



PSYCHOLOGICAL PREDICTORS OF SPORTS INJURIES AMONG EGYPTIAN ELITE PLAYERS

AHMED ATITO¹, AHMED ABDELATY²

Aim. Injury is a common occurrence in many sports. Sportsmen are injured either by accident or intentionally by other players. There are many factors responsible for injuries in sports, of which psychological factors are one, and an important one. Many studies have shown the impact and influence of psychological characteristics of athletes in determining risk of injuries and rehabilitation. The objectives of this study were to determine the psychological profiles of elite players, to document injury profiles, and to identify psychological predictors of injury occurrence among elite players in Egypt.

Methods. A prospective research design was used in this study. Psychological profiles of the subjects were determined using validated questionnaires. 140 players were selected. The subjects were then instructed to answer the questionnaire. This procedure was repeated for all subjects throughout. In addition, an interview was conducted with players who were injured during or after the game. Data were entered and analyzed using Statistical Package for Social Science version 16.0. Significant differences in the mean score between injured and non-injured subjects were determined by logistic regression. Psychological predictors were derived by performing multivariate logistic regression. Univariate analysis.

Results. Differences in the mean score of psychological profiles between the injured and non-injured players were observed in self-esteem, mental toughness, reboundability, ability to handle pressure, level of confidence, and motivation.

Conclusions. Self-esteem, level of confidence, and mental toughness were found to be predictors of injury.

Key words: Self-Esteem, Self-Confidence, Mental Toughness, Sports Injury

Introduction

Sport psychology is an interdisciplinary science that draws on knowledge from many related fields including biomechanics, physiology, kinesiology and training. It involves the study of how psychological factors affect performance and how participation in sport and exercise affect psychological and physical factors. (Weinberg, Gould, 2010). In addition to instruction and training of psychological skills for performance improvement, applied sport psychology may include work with athletes, coaches, and parents regarding injury, rehabilitation, communication, team building, and career transitions.

Araby (1996) indicates that psychological skills development must go hand in hand with the development of elements of physical fitness through long-term programs must focus on them, as is the case in the basic skills of various sports activities.

Jimes, (1993) adds to that coaches and athletes confirm that the psychological skills that reflect the mental toughness contribute by at least 50% in the

achievement of sporting achievement.

Gould, et al. (2002) emphasizes that mental toughness is the most important in the achievement of sporting achievement.

Araby (2005) believes that may come to mind that mental toughness is synonymous with cruelty, inertia, ossification, rigor or allergies loss but far from all of that, it is the ability to consistency of performance in the direction of the maximum limits of talent and skill regardless of the conditions of competition.

In addition, mental toughness play an active role in the control in the case of the ideal performance and consists of acquired skills in positive thinking, a sense of humor, solve problems; think about the firm and visual perception.

Bill, (2001) indicates that mental toughness requires a lot of mental and emotional strength with fitness and high level of performance.

Araby (2005) believes that mental toughness is the continuity of positive and constructive thinking quietly with distance from the defense and not to

¹ Faculty of Physical Education, South Valley University, EGYPT

E-mail address: amr297@aswu.edu.eg

Received 07.10.2015 / Accepted 12.11.2015



surrender and realism in performance.

Vince (2003) show it is a multi-dimensional concept is difficult to explain it consists basically of sacrifice and self-denial and the most important of which is a compound of careful tuning refuses to surrender, a mental condition that can be called in personal situations.

Simon et al. (2004) seen it the maximum level myself natural or sophisticated can access it, a gain endurance athletes compared to their competitors during athletic competition or training or way of life, and through the development of trust and stability under the pressure of focus.

John et al. (2003) concluded that mental toughness is not the mentality of just a feature but also physical, emotional, mental toughness not possess the instinct to crush your competition or characterized by frosty, but they are concerned with access to the ideal maximum performance from your skills and your talent, regardless of the pressure of competition.

