



## THE ROLE OF ATHLETIC IDENTITY IN PREDICTION OF ATHLETES' MENTAL TOUGHNESS<sup>i</sup>

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### Abstract:

**Purpose:** The purpose of this study was to investigate the role of athletic identity as a predictor of mental toughness in male and female athletes. **Method:** Eighty six female ( $M_{age}=25.33\pm 4.35$ ) and 105 male ( $M_{age}=24.66\pm 3.66$ ), totally 191 athletes ( $M_{age}=24.96\pm 3.99$ ) voluntarily participated in this study. The Athletic Identity Questionnaire (AIQ) and The Sports Mental Toughness Questionnaire were administered to all participants. Data were analyzed by using descriptive statistics and Stepwise Multiple Regression Analysis. **Results:** Stepwise Multiple Regression Analysis revealed that competence and encouragement by friends ( $R=0.51$ ;  $R^2=0.26$ ;  $p<.05$ ) subscales of athletic identity were significant predictors of mental toughness of athletes. Analysis also indicated that importance and appearance ( $R=0.51$ ;  $R^2=0.26$ ;  $p<.05$ ) subscales of athletic identity were predictor of mental toughness of female athletes. Beside this, competence and encouragement by friends ( $R=0.54$ ;  $R^2=0.29$ ;  $p<.01$ ) subscales of athletic identity were predictor of mental toughness of male athletes. **Conclusion:** It can be concluded that, female and male athletes' athletic identities plays a significant role in their mental toughness. In other words, spending effort for being a team, increasing the quality of training and physical appearance is important for female athletes to overcome challenges. On the other hand, male athletes give more attention to motor capacity, athletic competence and friends' encouragement to get over the difficulties.

**Keywords:** athletes, athletic identity, mental toughness

<sup>i</sup> LE RÔLE DE L'IDENTITÉ ATHLÉTIQUE DANS L'ÉVALUATION DE LA RÉSISTANCE MENTALE DES ATHLÈTES

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### **Le résumé:**

**Les objectifs:** L'objectif de cette étude est de faire une recherche sur l'identité athlétique dans le cadre de l'évaluation de la résistance mentale chez les femmes et les hommes athlètes. **La méthode:** Au total 191 athlètes ( $M_{age}=24.96\pm 3.99$ ) dont 86 femmes ( $M_{age}=25.33\pm 4.35$ ) et 105 hommes ( $M_{age}=24.66\pm 3.66$ ), ont participé volontairement à cette recherche. L'Enquête sur l'Identité athlétique (EIA) et l'Enquête sur la Résistance mentale sportive ont été pratiqués aux participants. Les données obtenues ont été analysées en utilisant les statistiques descriptifs et la technique de régression multiple pas à pas (Stepwise Multiple Regression). **Le résultat:** l'analyse de régression multiple pas à pas a révélé que la compétence et l'encouragement des amis, étant les sous-échelles de l'identité athlétique, sont des facteurs importants de la résistance mentale ( $R=0.51$  ;  $R^2=0.26$  ;  $p<.05$ ). L'analyse a également démontré que l'importance et l'apparence étant les sous-échelles de l'identité athlétique chez les femmes ( $R=0.51$  ;  $R^2=0.26$  ;  $p<.05$ ) constituent les indicateurs de la résistance mentale. De plus, la compétence et l'encouragement des amis étant les sous-échelles de l'identité athlétique ( $R=0.54$  ;  $R^2=0.29$  ;  $p<.01$ ) constituent les indicateurs de la résistance mentale chez les hommes.

**Les mots-clés :** les athlètes, l'identité athlétique, la résistance mentale

### **1. Introduction**

In recent years with researchers' interest, growing body of research has begun to explore the components of athletic performance. This literature contains different numerous constructs relating to performance such as motivational climate (Hodge, Henry & Smith, 2014), personality (Raglin, 2001), self-concept perceptions (Marsh & Perry, 2005), anxiety (Raglin, 2001; Woodman & Hardy, 2003), athletic identity (Ahmadabadi, Shojaei & Daneshfar, 2014) and mental toughness (Gucciardi & Jones, 2012).

