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The relation between body awareness and track and field athletes' goal setting

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Abstract

Body awareness has been proposed as a major target of mindfulness interventions, though little is known of its association with achievement goals among track and field athletes. We in aimed to determine how body awareness and these achievement goals related among track and field athletes participating in the European Champion Clubs Cup in Mersin. We studied 70 volunteer athletes (38 female and 32 male). Among these 41 were runners, 17 were throwers and 12 were jumpers. Participants completed a Body Awareness Questionnaire and an Achievement Goals Questionnaire for Sport (AGQ-S) prior to competing. There were statistically significant positive correlations between Body Awareness and both Mastery Avoidance and Performance Avoidance ($r=.350^{**}$, $r=.350^{**}$, $p<0.005$). This significant correlation may be explained by an increased appreciation for body limitations through body awareness, that, in turn, positively relates to mastery and performance avoidance.

Keywords: track and field athletes, body awareness, achievement goals

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Introduction

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Understanding predictors of sport performance, in a variety of contexts and under various conditions, is a goal of sport related research. Among various factors, researchers have addressed in the pursuit of higher performance levels, athletes' achievement goals and their body awareness have been examined for their impact on peak performance in competitive sports, and body awareness has been a topic of particular interest in recent years. Both are relevant to track and field athletes, for whom success depends upon coordinated whole body activity.

Prior research has demonstrated that body awareness can be altered through changed mental processing during training. Body awareness represents an athlete's interpretation, appraisal, beliefs, and memories in a natural, phenomenological attitude of proprioception and interoception that includes conscious awareness of the body. Body awareness includes an attentional focus on the body and an awareness of internal body sensations (Mehling, Gopisetty, Daubenmier, Price, Hecht, Stewart, 2009). Inner body awareness interacts with thoughts and exteroceptive stimuli, but it is distinguishable from these in that it has key relevance for a deeper understanding of mind-body interactions. (Mehling et.al., 2009). High level body awareness has been identified as mental representations of the whole body that feed directly into and are informed by central conceptual and effective stages of body awareness. Low level body awareness is defined as awareness of the structure, layout, and instantaneous distribution of body parts; it is derived from mechanisms of somatic proprioception and somatosensation (Bermudez, 2009). Body awareness is of fundamental importance for the organism's survival, and it permits the organism to monitor homeostatic states, such as hunger and thirst, as well as to detect and anticipate threats to bodily damage (Bermudez, 2009). Body awareness also includes the concept of body dissociation, which can be a strategy to protect oneself from painful memories, thoughts and feelings; body dissociation may include normal daily experiences such as distraction and separating the bodily experience and emotion in order to avoid an unpleasant inner experience. In line with these definitions, achievement goals provide individuals a schema to clarify how to respond to events with different cognitive, emotional and behavioral patterns (Dweck and Leggett, 1988). The achievement of goals means that individuals have to describe a cognitive structure for how to define success and failure, emotional reactions, and to organize their subsequent behavior (Elliot & Murayama, 2008; Lau & Lee, 2008). Achievement goal orientation is related to success-related variables like academic self-efficacy, continuity in the face of difficulty, task selection and managing task anxiety (Dweck, 1986) It has long been known that interoceptive awareness plays an important role in the experience of emotions (James, 1984), and there is empirical evidence that the degree of person's perception of bodily functions is positively related to the intensity of emotions (Herbert, Pollatos, Schandry, 2007).

Fiori, Salvatore and Nicole (2017) conducted a study to investigate the relationship between psychometrically reported body and social awareness (including altruism, empathy, perspective-taking, and compassion) in 90 yoga and yoga-/mediation-naive control participants and reported that the body awareness and compassion were significant positive and independent predictors of yoga expertise. Kim Cha, Kang, Kim and Han (2016) carried out a study to assess body intelligence and brain activity. Body Intelligence Scale and resting state functional magnetic resonance imaging and found out that the sport dancers had increased body intelligence sensitivity compared with matched controls. And achievement goals studies examined the relationships between self-compassion and achievement goal orientations (Akin, 2008), reviewed the correlation in physical activity classes (Biddle, Wang, Kavussanu, Spray, 2003), investigated achievement goals of sport participants (Adie, Duda, Ntoumanis, 2008).