Stress can directly and indirectly contribute to general or specific disorders of body and mind. Stress can have a major impact on the physical functioning of the human body. Such stress raises the level of adrenaline and corticosterone in the body, which in turn increases the heart rate, respiration, blood pressure and puts more stress that is physical on bodily organs. Long-term stress can be a contributing factor in heart disease, high blood pressure, stroke and other illnesses.

Crocker & Isaak, (1997) in this regard to the importance of interaction between the positions of the stress and sports, especially since the sport is going through the experiences of tension only when awareness of the inability to meet the necessary requirements in the positions of specific stress.

Hassan (1997) see that psychological stress is a tension that is painful or distasteful (Aversive State)) player tries to avoid them, and affect performance negatively by muscle tension in excess of the limit, which often leads to narrow the focus of attention and have a negative impact on the focus of attention .

Taylor, (1999) athlete trying to cope with competitive stress and dealt with using a variety of methods and skills, which is known as the confrontation or the ability to cope and adapt to all of the names of the term coping, and from here emerged the importance of the face and pressure management in the field of sports.

And, the confrontation is a series of interactions between the individual with his sources, and values, and the obligations and the environment assigned, including the sources and the requirements

and limitations, and therefore the confrontation is not actually take the time and then one ends up, but rather a set of responses that occur over time, which affects the individual in the surrounding environment and is affected by.

To overcome the psychological stress facing athlete during competition or training, requires work to give the player the mental toughness in the special training programs, gymnast who has the mental toughness is capable of facing psychological pressure no matter what the severity.

The one common sports injuries and events that can be observed in many sporting activities, which can occur intentionally or accidentally, and there are many factors that lead to the occurrence of sports injuries, psychological features and is one of these factors. (44)

Osama (2001) and Medhat (2000) that the involvement of the player is ready psychologically helps the possibility of injury in the stadiums, the psychological situation of the athlete is one of the factors that may significantly contribute to the incidence of sports injuries.

And refers Astrid, (2000) to a relationship between psychological factors and the incidence of sports injuries private stress, stress working to increase anxiety and thus reducing the focus of attention and increased muscle tension, hence the importance of acquiring skills to athletes face of pressure.

In addition, divides Imad Eddin (2007) degrees to sports injuries:

First -degree injuries: It is simple in terms of serious injury does not hinder the player from the game supplement includes 80-90% of injuries such as bruises and contractions.

Second-degree injuries: is a medium where the risk of injury to hinder the performance of the player for a period of one to two weeks and include 8% of injuries such as rupture of muscle and ligaments and joints.

Third-degree injuries: It is a very serious injury to hinder the player from continuing performance for a period not less than one month and include a 1 -2% of injuries such as fractures and dislocations and slipped disc and knee cartilage.

Smith et al. (1990) noted that scientific studies in the field of sports injuries indicate that the lack of psychological preparation of athletes lead to sports injuries. Especially when athletes face a big psychological pressure in the matches of results volatility and the strength of the opponent and the impact of a hostile audience on the players. and the fear from the results of the matches as well as the



inability of athletes to isolate the external pressure leads him to the dispersion of ideas and thus a lack of focus and sports injury occur here.

Proceeding from the above illustrated the importance of psychological skills that reflect the mental toughness as well as cope of stress in the field of sports in general and in reducing the incidence of sports injuries in particular. Jolly (2003) indicated that mental toughness is the ability to ideal performance stability when it is most competitive stress confirms this. In addition, this requires good technique and mental skills.

That the lack of stability performance during the competition was due primarily to the psychological variables, which comes in the forefront of the determinants of mental toughness, gymnast who has mental toughness can be performed steadily, taking into account that mental toughness trait acquired and not hereditary.

In theregard, James (1993) indicates coaches and athletes confirm that the psychological skills that reflect the mental toughness contribute by at least 50% in the achievement of sporting achievement.

