed and tested by means of path analysis. Its results showed that the proposed model fits the data relatively well and intelligence beliefs and achievement goals accounted for 18% of the competitive anxiety variance. The meaningfulness of the indirect and negative effect of incremental intelligence beliefs on competitive anxiety shows that athletes, who believe that intelligence is a flexible and expandable quality, are involved in sports with the aim of becoming conversant and improving new skills and spend a lot of efforts to achieve their goals. As a result, these athletes are infected with lower competitive anxiety and they show their high performance. The meaningfulness of the indirect and positive effects of entity intelligence belief on competitive anxiety also shows that athletes, who believe that the quality of intelligence is constant, hereditary and none-expandable, are just looking to flaunt their ability and seem to being superior to others is very important for them. Such people also do sports activities and trainings just because of their fear of blame coaches and others. This group of athletes gives little value to exercises and is looking to success just with a small effort. As a result, these people have always been a kind of uncertainty during sports activities and competitions and are more exposed to competitive anxiety and the level of performance largely comes down. This finding is in line with the assumptions of Dweck's cognitive social approach (Dweck, & Leggett, 1988), because the intelligence beliefs considered as implicit factors in Dweck's approach and their indirect effects through the achievement goals on the behavior (here, emotional behavior) is considered. The results also showed that performance-avoidance goals have the highest and positive direct effect on competitive anxiety. This represents negative and damaging consequences of athletes' selecting performance- avoidance goals during sports activities, which eventually may lead to reduced performance. Direct and negative effect of mastery goals on competitive anxiety also reflects the pleasant consequences of this type of goal setting that is significant. Other results of this study showed that performance-approach goals do not have meaningful direct effect on competitive anxiety. In connection with this finding, Miguel, Kaplan and Middleton (2001) (quoted Rastegar, 2008) expressed that performance-approach goals are affected by characteristics of individuals and environmental conditions. It seems that this contradiction is because of the dependency of these variables to time, environment, measures, age groups and cultural factors. For example, elite athletes may require more effort and hard work to be successful than amateur athletes may. Finally, according to the indirect and negative effects of incremental intelligence beliefs and indirect and positive effect of entity intelligence beliefs on competitive anxiety and based on research results of Dweck & Leggett (1988) and Stipec & Gralinski (1996), it is noted that Peripheral structures and expectations of others about intelligence beliefs affect the formation of these beliefs. Therefore, the structure of sports environments should be designed so that led to the formation of incremental intelligence beliefs in athletes. In addition, according to the role of parental expectations and attitudes of teachers and other influential people in shaping the intelligence beliefs in athletes, it is recommended that these people should be aware of the consequences of these beliefs in athletes' competitive anxiety and performance. According to the importance and role of mastery goals in competitive anxiety, it is suggested that sports officials consider factors that lead to accepting mastery goals by athletes. For example, if the evaluation criteria based on activities of athletes and instead of comparing athletes together, focus on the skills, the conditions for acceptance of mastery goals will be provided. It is also recommended that the role of other motivational variables in predicting competitive anxiety will be considered in future studies.

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