52 It was necessary to research on the basis of the belief in the body awareness of the limits of
53 movement, the beliefs of the athletes to achieve their goals for success, their focus on their goals to
54 sustain their achievements, and their perception of what they wanted to learn. The athlete who is
55 aware of his body is thought to be able to determine his goals in order to be successful. There are
56 many separate studies in the literature regarding body awareness and achievement goals.
57 Unfortunately, previous studies have not determined the correlation between body awareness and
58 achievement goals. Therefore, it is important to understand the correlation between body awareness
59 and achievement goals different factors affecting achievement goals and to deepen the analysis of
60 their will to succeed, especially if we bear in mind that body awareness may be predictors of
61 achievement. Therefore, the aim of this study was to determine the correlation between body
62 awareness and achievement goals in track and field athletes that participated European Champion
63 Clubs Cup in Mersin. The sub-objective of the study is to examine the correlation of body awareness
64 and achievement goals according to gender.

67 Method

69 Participants

70 The study was conducted on 38 female (mean age= 20.94 ± 3.97 ; mean training year= 9.65 ± 3.92) and
71 32 male (mean age = 22.82 ± 2.95 ; mean training year= 9.49 ± 2.98) totally 70 track-and-field that
72 participated the European Champion Clubs Cup in Mersin. 41 of them were runner, 17 of them
73 were thrower and 12 of them were jumper. Prior to the answering scale questions, informed constant
74 form signed by all of the participants as required by the Helsinki declaration.

76 Body Awareness Questionnaire

77 Body Awareness Questionnaire that originally developed by Shields, Mallory & Simon (1989) was
78 used for data collection. The scale has 18 items and 7-point Likert scale that assesses sensitivity to
79 bodily processes, ability to detect small changes in functioning, sleep-wake cycle, onset of illness
80 and the capability to anticipate bodily reactions to internal and environmental changes. Higher mean
81 score rejects higher sensitivity to somatic cues.

83 A 2X2 Achievement Goals Questionnaire for Sport

84 In this research, A 2X2 Achievement Goals Questionnaire for Sport that originally developed by
85 Conroy, Elliot and Hofer (2003) was used. Mastery-approach goals focus on achieving task-based
86 intrapersonal competence, with objectives related to skill development, mastery of task, and self-
87 improvement. Mastery-avoidance goals focus on avoiding task-based intrapersonal incompetence,
88 aiming to avoid not learning or not completing the task. Performance approach goals focus on
89 normative competence, with the objective to outperform others, win, or show others that you are
90 better. Performance-avoidance goals focus on avoiding normative incompetence, aiming to avoid
91 losing or performing badly compared to others. Interestingly, the 2x2 achievement goal framework
92 does not assume that these goals are mutually exclusive and recognizes that individuals will vary along
93 each of these 2x2 dimensions (Wang, Morin, Liu, Chian, 2016; Middleton and Midgley, 1997).

95 Statistical Analyses

96 Percentages according to gender and branches were evaluated. Spearman correlation coefficient was
97 used to determine correlations between all variables.

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103 **Results**

104 Research, aimed to find out correlation between body awareness and achievement goals,
105 consists of 38 female (54.3%) and 32 male (45.7%) track and field athletes that participated European
106 Champion Clubs Cup in Mersin. Research consists of 41 competitors (58.6%) in running, 17
107 competitors (24.3%) in throwing and 12 competitors (17.1%) in jumping branches (Table 1).
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Table 1. Percentages according to gender

Variable	N	Percent (%)
Female	38	54.3
Male	32	45.7
Running	41	58.6
Throwing	17	24.3
Jumping	12	17.1
Total	70	100.0

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112 **Table 2.** Spearman's Correlation analyses between Body Awareness and A 2X2 Achievement Goal
113 Questionnaire

Correlations		Mastery Approach	Mastery Avoidance	Performance Approach	Performance Avoidance
Body Awareness Questionnaire	Correlation Coefficient	.228	.350**	.217	.353**
	Sig. (2-tailed)	.057	.003	.071	.003