Especially, athletic identity and mental toughness have been studied in sport psychology literature recently (Crust & Clough, 2011; Nicholls, Polman, Levy & Backhouse, 2009). According to Erikson (1968), identity is a process that consolidates elements of the personality and connects individual and society. "Role-identities" are defined in part by the social structure and in part by the individual, and when taken together they are said to represent the person (see Callero, 1985). An "identity" has characterized as a self-understanding, self-objectification or integration of information about the self (see Anderson, 2004). In sport psychology literature, the term "athletic identity" is used rather than "identity". Anderson (2004) tried to put some "athletic"

components together in his research. It is related with the self, physical-self which includes sport/exercise specific concepts such as strength, how people see themselves about sport/exercise situations and social roles. Athletic identity refers to the degree to which people with the athlete role (see Martin, Eklund & Adams-Mushett, 1997) or it has been identified as the extent to which an individual relates to the role of an athlete (see Green & Weinberg, 2001). According to Anderson (2004), athletic identity was conceptualized as a relatively stable but potentially changeable identity describing an attribute that all people possess to varying degrees. According to Martin, Eklund and Adams-Mushett (1997) athletic identity is a relevant psychological construct to examine because of the potentially important psychological, social, and behavioral ramifications of an athletic identity. An individual with a strong athletic identity has a self-schema built upon being an athlete and processes information from an athletic perspective (Martin, Adams-Mushett & Smith, 1995). Researchers tried to determine the athletic identity with different measurement tools. The Athletic Identity Measurement Scale (AIMS), The Athletic Identity Questionnaire (AIQ) and Academic and Athletic Identity Scale (AAIS) are used to measure the athletic identity. Previous studies found the athletic identity was related with children's and adolescent's physical activity participation (Anderson, Masse, Zhang, Coleman & Chang, 2009), drinking habits (Grossbard, Geisner, Mastroleo, Kilmer, Turrisi & Larimer, 2009), disordered eating (Gapin & Petruzzello, 2011), goal orientations and moral orientations (Proios, 2013), passion and burnout (Martin & Horn, 2013), athletes' retirement plans (Martin, Fogarty & Albion, 2014), and mental toughness (Petrie, Deiters & Harmison, 2014).

Like athletic identity, mental toughness has become an interesting subject for researchers and coaches. It accepted as an important variable in athletes' persistence and stability in performance. Researchers and theorists discussed what mental toughness is, and they have defined it in different terms. These researchers/theorists underline some basic characteristics of mental toughness. They defined mental toughness as, coping effectively with pressure and adversity so that remains little affected, recovering or rebounding from setbacks and failures as a result of increased determination to succeed, persisting or refusing to quit, being competitive with self and with others, being insensitive or resilient, having unshakeable self-belief in controlling one's own destiny, thriving on pressure and possessing superior mental skills (see Crust, 2007). Researchers emphasized the significant of mental toughness. Some researchers think mental toughness is a psychological requirement (see Golby and Sheard, 2004) to being an elite athlete. For example, while Horsburgh, Schermer, Veselka and Vernon (2009) mentioned about the mental toughness' importance and necessity for athletic performance and explain the "4C Model (control, commitment and challenge, confidence) of Mental Toughness"; other researchers stated that mentally

tough athletes are more successful in rehabilitation in sport injuries (Levy, Polman, Clough, Marchant & Earlei, 2006), coping with stress more effectively (Kaiseler, Polman & Nicholls, 2009), emotionally & ideationally stable, relax and optimist (Nicholls, Polman, Levy & Backhouse, 2008). In sport environments, mental toughness is found related with performance antecedents such as using problem or approach coping strategies (Nicholls, Polman, Levy & Backhouse, 2008), using psychological strategies (Crust & Azadi, 2010), sporting experience (Nicholls, Polman, Levy & Backhouse, 2009), cultural differences (Thelwell, Such, Weston, Such & Greenlees, 2010), positive trait appraisals, positive behaviors and better coping ability injured athletes' (Levy, Polman, Clough, Marchant & Earle, 2006).