It is through access to the information network (Internet) and through access to what was made available from scientific studies and references in this area. It observed that the lack of studies on the link between psychological factors the proportions of its contribution to the incidence of sports injuries,

Astrid, (2000) the psychologists still try to prove that personality traits are directly related to the occurrence of sports injuries. In addition, that the area still need to make more of this research is trying to identify the most common psychological factors and Special Olympians those with injury. adds Ahern & Lohr, (1997) The psychology of sports injuries still needs to further develop its base theory, and applied research and practice to get to know the requirements and characteristics of athletes

The objectives of this study were to determine the psychological profiles of elite players, to document injury profiles, and to identify psychological predictors of injury occurrence among elite players in Egypt.

Methods

A prospective research design was used in this study. Psychological profiles of the subjects were determined using validated questionnaires. 140 players were selected. The subjects were then instructed to answer the questionnaire. This procedure was repeated for all subjects throughout. In addition, an interview was conducted with players who were injured during or after the game.

Research Procedures:

The researcher was translated and prepared (validity & reliability) to the Psychological Performance Inventory (PPI), Elite Swimmer Self-Description Questionnaire

Instrumentation

In 1986, Loehr developed the Psychological Performance Inventory Questionnaire with its seven distinct psychological sub concepts

Psychological Performance Inventory (PPI)

The PPI is a 42-item self-report instrument designed to measure factors that reflect mental toughness. All questions in the PPI were answered using a 6-point Likert type scale, ranging from '1' (False) to '6' (True). Six items subsume each of the following seven factors:

- Self-confidence (e.g., "I believe in myself as a player"): Positive cognitions, feelings and images about what one can do and achieve.

- Negative energy (e.g., "I get angry and frustrated during competition"): The ability to control negative emotions such as fear, anger, frustration and resentment.

- Attention control (e.g., "I can clear interfering emotions quickly and regain focus"): The ability to sustain a continuous focus on the task at hand. The ability to 'tune in' to what's important, and 'tune out' to what is not.

- Visual and imagery control (e.g., "Before competition, I picture myself performing perfectly"): The ability to think in positive and supportive images and the ability to control the flow of mental images in a positive and constructive direction.

- Motivation level (e.g., "I am highly motivated to play my best"): The willingness to persevere with training schedules and to endure the pain, discomfort and self-sacrifice associated with forward progress.

- Positive energy (e.g., "I can keep strong positive emotion flowing during competition"): The ability to become energized through fun, joy, determination, positivity, and team spirit.

- Attitude control (e.g., "I am a positive thinker during competition"): Control over one's habits of thought reflecting the extent to which one's personal attitudes are consistent with those of successful high-level performances.

Athletic Coping Skills Inventory-28

This is the version of ACSI-28 (23) adjusted to the ARABIC language (6). It consists of 28 items that measure seven factors:

1. Coping with Adversity: "I remain positive and enthusiastic during competition, no matter how badly things are going."



2. Peaking under Pressure: "I tend to perform better under pressure because I think more clearly."

3. Goal Setting/ Mental Preparation: "On a daily or weekly basis, I set very specific goals for myself that guide what I do."

4. Concentration: "When I am doing gymnastics, I can focus my attention and block out distractions."

5. Freedom from Worry: "I worry quite a bit about what others think about my performance."

6. Confidence/ Achievement Motivation: "I get the most out of my talent and skills."

7. Coachability: "When a coach criticizes me, I become upset rather than helped."

The answers were given on a Four-point Likert scale (0= never to 3 = always).

Statistical analysis.

Data were entered and analyzed using Statistical Package for Social Science version 16.0. Significant differences in the mean score between injured degrees were determined by Analysis Of Variance between groups Anova. Psychological predictors were derived by performing multivariate logistic regression. Univariate analysis, significant

Results.