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116 According to the spearman correlation coefficient results there were positive correlation
117 between body awareness and mastery avoidance ($r=.350$, $p<.005$), and also body awareness and
118 performance avoidance ($r=.353$, $p<.005$) (Table 2).
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Table 3. Spearman correlation coefficient results according to gender

	Variables	Correlation Coefficient	Sig. (2-tailed)
Female	Body Awareness-Mastery Avoidance	.319	.051
	Body Awareness-Mastery Approach	.149	.374
	Body Awareness-Performance Avoidance	.603**	.000
	Body Awareness-Performance Approach	.355**	.029
Male	Body Awareness-Mastery Avoidance	.392*	.027
	Body Awareness-Mastery Approach	.288	.11
	Body Awareness-Performance Avoidance	.008	.964
	Body Awareness-Performance Approach	-0,069	.707

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* $p<.05$. ** $p<.005$

124 Just as the results of spearman correlation coefficient depending on gender; in females, there
125 were positive correlation between Body Awareness and Performance Approach ($r=.355$, $p=.029$),
126 Body Awareness and Performance Avoidance ($r=.603$, $p=.000$). In males; there was positive
127 correlation just only Body Awareness and Mastery Avoidance ($r=.392$, $p=.027$) (Table 3).
128

129 **Table 4.** Mean ranks according to branches

	Branch	N	Mean Rank
Mastery Approach	Running	41	37,13
	Throwing	17	34,12
	Jumping	12	31,88
	Total	70	
Mastery Avoidance	Running	41	36,99
	Throwing	17	31,50
	Jumping	12	36,08
	Total	70	
Performance Approach	Running	41	39,49
	Throwing	17	30,03
	Jumping	12	29,63
	Total	70	
Performance Avoidance	Running	41	37,10
	Throwing	17	35,32
	Jumping	12	30,29
	Total	70	
Body Awareness	Running	41	36,96
	Throwing	17	30,79
	Jumping	12	37,17
	Total	70	

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132 **Table 5.** Kruskal Wallis Test results according to branches

	Mastery Approach	Mastery Avoidance	Performance Approach	Performance Avoidance	Body Awareness
Chi-Square	.741	.891	3.835	1.047	1.202
Asymp. Sig.	.690	.640	.147	.592	.548

133 There was no significant difference in achievement goals and body awareness according to athletes'
134 branches.

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137 Discussion and Conclusions

138 The aim of this study was to determine the correlation between body awareness and
139 achievement goals in track and field athletes that participated European Champion Clubs Cup in
140 Mersin. And also, the sub-aims of the study are to examine the correlation of body awareness and
141 achievement goals according to gender and branches. And so this study incorporated correlation
142 analyses to examine that aimed to explain relationship between body awareness and achievement
143 goals.

144 In conceptualizing his theory of psychosexual development, Freud (1938) placed a great deal
145 of importance on body awareness by suggesting that each stage of an individual's personality
146 development is characterized by the experience of bodily sensations at different locations of the body.

