

## Task and Ego Orientation, Mental Toughness and Flow State among Athletes

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### ABSTRACT

*The present study aimed to examine the interrelationship among task orientation, ego orientation, mental resilience, and the flow experience among athletes. 111 athletes, ranging from club level to national level, participated in this study. Data were acquired through both offline and online methodologies employing the flow state scale, mental toughness questionnaire, and the Task and Ego Orientation in Sport Questionnaire. The findings of the study indicate that task orientation and ego orientation are significantly and positively correlated with flow state, but compared to ego orientation, task orientation has a better correlation with flow state. Similarly, mental toughness also has a significant positive correlation with flow state. Spearman rank correlation was carried out to find out the relationship between the study construct. Mann-Whitney U test was conducted to examine the differences between individual and team sports based on ego orientation, task orientation, mental toughness, and flow state. A statistically significant difference was identified between individual sports and team sports concerning flow state and confidence. Conversely, no significant difference was observed between individual and team sports regarding task-ego orientation and other dimensions of mental toughness. The findings of the study will help the practitioners to develop and provide strategies for enhancing the mental toughness and flow state in athletes.*

**Keywords:** Flow state, Mental toughness, Task and Ego orientation

### INTRODUCTION

Sports psychology is a developing area in psychology, and now many studies are coming from psychology connected with sports. “Sport and exercise psychology is the scientific study of people and their behaviors in sport and exercise contexts and the practical application of that knowledge” (Gill & Williams, 2008). So, research in psychology related to sports helps to find new possibilities in

sports by developing the mental health of the athletes.

“The flow state (flow) is defined as the optimal state of mind in which an individual feels cognitively efficient, deeply involved, and highly motivated, and also experiences a high level of enjoyment” (Singh et al, 2016). Flow has been extensively reviewed in the context of different sports (Boudreaux et al,

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2020). Life gives opportunities to experience flow and athletic life offers many opportunities to experience flow. Flow state helps the athlete to perform at maximum because in this state athlete completely engages in sports without any kind of distractions (Saltzman, A., 2018). When we are looking at the best precious moments in an elite athlete's memory then we can understand that at that time these athletes are going through the flow state. A runner said from his experience 'he felt in complete control entire the time, and he didn't experience any of the agony that he would normally experience during that run.' Every athlete from all corners of the globe is looking for the moments like these.

Task and ego orientation can influence the flow state (Schuett, 2001, Kassim et al, 2014; Stavrou et al, 2015). Athletes with task orientation concentrate on the action and do hard work as a result. Athletes with ego orientation are continuously concerned about being judged in comparison to other athletes, so they will try to knock other athletes down while exalting themselves (Nicholas, 2022). Task-oriented athletes talk less and they are hard workers, whereas athletes with ego orientation talk more and work less. Athletes with task oriented are work hard, perform better, have good relationships with teammates, best leaders, and are happier athletes than ego-oriented athletes. Athletes are more likely to have pleasant emotional experiences in task-oriented contexts. Climates that are ego-oriented elicit negative emotional experiences. Many studies discovered that an athlete with high task orientation reported higher interest and enjoyment. Ego-

oriented athletes believe their abilities are inferior to those of their competitors and are more likely to experience physical and cognitive anxiety before and during competition. Task-oriented athletes are less prone to physical and cognitive distress (Jakobson, 2021). Task and ego orientation are based on decisions made by a person about his/her ability level, so these orientations can differ according to how much a person understands him/her (Eylem, 2018).

Mental toughness can be defined as a measure of a person's resilience and self-confidence which can be used to forecast success in sports, academia, and business. (G C Liew, 2019). A bad mental toughness is an enemy for athletes. Mental toughness is "Having the natural or developed psychological edge that enables you to: generally, cope better than your opponents with the many demands (competition, training, lifestyle) that sport places on a performer; specifically, be more consistent and better than your opponents in remaining determined, focused, confident, and in control under pressure" (Jones & Connaughton, 2002). Mental toughness is routinely mentioned by athletes, coaches, and applied sports psychologists as one of the best essential psychological qualities connected to outcomes and achievement in top sports. Goldberg classified mental toughness into five different types based on mental functioning at the time of competitive situations that are "Rebound ability, ability to handle pressure, concentration, confidence, and motivation".