Table 1. Psychological Performance Inventory (PPI) and ACIS-28 Scores for three groups

Issue	Source	Sum of Squares.	Degree of freedom	F test
Self-confidence	Between groups	194.55	2	Sign
	Within groups	93.33	137	
Negative energy	Between groups	305.15	2	Sign
	Within groups	115.12	137	
Attention control	Between groups	313.20	2	Sign
	Within groups	103.66	137	
Visual and imagery control	Between groups	53.35	2	Sign
	Within groups	28.70	137	
Motivation level	Between groups	164.10	2	Sign
	Within groups	94.88	137	
Positive energy	Between groups	37.00	2	Sign
	Within groups	320.00	137	
Attitude control	Between groups	50.77	2	Sign
	Within groups	166.88	137	
Coping with Adversity	Between groups	89.15	2	Sign
	Within groups	65.44	137	
Peaking under Pressure	Between groups	190.41	2	Sign
	Within groups	48.21	137	
Goal Setting/ Mental Preparation	Between groups	261.67	2	Sign
	Within groups	51.05	137	
Concentration	Between groups	1.04	2	No
	Within groups	27.56	137	Sign
Freedom from Worry	Between groups	0.196	2	Sign
	Within groups	24.67	137	
Confidence/ Achievement Motivation	Between groups	35.30	2	No
	Within groups	62.70	137	Sign
Coachability	Between groups	25.87	2	Sign
	Within groups	47.98	137	

Table 1 show that.

Self-confidence variable

Founded significant differences between the players living with first-degree and second-degree players living in self-confidence variable for the benefit of men with first-degree players.

Founded significant differences between the players living with first-degree and third degree players living in self-confidence variable for the benefit of men with first-degree players.

Founded significant differences between the players infected with the second-degree and third



degree players living in self-confidence variable for the benefit of the players living with second place.

Negative energy variable

Founded No significant differences between the players primarily infected and living with second-degree players in the negative energy variable.

Founded significant differences between the players living with first-degree and third degree players living in the negative energy variable for the benefit of men with first-degree players.

Founded significant differences between the players infected with the second-degree and third degree players living in the negative energy variable in favor of the players living with second place.

Attention control Variable

Founded significant differences between the players living with first-degree and second-degree players living in the variable control of attention in favor of the players living in first degree.

Founded significant differences between the players living with first-degree and third degree players living in the variable control of attention in favor of the players living in first degree.

Founded significant differences between the players infected with the second-degree and third degree players living in the variable control of attention in favor of the players living with second place.

Visual and imagery control Variable

Founded No significant differences between men with the players and the players primarily infected with second place in a changing visual perception control.

Founded significant differences between the players living with first-degree and third degree players living in a changing visual perception of control in favor of the players living in first degree.

Founded significant differences between the players infected with the second-degree and third degree players living in a changing visual perception of control in favor of the players living with second place.

The level of motivation variable

Founded significant differences between the players living with first-degree and second-degree players living in the level of motivation variable for the benefit of the players living with second place.

Founded significant differences between the players living with first-degree and third degree players living in the level of motivation variable for the benefit of men with third-degree players.

Founded significant differences between the players infected with the second-degree and third

degree players living in the level of motivation variable for the benefit of men with third-degree players.

Positive energy variable

Founded significant differences between the players living with first-degree and second-degree players in men with positive energy variable for the benefit of men with first-degree players.

Founded No significant differences between the players primarily infected and living with third-degree players in the positive energy variable.

Founded No significant differences between the players infected with the second-degree and third degree players in men with positive energy variable.

Attitude control Variable

Founded No significant differences between men with the players and the players primarily infected with second place in a changing direction control.

Founded significant differences between the players living with first-degree and third degree players living in a changing direction control for the benefit of men with first-degree players.

Founded significant differences between the players infected with the second-degree and third degree players living in a changing direction control for the benefit of the players living with second place.

Goal Setting/ Mental Preparation variable

Founded significant differences between the players living with first-degree and second-degree players living in maximum performance under variable pressure in favor of the players living in first degree.

Founded significant differences between the players living with first-degree and third degree players living in maximum performance under variable pressure in favor of the players living in first degree.

Founded significant differences between the players infected with the second-degree and third degree players living in maximum performance under variable pressure in favor of the players living with second place.