Athletic identity and mental toughness are fundamental factors for athletes' performance in competitive sports. Athletic identity also, as one of the important variables in athletic career process and a predictor of athletes' general attitudes toward sport specific situations has an influence on mental toughness. Thus, the present study may have contributed to the athletic identity and mental toughness literature by examining the possible influence of athletic identity on the mental toughness in sport environment. The main purpose of this study was to investigate the role of athletic identity in athletes' mental toughness. The study was also aimed to investigate whether male and female athletes' athletic identities are predicting their mental toughness' differently or not. In line with the two main aims of this study, it was hypothesized that athletic identity would be positively related with mental toughness and it would differ between male and female athletes' athletic identities predicting their mental toughness.

## 2. Methods

### 2.1 Participants

A hundred and five male ( $M_{age}=24.66\pm 3.66$ ) and 86 female ( $M_{age}=25.33\pm 4.35$ ), totally 191 athletes ( $M_{age}=24.96\pm 3.99$ ) from different sports including soccer, basketball, track and field, volleyball, kick-box and handball, participated in this study voluntarily. Athletes' sport experiences were  $7.94 \pm 4.66$  years.

### 2.2 Measures

**A. The Sports Mental Toughness Questionnaire-14:** The Sports Mental Toughness Questionnaire (SMTQ-14) was developed by Sheard, Golby and Wersch (2009). The scale has 14 items and 3 subscales (confidence, control and constancy). Each item is rated 4-point Likert scale. The validity and reliability of Turkish version of scale was determined by Altıntaş (2015). In Turkish Version of this scale, the Cronbach alpha coefficients were .84 for confidence, .79 for control and .51 for constancy subscales

(Altıntaş, 2015). For the present sample, the internal consistency was between 0.56 (control subscale) and 0.68 (confidence subscale).

**B. The Athletic Identity Questionnaire:** The Athletic Identity Questionnaire (AIQ; Anderson, Masse and Hergenroeder; 2007) consist of 40 items and four subscales (appearance, competence, importance and encouragement). The scale is assessed based on a 5-item Likert scale. The reliability and validity of Turkish version of this scale were tested by Aşçı, Kazak Çetinkalp and Altıntaş (2014). Internal consistency coefficients of "Athletic Identity Questionnaire" were found 0.98 for whole scale (Aşçı, Kazak Çetinkalp and Altıntaş, 2014). In Turkish Version of this scale, the Cronbach alpha coefficients were 0.82 appearance subscale; 0.93 for competence subscale; 0.92 for importance subscale and 0.96 for encouragement subscale [0.92 for encouragement by family; 0.93 for encouragement by friends; 0.96 for encouragement by significant others] (Aşçı, Kazak Çetinkalp and Altıntaş, 2014). The internal consistencies for present sample were between 0.73 (appearance subscale) and 0.91 (encouragement by significant others subscale).

### 2.3 Procedure and Data Analysis

The two main scales were administered to athletes in group settings, nearly 1 hour after their training sessions. The verbal and visual information were provided about how to respond to items in each questionnaire. SPSS 21 was used to analyze the data. Descriptive statistics, Pearson Correlation Analysis and Stepwise Multiple Regression Analysis were used in this study. Stepwise Multiple Regression Analysis was used to determine whether the athletic identity might predict the mental toughness of athletes. Exploration of the assumptions associated with regression analyses (normality, homoscedasticity, linearity, multicollinearity) suggested that there were no notable problems in the data. Both linearity and homoscedasticity assumptions were acceptable according to a scatter plot of the residuals. Moreover, to explore whether the data were marked by multicollinearity, tolerance statistics (.77) were examined. The obtained values were within acceptable limits.

### 3. Results

Descriptive statistics of variables (athletic identity and mental toughness) in this study has been presented in Table 1.