"Rebound ability refers to the mental potential to rebound from adversity setbacks and obstacles encountered

before and during the performance” (Goldberg, 1998; Mladenovic and Trunic 2019). “Ability to handle pressure is the mental potential to deal with different external and internal factors that may raise a feeling of pressure” (Baric, 2011). “Concentration is the ability to focus effectively on the task at hand while ignoring distractions, and is a vital prerequisite of successful performance in sports” (Schmidt & Lee, 2011). Confidence can be defined as the “belief that a sports person possessed about his ability to be successful in sport in general (trait sport confidence) and in specific sports competitions (state sport confidence)” (Vealey & Chase, 2008). “Motivation is a particularly relevant issue in sport. It can be defined as direction and intensity of effort. Intensity refers to the quantity of effort, while direction refers to what a person is drawn to. Evidence suggests that enhanced motivation promotes learning, performance, enjoyment, and persistence in sports, among other benefits” (Mladenovic, 2016).

The present study aims to find out the relationship between flow state, ego orientation, task orientation, and mental toughness among athletes. Also, the difference between individual and team sports athletes in ego and task orientation, mental toughness, and flow state.

## METHODOLOGY

### *Study design*

The current investigation employed a correlational cross-sectional research design. This correlational framework represents a type of non-experimental inquiry aimed at elucidating the statistical interrelationships or associations among

the variables, as opposed to establishing direct causal linkages.

### *Sample*

The present study included 111 National to club-level active athletes, with at least 5 years of athletic experience. Data was collected from both male and female athletes. All the participants were within the age group of 18 to 28 years. The sample comprised 52 individual sport athletes and 59 team sport athletes. The convenience sampling method was used to collect data.

### **Measures**

#### **Flow state scale (FSS) (Jackson, 1996):**

It is a new measure of flow in sports and physical activity settings. FSS is a 36-item scale, and a participant can respond to each item by using a 5-point Likert rating scale from strongly disagree to strongly agree. The reliability of the flow state scale was found to be 0.83. Flow is a hypothetical construct, so its effectiveness must be established through construct validity investigations.

#### **Task and ego orientation in sports questionnaire (TEOSQ) (Duda 1989):**

This Questionnaire can be used to determine whether a person defines success in sports as “task-oriented” or “ego-oriented.” TEOSQ is a 13-item questionnaire measuring Task orientation (7 questions) and the other ego orientation (6 questions) the answers are indicated on a 5-point scale where 1= strongly agree and 5= strongly disagree. The reliability of the scale is 0.70.

#### **Mental Toughness Questionnaire (Goldberg, 1998):**

This questionnaire consists of 30 items measuring mental

toughness in five areas, i.e. rebound ability, ability to handle pressure, concentration, confidence, and motivation. There was only a true/false Answers option in this questionnaire and subjects had to Tick only one option. This questionnaire considered a value of 0.70 for reliability.

The statistical analyses carried out for this study are normality test, descriptive statistics, Spearman rank correlation analysis, and Mann – Whitney U-test.

## RESULT

Normality was tested by using the Shapiro-Wilk test (Table 1). In the

Shapiro-Wilk test if the significant value is greater than .05, then the data will be normally distributed. In the present sample, the significant value for all the variables except ego orientation ( $p = .28$ ) is less than .05, hence the data cannot be assumed as normally distributed.

According to the test of normality, data are not normally distributed. so non-parametric tests such as Spearman- Rank correlation and Mann-Whitney U test were used to analyze the data.

Mean, Standard Deviation, and Cronbach's alpha are represented in Table 2. The internal consistency reliability of all the measures was tested. The reliability

**Table 1: Test of normality (Shapiro-Wilk)**

Variables	Statistic	df	Sig.
Ego Orientation	.99	111	.28
Task Orientation	.91	111	.00
Mental Toughness	.98	111	.04
Flow	.97	111	.01

*df; degree of freedom*

**Table 2: Mean, Standard Deviation, and Cronbach's alpha**

Variables	Mean	Standard Deviation	Cronbach's alpha
EO	2.73	.69	0.72
TO	3.69	.74	0.84
R	3.17	1.63	1
P	3.42	1.43	1
C	3.40	1.51	1
CF	3.85	1.43	1
M	4.15	1.11	1
MT	18.01	4.73	0.72
FS	125.09	21.33	0.95