Concentration variable

Founded significant differences between the players living with first-degree and second-degree players living freely in variable performance without concern for the benefit of men with first-degree players.

Founded significant differences between the players living with first-degree and third degree players living freely in variable performance without concern for the benefit of men with first-degree players.



Founded significant differences between the players infected with the second-degree and third degree players living freely in variable performance without concern for the benefit of the players living with second place.

Freedom from Worry Variable

Founded significant differences between the players living with first-degree and second-degree players living in changing face difficult pressures in favor of the players living in first degree.

Founded significant differences between the players living with first-degree and third degree players living in changing face difficult pressures in favor of the players living in first degree.

Founded significant differences between the players infected with the second-degree and third degree players living in changing face difficult pressures in favor of the players living with second place.

Confidence/ Achievement Motivation variable

Founded No significant differences between men with the players and the players primarily infected with second place in the self-confidence and achievement motivation variable.

Founded significant differences between the players living with first-degree and third degree players living in self-esteem and achievement motivation confidence variable for the benefit of men with first-degree players.

Founded significant differences between the players infected with the second-degree and third-degree players living in self-esteem and achievement motivation- confidence variable for the benefit of the players living with second place.

Coachability variable

Founded significant differences between the players living with first-degree and second-degree players living in the training variable in favor of the players living with second place.

Founded No significant differences between the players infected with the second-degree and third degree players living in the training variable.

Founded significant differences between the players living with first-degree and third-degree players living in the training variable for the benefit of men with third-degree players

Table 2. Correlation between Psychological Performance Inventory (PPI), ACIS-28 Scores and degrees of injuries

Coachability	Confidence/Achievement Motivation	Freedom from Worry	Concentration	Goal Setting/Mental Preparation	Peaking under Pressure	Coping with Adversity	Attitude control	Positive energy	Motivation level	Visual and imagery control	Attention control	Negative energy	Self-confidence	issue
														Self-confidence
													0.085	Self-confidence
												0.07	*.433	Negative energy
											0.03-	0.079-	0.266	Attention control
									0.195	**0.369	0.25-	0.16-		Visual and imagery control
									0.14	0.06-	--15	0.18	0.22-	Motivation level
								**0.667-	0.046	0.223	**0.876	0.018	0.088-	Positive energy
							0.003-	**0.778-	*0.675-	0.174-	0.056-	0.057	0.249	Attitude control
					**0.598	0.13	*0.459-	0.15-	0.09-	0.027-	0.007-	0.238		Coping with Adversity
					**0.765	**0.339	0.023	*0.276-	0.027-	0.056-	0.149	*0.443	0.187	Peaking under Pressure
				0.037-	0.099	0.17	0.049	0.165-	0.06	0.04	0.02-	0.10	0.164	Goal Setting/Mental Preparation
			**0.790	0.003	0.065	**0.443	0.037-	0.21-	*0.432-	0.117-	0.023	0.023	0.25	Concentration
														Freedom from Worry
		0.183	**0.543	0.028-	0.09	0.056	0.01-	0.14-	0.12	0.235	0.059	0.12	0.089	Confidence/Achievement Motivation
	0.096	0.198	0.079	0.021	0.118-	0.08	0.025-	0.174	0.078-	0.216	**0.899	0.055	.08	Coachability

Discussion

Determinants of mental toughness to play the biggest role in reducing the incidence of sports injuries, which owns gymnast determinants of mental toughness able to avoid sports injuries in training or competition.

Mohad (2001) indicated that the behavior might lead to infection, which then lead to the failure of the player.

Suad (1978) confirms that there are certain personal attributes if available to the people that made them more vulnerable to infection than others,



as the psychological factors of the athlete have a big importance to avoid sports injuries during practice

While confirming Mohad (2001) that some private psychological traits that reflect the mental hardness such as poor self-esteem, frustration and anxiety significantly contribute to the incidence of sports injuries among female athletes.