**Table 1:** Descriptive Statistics For Athletic Identity and Mental Toughness

	Male (n=105)		Female (n=86)		All Athletes (n=191)	
	M	SD	M	SD	M	SD
<b>Athletic Identity</b>	3.93	0.54	3.83	0.64	3.88	0.59
Appearance	3.86	0.80	3.75	0.80	3.81	0.80
Competence	4.23	0.69	3.95	0.83	4.10	0.77
Importance	4.13	0.62	3.86	0.73	4.01	0.68
Encouragement by family	3.46	0.94	3.68	0.89	3.56	0.92
Encouragement by friends	3.93	0.80	3.87	0.82	3.90	0.81
Encouragement by significant others	3.93	0.85	3.85	0.97	3.89	0.90
<b>Mental Toughness</b>	2.89	0.42	2.74	0.38	2.82	0.41

Stepwise Multiple Regression analysis indicated that both competence and encouragement by friends subscales were significantly and positively related to mental toughness ( $R=0.51$ ;  $R^2=0.26$ ;  $F_{(1,179)}=31.46$ ;  $p<0.01$ ) (Table 2 and 3).

**Table 2:** Regression Results for Athletic Identity from Mental Toughness

Model	R	R <sup>2</sup>	Adj R <sup>2</sup>	SE Est.	Change Statistics				
					$\Delta R^2$	$\Delta F$	df <sub>1</sub>	df <sub>2</sub>	p
Mental Toughness									
Model 1	0.48	0.23	0.23	0.36	0.23	54.40	1	180	.000
Model 2	0.51	0.26	0.25	0.36	0.03	6.78	1	179	.010

**Table 3:** Coefficients for Multiple Regression Predicting Athletic Identity Needs from Mental Toughness

Model	Unstandardized Coefficients		Standardized Coefficients		t	p
	$\beta$	SE	$\beta$			
	Mental Toughness					
Model 1 (Constant)	1.76	0.15			11.93	.000
Competence	0.26	0.04	0.48		7.38	.000
Model 2 (Constant)	1.59	0.15			9.93	.000
Competence	0.21	0.04	0.39		5.34	.000
Encouragement by Friends	0.10	0.04	0.19		2.60	.010

Another Regression analysis was used for determine the whether male and female athletes' athletic identities predicts their mental toughness' differently or not. Regression analysis results showed female athletes' importance and appearance

subscales were significantly related with mental toughness ( $R=0.51$ ;  $R^2=0.26$ ;  $F_{(1,77)}=13.64$ ;  $p<0.01$ ) (Table 4 and 5).

**Table 4:** Regression Results for Athletic Identity from Mental Toughness for Female Athletes

Model	R	R <sup>2</sup>	Adj R <sup>2</sup>	SE Est.	Change Statistics				
					ΔR <sup>2</sup>	ΔF	df <sub>1</sub>	df <sub>2</sub>	p
Mental Toughness									
Model 1	0.47	0.22	0.21	0.35	0.22	21.58	1	78	.000
Model 2	0.51	0.26	0.24	0.34	0.05	4.68	1	77	.034

**Table 5:** Coefficients for Multiple Regression Predicting Athletic Identity Needs from Mental Toughness for Female Athletes

Model	Unstandardized Coefficients		Standardized Coefficients		t	p
	β	SE	β			
	Mental Toughness					
Model 1 (Constant)	1.76	0.23			8.08	.000
Importance	0.26	0.06	0.47		4.65	.000
Model 2 (Constant)	1.62	0.22			7.31	.000
Importance	0.17	0.07	0.31		2.51	.014
Appearance	0.13	0.06	0.26		2.16	.034

On the other hand, male athletes' competence and encouragement by friends subscales were significantly related with mental toughness ( $R=0.54$ ;  $R^2=0.29$ ;  $F_{(1,99)}=20.31$ ;  $p<0.01$ ) (Table 6 and 7).