*Note: EO- Ego orientation, TO- Task orientation, R- Rebound ability, P- Ability to handle pressure, C- Concentration, CF- Confidence, M- Motivation, MT- Mental toughness, FS- Flow state*

**Table 3: Correlation coefficient**

	EO	TSO	R	P	C	CF	M	MT	F
EO									
TSO	.33**								
R	.02	.23*							
P	-.09	.16	.42**						
C	-.16	.16	.44**	.40**					
CF	-.06	.34**	.49**	.34**	.38**				
M	.12	.22*	.09	-.01	.10	.30**			
MT	-.05	.32**	.79**	.67**	.68**	.76**	.37**		
F	.34**	.54**	.20*	.08	.02	.28**	.27*	.24*	

*Note:EO- Ego orientation, TSO- Task orientation, R- Rebound ability, P- Ability to handle pressure, C- Concentration, CF- Confidence, M- Motivation, MT- Mental toughness, F- Flow state.*

*\*\*Correlation is significant at the 0.01 level (2-tailed), \*Correlation is significant at the 0.05 level (2-tailed). Percentage appears in the parentheses*

coefficient (Cronbach's alpha) for ego orientation is .72, task orientation is .84, mental toughness is .72, and flow state is .95. All the scales show good reliability.

The correlation coefficient is represented in Table 3. Spearman Rank correlation was carried out to find out the relationship between the study construct. The result indicates that there exists a significant positive and moderate correlation between ego orientation and task orientation ( $r = .33^{**}$ ). And the task orientation has a significant and moderate positive correlation with mental toughness ( $r = .34^{**}$ ). Ego orientation has a significant moderate positive correlation with flow state ( $r = .34^{**}$ ) however, task orientation has a strong positive correlation with flow state ( $r = .54^{**}$ ). Mental toughness shows a weak and statistically significant positive correlation with flow state ( $r =$

.24\*). Subscales of mental toughness such as Rebound ability, ability to handle pressure, and concentration do not show a statistically significant correlation with flow state. However, the confidence ( $r = .31^{**}$ ) dimension appears to have a moderate positive and statistically significant correlation with the flow state. The motivation dimension has a very weak positive correlation with the flow state ( $r = .19^*$ ).

Mann-Whitney U Test was conducted to examine the differences between individual and team sports based on ego-task orientation, mental toughness, and flow state (Table 4). No significant differences were found between individual sports and team sports in ego orientation ( $U = 1802.00, p = 0.11$ ). But when considering the mean rank values, individual

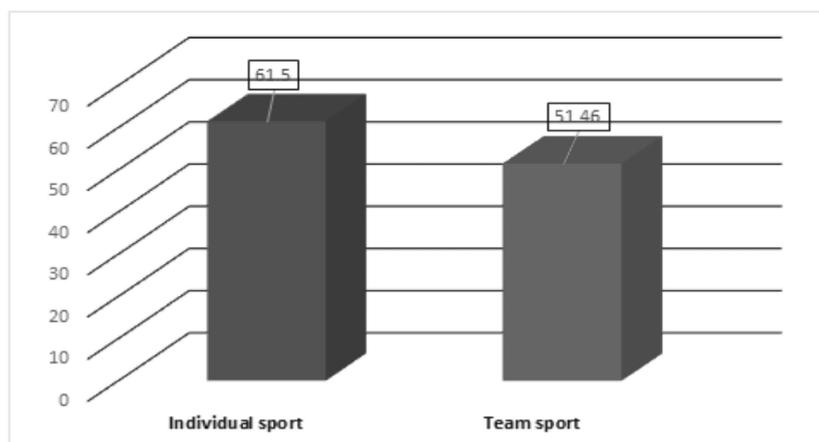
**Table 4: Comparison of Individual and Team sports based on Ego-Task Orientation, Mental Toughness, and Flow State**

Null Hypothesis	N	Test Statistic	Sig.
The distribution of Ego-orientation is the same across categories of sports	111	1802.00	.11
The distribution of Task-orientation is the same across categories of sports	111	1820.00	.09
The distribution of Mental Toughness is the same across categories of sports	111	1673.50	.41
The distribution of Flow State is the same across categories of sports	111	1910.00	.03