147 According to the spearman correlation coefficient results there were positive correlation between
148 body awareness and mastery avoidance ($r=.350, p<.005$), and also body awareness and performance
149 avoidance ($r=.353, p<.005$) (Table 2). İlker and Ballı (2017) conducted a study to analyze the
150 predicted effect of motivational climate on physical self-perception ¹²physical education lesson. They
151 used Physical Self-Perception Profile Inventory and reported that mastery approach-avoidance
152 performance approach goals were positively correlated with perceived sport competence, physical
153 condition and physical strength perceptions, performance avoidance climate was positively correlated
154 with physical strength. Performance-approach goals arise to represent a valuable and beneficial form
155 of motivation in that they are able to provide the individual with competence feedback that is basic
156 ¹⁵ the individual's optimal functioning (Elliot and Moller, 2003). Research has consistently shown
157 ¹⁰ t performance-avoidance goals are associated with low interest and poor performance (Elliot and
158 Church, 1997; Elliot and McGregor, 2001; Elliot et al., 1999; Sideridis, 2005; Skaalvik, 1997). Mastery-
159 approach goals reflect persons' aim to develop and acquire competence and understanding of a task
160 or domain (Belenky and Nokes-Malach, 2012) and lead to constructive and reflective cognitive
161 processes that will support positive outcomes in terms of conceptual learning and transfer. The
162 person who has mastery-approach goals tend to perform better on more ¹¹ complex tasks than on
163 simple tasks (Graham & Golan, 1991; Jagacinski, Madden, & Reider, 2001). Mastery-avoidance goals
164 are strivings to avoid intrapersonal or absolute incompetence (Ciani and Sheldon, 2010). No
165 comparable result to our study was found in the literature relating to correlation between body
166 awareness and achievement goals. In our study, a moderate correlation was observed between body
167 awareness and performance avoidance. It is known that participants appear to be ineffective towards
168 instructors, their families, other people around them, and exhibit an "avoidance" behavior in order
169 to avoid being ridiculous in any situation (Dinc, 2010; Morris ve Kavussanu, 2008). Therefore, people
170 who have high body awareness may show their avoidance behavior because they know their
171 limitations. In performance-avoidance, one can leave what they have done in half in case of any
172 failure. People; as long as they aware of themselves correctly, they may feel their limitations, and in
173 this case, they may be expected to exhibit "avoidance" behavior.

174 Tsur, Berkovitz and Ginzburg (2016) conducted a study about body awareness, emotional
175 clarity and authentic behavior and their findings suggest that the body and the awareness to its
176 experiences are relevant for enabling adaptive behavior. However, they emphasized that this
177 awareness alone is not enough alone. According to current study results, individuals with higher body
178 awareness focused on avoiding intrapersonal or task-based incompetence. For the purpose of
179 mastery avoidance, the athlete may be the primary candidate. When athletes reach the peak of their
180 potential, they may begin to focus on not doing worse than they have done in the past. Also, they
181 need to have high "body awareness" to understand whether their potential is at the peak. Common
182 sport branches, for instance focusing on personal bests in swimming or track and field might impel
183 some athletes to focus on not performing much worse than their personal best, as opposed to trying
184 to exceed their personal best. For this reason, mastery avoidance goals cannot be underestimated as
185 important forms of regulation in some instances ⁵ Perceived whole body competence was posited to
186 be an antecedent of mastery avoidance goals. Low perceived competence was expected to orient
187 individuals to the possibility of task incompetence and, therefore, to prompt mastery avoidance goal
188 adoption (Elliot and Conroy, 2005).

189 Current study results showed that there was positive correlation between Body Awareness
190 and Performance Approach ($r=.355, p=.029$), Body Awareness and Performance Avoidance ($r=.603,$
191 $p=.000$) in females and positive correlation between Body Awareness and Mastery Avoidance
192 ($r=.392, p=.027$) in males (Table 3). In performance goals, these correlations can be reached in the
193 sense that females are more influenced by external reactions and congratulations. Male participants
194 results may be caused by the fact that males are aware of the limitations of their bodies and are
195 worried about avoiding the wrong learning, not being able to learn every ³ ing they need to learn.
196 Franzoi, Kessenich and Sugrue (1989) conducted a study to find out the gender differences in the

197 experience of body awareness and reported that females were awareness was more likely to be
198 directed toward specific body parts or functions rather than to the body as a whole. And also, there
199 was no difference in their degree of body awareness according to gender. Unfortunately, comparable
200 result to our study was not found in the literature relating to correlation between body awareness and
201 achievement goals according to gender.

202 In sum, we believe that these studies contribute to an understanding of correlation between
203 body awareness and achievement goals processes. These results suggest that high body awareness
204 have effects on mastery avoidance and performance avoidance. Nevertheless, studies related on this
205 subject in different sport branches will allow for a clearer understanding of the correlation. The lack
206 of comparable research led to limitations on the discussion of the study. Body awareness is thought
207 to be crucial to sporting success. Therefore, it is recommended that new explanatory and supporting
208 studies be carried out in this area.

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