Players who has the self-confidence has clear objectives seek to achieve high motivation, and able to deal with the negative energy. They cannot get rid of them for good and capable of transformation into positive energy during competitions, mental energy is the player changed and changed during competitions. Whether the players individually or with team sports as a group, and that this is due to many reasons lead to that a possible efficiency of the player or the player rival performance. or because they feel tired, whether physical or mental, or to the different approach between the players and the coach and the audience reactions from encourage or vilified, or for fear of the occurrence or recurrence of the injury, so it must be a trainer familiar with them and aware as well as for the player.

In this regard, Anne, (2004) that individual differences significant impact in the different reactions to each player, so you must coach recognizes the similar positions that make the athlete moves from the case of psychic energy mobilization to negative energy to occur, or positive energy.

In Addition, the incidence of sports injuries largely depends on the balance between the occurrence of negative energy and positive energy.

Moreover, it sustains that what the Arab (1996) that is associated with the occurrence of sports achievements in the presence of the player psychic energy optimal area was found to be the most important thing distinguishes it is that attention may be directed to the Faculty of skill performance.

In addition, sustains Hassan (1997) so that it can be seen as a concern among the psychological factors associated with each of the psychological and physical injuries. Sports gymnast who is high anxiety, which affects the state of anxiety, has before athletic competition, and the associated raising physiological, which could be working to narrow the focus of the attention of the player to the point, cannot be with them to recognize the risk that can cause sports injury signal.

And it refers Grove, (1993) in this regard that the attention skill can be learned and development through training and make continuous effort, where it is often determined the fate of the match through small mistakes that often can be traced to the loss of focus of attention.

The researcher believes that the motivation works to stimulate and motivate the player to perform strongly, which may result in a lack of awareness, focus and rush toward the opponent and thus the occurrence of injuries.

If motivation can lead to the risk of this is referred to by Mustafa (2000) of the motivation is made against a group of athletes to choose sports and the potential risk of infection. There is no doubt that those athletes may be motivated to make every effort, as well as to challenge those risks and not to surrender or withdraw from those stressful situations that lead to injury.

The results of the study are consistent with Nawal study (2007) in the presence of some psychological traits that cause shortages incidence of sports injuries

And the study of Mohad (2001) in that the determinants of mental toughness from which to predict the incidence of sports injuries

Conclusion

Self-esteem, level of confidence, and mental toughness were found to be predictors of injury

Acknowledgements

For all of our participants from my study I want to say thank you.

References

- Ahern DK, Lohr BA, 1997, Psychosocial factors in sports injury rehabilitation , Clinics in sports medicine; 16(4):755-68
- Astrid J, 2002, 'The influence of psychological factors on sports injuries: review of the literature'. American Journal of Sports Medicine, 28 (5 supp), S10-S15.
- Bahrawi M, ELkady A, 2008, mental toughness and coping skills for swimmers, ADHD congress, pp 125 , turkey
- Bill B, 2001, focused for soccer , Champaign, Ill.: Human Kinetics, USA.
- Chuang C, 2000, An exploratory study on psychological-competitive ability of athletes, master degree of P.E, National Yunlin University of Science and Technology, Yunlin Taiwan, R.O.C.
- Courtney AK, 2006, Psychological Response to Injury, Recovery, and Social Support: A Survey of Athletes at an NCAA Division I University , Honors Program at the University of Rhode Island , Senior Honors Projects , University of Rhode Island