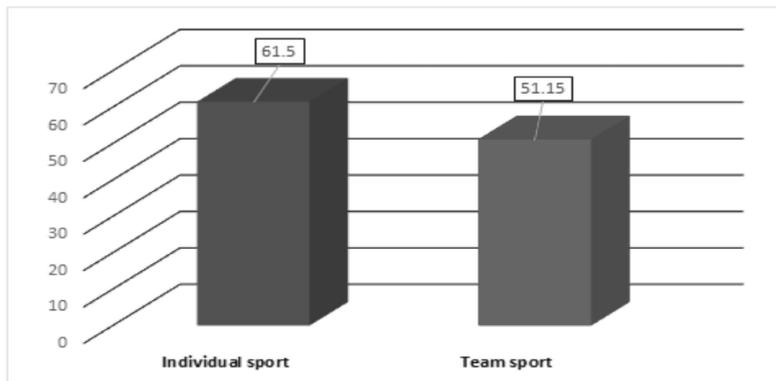
sports (mean rank = 61.15) have higher ego orientation than team sports (mean rank = 51.46), the difference is not statistically significant.

Figure 1 represents the difference between individual and team sports in ego orientation. In the case of task orientation also no significant differences were found between individual sports and team sports ( $U=1820.00$ ,  $p = 0.09$ ). Individual sports (mean rank = 61.50) showed higher scores than team sports (mean rank = 51.15) in task orientation when considering the mean rank score (Figure 2). Mental toughness also doesn't have any

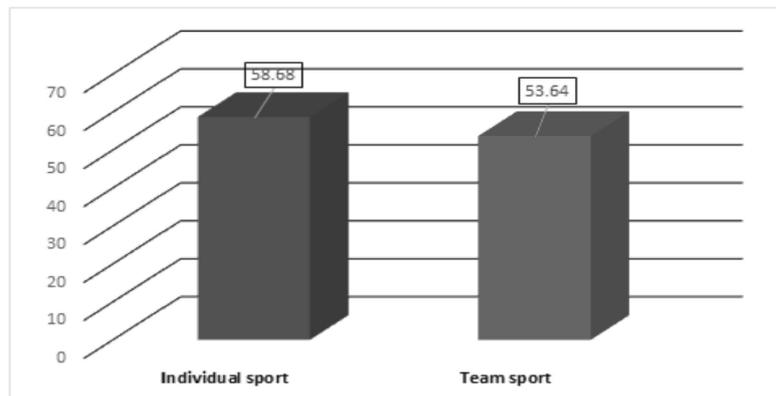
significant differences in categories of sports ( $U = 1673.50$ ,  $p = 0.41$ ). However, the mean rank score of mental toughness is high in individual sports (mean rank = 58.68) compared to team sports (mean rank = 53.64) (Figure 3). A statistically significant difference was found between individual sports and team sports in a flow state ( $U = 1910.00$ ,  $p = 0.03$ ). In the flow state, individual sports got a higher (mean rank = 63.23) mean rank score than team sports (mean rank = 49.63). The difference between individual and team sports in a flow state is presented in Figure 4.



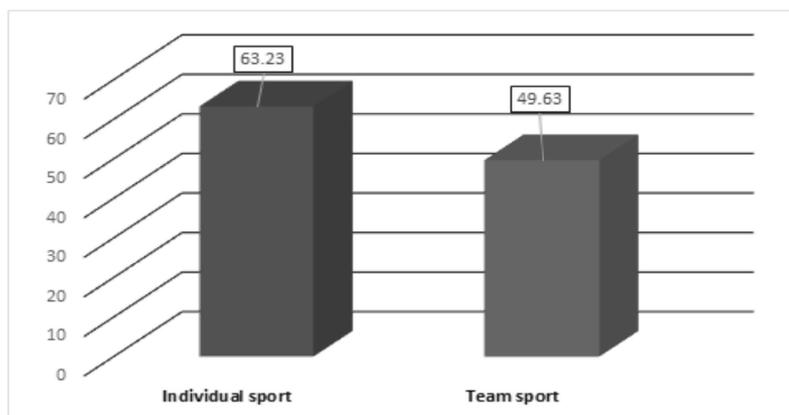
**Figure 1: Difference between Individual sports and Team sports in Ego-Orientaion**



*Figure 2: Difference between Individual sports and Team sports in Task-Orientation*



*Figure 3: Difference between Individual sports and Team sports in mental toughness*