**Table 6:** Regression Results for Athletic Identity from Mental Toughness for Male Athletes

Model	R	R <sup>2</sup>	Adj R <sup>2</sup>	SE Est.	Change Statistics				
					ΔR <sup>2</sup>	ΔF	df <sub>1</sub>	df <sub>2</sub>	p
Mental Toughness									
Model 1	0.49	0.24	0.23	0.37	0.24	31.29	1	100	.000
Model 2	0.54	0.29	0.28	0.36	0.05	7.34	1	99	.008

**Table 7:** Coefficients for Multiple Regression Predicting Athletic Identity Needs from Mental Toughness for Male Athletes

Model	Unstandardized		Standardized	t	p
	Coefficients		Coefficients		
	$\beta$	SE	$\beta$		
Mental Toughness					
Model 1 (Constant)	1.65	0.23		7.28	.000
Competence	0.30	0.05	0.49	5.94	.000
Model 2 (Constant)	1.37	0.24		5.66	.000
Competence	0.24	0.06	0.40	4.43	.000
Encouragement by Friends	0.13	0.05	0.25	2.71	.008

#### 4. Discussion

The present study was designed to determine the role of athletic identity in prediction of athletes' mental toughness. Results support our initial hypothesis, indicating significant relationship between athletic identity and mental toughness. Competence and encouragement by friend's sub-dimensions of athletic identity were found significantly and positively related to mental toughness. According to Sachs, "*athletic identity may be one of the important components of the social, psychological and physiological factors that underlie exercise addiction*" (see Brewer, Van Raalte and Linder, 1993). Result of this study support this argument. In other words, athletes' perceptions of competence in their sports, feeling of their own sport specific success and teammates' support have an influence on their mental toughness. With altering the athletic identity, athletes can change their self-regulation toward their athletic performance and its long-term process. Also, it is known that the less mentally tough athletes reported variability in self-beliefs of their abilities (Petrie, Deiters and Harmison, 2014). Petrie, Deiters, and Harmison (2014) suggest that athletes who have low levels of mental toughness and family social support miss more practice and competition days owing to injury when they experience high levels of positive life stress.

The other results of regression analysis showed that, female and male athletes' athletic identities effects differently on their mental toughness. Importance and appearance sub-dimensions of athletic identity were significantly related with mental toughness for female athletes. It can be said that being fit, having athletic appearance and the perception of whether having appropriate body form according to her own sport branch takes important place for female athletes to face with sport specific problems. Addition to this, female athletes who really like what she is doing, value their sports greatly and think the sport loom large in their lives, are more stubborn at being

successful in sport. These athletes like their sport despite failures, long and tiresome trainings/camps, mentally tough games etc... And they are likely fight more for being a successful athlete, a victory and solve the performance problems by comparison to other athletes. Another results showed that competence and encouragement by friend's sub-scales are predictor of mental toughness in male athletes. Male athletes, who think themselves adequate enough to be successful in their sport branches, are more mentally tough. Male athletes with high perception of competence and have belief in their own athletic skill are deal with sport specific problems easily. When they come up against with problematic situations, they don't give up and keep trying to find a solution. These athletes have faith in their abilities can lead them to success, for this reason they are emotionally stable, decisive, fighter and they have self-confidence in coping with the difficulties. Chen Snyder and Magner (2010) found that team athletes rated the importance of their role as an athlete, social relationships and personal attributes as more highly than individual athletes.

In conclusion, according to results of this study, it can be said that athletic identity has an important role in predicting athletes' mental toughness. Sense of competence and friends' encouragement are important factors for both male and female athletes in dealing sport specific situations. Athletes considering themselves being successful athletes and are supported by friends can be tougher in facing problems/hardships of sport environment.

The present findings need to be considered in light of several limitations. First, the data collected from Ankara providence, Turkey and all participants were from Turkey. Second, this study was not design longitudinal; athletes filled the questionnaires one time at the middle of the season. In line with these limitations, future researches may contain a larger sample or can be a longitudinal study to see the time-based differences on athletic identity. Beside this, future researchers can pay attention on cultural differences, sport specific characteristics, differences between athletes' skill levels (Olympic athlete / national team athletes or regular athletes). Also in further studies, differences between team sport and individual athletes' athletic identities, age group and/or sport experience differences can be investigated.

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