- Crocker PRE, Isaak K, 1997, Coping during competitions and training sessions; Are youth swimmers consistent?, *International Journal of Sport Psychology*, 28, 355-369.
- Fourie S, Potgieter JR, 2001, The nature of mental toughness in sport, *South African Journal for Research in Sport, Physical Education and Recreation*, Vol. 23, No. 2, PP63-72
- Garry K, Jolly R, 2007, goal profiles, mental toughness and its influence on performance outcomes among wushu athletes, October - Volume 6, *Combat Sports Special Issue 2*, PP28 - 33
- Gordon AM, Lindgren S, 1990, Psycho-physical rehabilitation from a serious sport injury: Case study of an elite fast bowler, *Australian Journal of Science and Medicine in Sport*. 22: 71 - 76.
- Goudas M, Theodorakis Y, Karamousalidis G, 1995, Psychological skills in basketball: Preliminary study for development of a Greek form of the Athletic Coping Skills Inventory-28, *Perceptual and Motor Skills*, 86, 59-65.
- Gould D, Dieffenbach K, Moffett A, 2002, Psychological characteristics and their development in Olympic champions, *Journal of Applied Sport Psychology*, 14, PP172-204
- Grove JR, 1993, Personality and injury rehabilitation among sport performers. In Pargman, D. (ed), *Psychological Bases of Sport Injuries*. pp. 99 - 120. Fitness Information Technology, Morgantown, WV.
- Haglund D, 2004, Coping with success and failure – A qualitative study on athletes and coaches in track and field, (Essay in sport psychology) School of Social and Health Sciences. Halmstad University. Pp 41-60.
- Hardy L, 1992, Psychological stress, performance, and injury in sport. Abstract retrieved on February 20, 2006 from PubMed database.
- James L, 1993, *The New Toughness Training for Sports*, New York: Penguin Books, USA.
- John L, McDuff DR, Riisman C, 2003, *Mental toughness training manual for soccer*, United Kingdom: Article Sports Dynamics
- Johnston LH, Carroll D, 2000, The psychological impact of injury: effects of prior sport and exercise involvement. *British Journal of Sports Medicine*, 34, 436- 439.
- Jolly R, 2003, *Mental Toughness*, Level III Hockey Coaching Course, Karnataka State Hockey Association, Bangalore
- Kathrin S, 2008, association between psychological factors and injuries in young female football players ,project, Oslo Sports Trauma Research Center
- Michael BJ, Gershon T, William A, Edmonds YC, 2006, A comparison of the developmental experiences of elite and sub-elite swimmers: similar developmental histories can lead to differences in performance level, *Sport, Education and Society*, Volume 13, Issue 4 November 2008, pages 453 – 475
- Mohad AMN, 2001, the psychological aspects of injury in sport, *Journal Teknologi*, 34(E) Jun: 39-50
- Passos P, Cristóvão AR, Palmeira AL, 2008, How Personal Factors Influence Burnout in Team Vs. Individual Sports: An Exploratory Study,
- Paul G, Penna S, Burden A, Garry ER, 2004, Are Elite Athletes With Disabilities Mentally Tougher Than Able-Bodied Competitors?, *Third International Biennial*, self Research Conference, Self-Concept, Motivation and Identity : Where to from here ? July 4-7, Berlin, Germany
- Simon C, Middleton, HW, Marsh AJ, Garry ER, Clark P, 2004, Discovering Mental Toughness: A Qualitative Study of Mental Toughness in Elite Athletes, *Third International Biennial*, self Research Conference, Self-Concept, Motivation and Identity : Where to from here ? July 4-7, Berlin, Germany
- Smith RE, Smoll FL, Ptacek JT, 1990, Conjunctive moderator variables in vulnerability and resilience research: Life stress, social support and coping skills and adolescent sport injuries'. *Journal of Personality and Social Psychology*, 58(2), 360-369.
- Taylor AH, Daniel JV, Leith L, Burke RJ, 1990, Perceived stress, psychological burnout and paths to turnover intentions among sport officials, *Journal of Applied sport psychology*, 2, 84
- Vince L, 2003, *What It Takes to Be : Vince Lombardi on Leadership*, McGraw Hill, USA.
- Williams JM, Andersen MB, 1998, Psychological antecedents of sport injury: review and critique of the stress and injury model. *Journal of Applied Sport Psychology*, 10 (1), 5-25.
- Weinberg RS, Gould D, 2010, *Foundations of Sport and Exercise Psychology*. Champaign, IL: Human Kinetics.