*Figure 4: Difference between Individual sports and Team sports in flow state*

## DISCUSSION

The findings of this investigation distinctly demonstrate that task orientation exhibits a substantial and moderate positive correlation with mental toughness. Conversely, ego orientation presents a negative correlation with mental toughness; however, this association lacks statistical significance. This study aligns with prior research that suggests a connection between task orientation and mental toughness (Kuan & Roy, 2007). Furthermore, ego orientation reveals a significant moderate positive correlation with flow state, while task orientation shows a significant and robust positive correlation with flow state. In a comparative analysis of ego orientation and task orientation concerning flow state, task orientation exhibits a stronger relationship than its counterpart, ego orientation. Many studies substantiated the same result that task orientation is more connected with flow state than ego orientation (Murcia, 2008). Mental toughness shows a weak and significant positive correlation with the flow state. Similarly, there are many studies related to mental toughness and flow state showing the same result, that flow state and mental toughness are positively correlated (Meggs, 2019, Crust & Swann 2011). To experience flow, psychological factors like concentration, motivation, confidence, and attention are very important, and from these factors' motivation, concentration and confidence are the subscales of the mental toughness scale, so that is why there is a positive relationship between mental toughness and flow state. When considering the subscales of mental toughness, three sub-scales

(Rebound ability, confidence, and motivation) have a significant positive correlation with the flow state. The ability to handle pressure and concentration has a positive relationship with the flow state but the relation is not significant.

This study depicts the difference between individual and team sports athletes in ego and task orientation, mental toughness, and flow state. No significant difference was found between individual sports and team sports in ego orientation. However, the previous study results indicate that ego orientation is higher in team sports athletes than individual sports athletes (Benar & Loghmani, 2012). This result is contradictory to the previous study. In the case of task orientation also there is no significant difference between individual sports and team sports. In this case, the result is in line with previous studies, the study also shows the same result, there is no significant difference between individual sports and team sports in task orientation (Benar & Loghmani, 2012). The tendency to become task-oriented or ego-oriented is the same in individual sports and team sports athletes because individual athletes from the sample also appear in team sports for training purposes and entertainment. Similarly, mental toughness also didn't show any difference in types of sports. A statistically significant difference was found between types of sports in flow state. Individual sports athletes scored better score in flow than team sports athletes. In individual sports, the result only depends on the individual's performance. So, the tendency to achieve maximum performance is very high in individual sports. But in team sports the result does not only depend on an athlete's

performance, it depends on teammates' performance also. And in team sports, the tendency for social loafing is also there. The flow state is closely related to maximum performance. This is why a statistically significant difference was found between types of sports in the flow state.

## CONCLUSION

Overall, this research provides important insights into the relationship between task and ego orientation, flow state, and mental toughness among athletes, As well as the difference in types of sports within the variables. Ego orientation is positively correlated with task orientation. In addition, Task orientation is also significantly and positively related to mental toughness. Conversely, ego orientation shows no significant negative correlation with mental toughness. The

dimensions of mental toughness (Rebound ability, confidence, and motivation) show a significant positive relation with task orientation. Ego orientation and task orientation have a significant positive correlation with flow state, but when compared to ego orientation, task orientation has a better relation with flow state. There is a statistically significant positive relationship between mental toughness and flow state. Rebound ability, confidence, and motivation dimension of mental toughness also show a significant positive relationship with flow state. Individual sports and team sports don't show any significant difference in ego orientation, task orientation, and mental toughness. But in the flow state Individual sports athletes experience more flow than team sports athletes.

## REFERENCES

- Barić, R. (2011).** Psychological pressure and athletes' perception of motivational climate in team sports. *Review of Psychology*, 18(1), 45-49.
- Benar, N., & Loghmani, M. (2012).** The relationship between goal-orientations and sport commitment among athletes. *Pedagogics, Psychology, medical-biological problems of physical training and sports*, (5), 154-160.
- Boudreau, P., Mackenzie, S. H., & Hodge, K. (2020).** Flow states in adventure recreation: A systematic review and thematic synthesis. *Psychology of Sport and Exercise*, 46, 101611.
- Csiksentmihalyi, M. (1990).** *Flow: The psychology of optimal experience*. New York: Harper & Row.
- Crust, L., & Swann, C. (2011).** Comparing two measures of mental toughness. *Personality and Individual Differences*, 50(2), 217-221.
- Duda, J. L. (1989).** Task and Ego Orientation in Sport Questionnaire. *Contemporary Educational Psychology*.
- Gill, D. L., & Lavon, W. (2008).** *Psychological dynamics of sport and exercise*. Champaign, Ill: Human Kinetics.
- Goldberg A S. (1998).** *Sports Slump Busting: 10 Steps to Mental Toughness and Peak Performance*. Champaign, IL: Human Kinetics. 1998.
- González-García, H., Martinent, G., & Nicolas, M. (2022).** Relationships between

coach's leadership, group cohesion, affective states, sport satisfaction and goal attainment in competitive settings. *International Journal of Sports Science & Coaching*, 17(2), 244-253.

**Jackson, S. A., & Csikszentmihalyi, M. (1999).** Flow in sports. *Human Kinetics*.

**Jackson, S. A., & Eklund, R. C. (2002).** Assessing flow in physical activity: The flow state scale–2 and dispositional flow scale–2. *Journal of Sport and Exercise Psychology*, 24(2), 133-150.

**Jackson, S. A., & Marsh, H. W. (1996).** Development and validation of a scale to measure optimal experience: The Flow State Scale. *Journal of Sport and Exercise Psychology*, 18(1), 17-35.

**Jacobson, N., Berleman-Paul, Q., Mangalam, M., Kelty-Stephen, D. G., & Ralston, C. (2021).** Multifractality in postural sway supports quiet eye training in aiming tasks: A study of golf putting. *Human Movement Science*, 76, 102752.

**Jones, G., Hanton, S., & Connaughton, D. (2002).** What is this thing called mental toughness? An investigation of elite sport performers. *Journal of Applied Sport Psychology*, 14(3), 205-218.

**Kassim, R. R., Haris, N. H., & Kimik, M. A. (2014).** Motivation, task orientation and ego orientation influence flow experience among golfer. *Full Paper Proceeding ETAR*, 1, 441-450.

**Kuan, G., & Roy, J. (2007).** Goal profiles, mental toughness and its influence on performance outcomes among Wushu athletes. *Journal of sports science & medicine*, 6(CSSI-2), 28.

**Liew, G. C., Kuan, G., Chin, N. S., & Hashim, H. A. (2019).** Mental toughness in sport: Systematic review and future. *German Journal of Exercise and Sport Research*, 49(4), 381-394.

**Meggs, J., Chen, M. A., & Koehn, S. (2019).** Relationships between flow, mental toughness, and subjective performance perception in various triathletes. *Perceptual and motor skills*, 126(2), 241-252.

**Mladenovic, M. (2016).** Sportskamotivacija. Beograd: Zaduzbina Andrejevic

**Mladenovic, M., & Trunic, N. (2019).** Goal orientation and mental toughness of young Serbian basketball players. In XXII Scientific Conference “FIS COMMUNICATIONS.

**Murcia, J. A. M., Gimeno, E. C., & Coll, D. G. C. (2008).** Relationships among goal orientations, motivational climate and flow in adolescent athletes: Differences by gender. *The Spanish Journal of Psychology*, 11(1), 181-191.

**Saltzman, A. (2018).** A still quiet place for athletes: Mindfulness skills for achieving peak performance and finding flow in sports and life. New Harbinger Publications.

**Schmidt, R.A. & Lee, T.D. (2011).** Motor control and learning: A behavioral emphasis. 5th edition. Campaign, IL: Human Kinetics.

**Schuett, M. A., Selin, S., Wang, T., Branch, D., & Bone, P. F. (2001).** Flow in Golf: Motivation, Goal Orientation, and Challenge Determinant, 140.

**Singh, K., Junnarkar, M., & Kaur, J. (2016).** Measures of positive psychology.

Development and Validation. Berlin: Springer.

- Stavrou, N. A., Psychountaki, M., Georgiadis, E., Karteroliotis, K., & Zervas, Y. (2015).** Flow theory–goal orientation theory: positive experience is related to athlete's goal orientation. *Frontiers in Psychology*, 6, 1499.
- Vealey RS, Chase M A. (2008).** Self-confidence in sport. In: Horn TS, ed. *Advances in sport psychology*, 3rd edn. Champaign, IL: Human Kinetics, 66–97.