



ISSN: 0976-3031

Available Online at <http://www.recentscientific.com>

International Journal of Recent Scientific Research  
Vol. 8, Issue, 1, pp. 15023-15027, January, 2017

**International Journal of  
Recent Scientific  
Research**

## Research Article

### A SPORTSPERSON'S PSYCHE: MENTAL TOUGHNESS IN RELATION TO OPTIMISM AND COPING

Shatarupa Chakraborty\*<sup>1</sup> and Anuradha Solanky<sup>2</sup>

<sup>1</sup>Junior Scientific Officer, Sports Psychology Sports Authority of India, Ministry of Youth Affairs  
Jawahar Lal Nehru Stadium New Delhi, 110003

<sup>2</sup>Research Fellow Sports Authority of India, Ministry of Youth Affairs Jawahar Lal Nehru  
Stadium New Delhi, 110003 India

#### ARTICLE INFO

##### Article History:

Received 05<sup>th</sup> October, 2016  
Received in revised form 08<sup>th</sup>  
November, 2016  
Accepted 10<sup>th</sup> December, 2016  
Published online 28<sup>st</sup> January, 2017

##### Key Words:

Mental Toughness, Optimism, Coping,  
Sports, Correlation, Sports Authority of  
India

#### ABSTRACT

**Objective:** To observe the correlation between the components of mental toughness and optimism and mental toughness and coping skills amongst sportspersons

**Method:** The questionnaires of Life Orientation Inventory-Revised by C.S. Carver, COPE Inventory by C.S. Carver, M.F. Scheier and J.K. Weintraub and Mental Toughness Scale 30 by Alan Goldberg were administered. Correlation and regression analysis was done to find out to what degree the components are correlated to each other and to establish causal factors between the components.

**Results:** Moderate degree of correlation between mental toughness and optimism ( $r=0.567$  at 0.01 level of significance) and between mental toughness and coping skills ( $r= 0.526$  at 0.01 level of significance) was found. On conduction of linear regression, for the components of mental toughness and optimism,  $r$  squared value was 0.32 and for mental toughness and coping skills,  $r$  squared value was 0.33, indicating that we can, but with restrained conviction predict that an individual who would be high on the attribute of optimism and having heightened coping skills will be high on the attribute of mental toughness

**Conclusion:** We may say that the interplay of the components of optimism, coping skills and mental toughness do have a contributing impact upon the success or failure of a sportsperson. Optimistic individuals are less prone to giving up in face of difficulties and show heightened resilience, while individuals high on coping skills tend to use problem focused methods to overcome challenges and display strong mental toughness characteristics.

Copyright © Shatarupa Chakraborty and Anuradha Solanky., 2017, this is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

#### INTRODUCTION

Our daily life is characterized by a feeling of competitiveness and the desire to win or simply out-perform oneself or competition is a drive which comes naturally to all of us. Such an inclination is observed in a heightened sense in sporting situations. In high intensity sporting situations, focused training and exercises are undertaken by sportspersons to keep themselves fit and in good for upcoming competitions. Thus, in a situation where the levels of physical fitness are more or less similar, the edge which provides a win or a loss is usually psychological in nature. Psychological attributes such as self-confidence and the ability to cope with and interpret anxiety-related symptoms as positive are now commonly accepted as being major contributors to sporting success (cf. Hardy, Jones,

& Gould, 1996; Mellalieu, Hanton, & Fletcher, 2006). The subtle psychological skills which can make a big difference in the whole sporting experience can be related to the degree of coping skills an individual possesses, how mentally tough the sportsperson is, etc. In our research, we have tried to assess the dynamic interplay of mental toughness, optimism and coping skills within a sportsperson and understand how the triad either facilitates or impedes him in the path to victory.

The outlook of a sportsperson is an important determinant of his successful sporting career. All kind of sports are characterized by grueling training sessions, arduous physical and mental demands and a host of other factors of equally severe urgency. A sportsperson is often faced with countless challenges on and off the field and the one who keeps a tough

\*Corresponding author: *Shatarupa Chakraborty*

Junior Scientific Officer, Sports Psychology Sports Authority of India, Ministry of Youth Affairs Jawahar Lal Nehru Stadium New Delhi, 110003

outlook pushes through and emerges victorious. Gibson(1998) advocated that going through difficult experiences strengthen one's will to bear the various problems of life and that one can achieve success through sheer hard work. Such a hardy outlook may be enigmatically referred to as the quality of mental toughness.

Mental toughness has been described as one of the most utilized yet least understood terms in applied sports psychology (Jones, 2002). It can, however be considered to be the chief feature which determines excellence in sport performance as 83% of coaches rated it as the most important psychological characteristic for determining competitive success (Gould, Hodge, Peterson, & Petlichkoff, 1987). Even amongst athletes, the quality of mental toughness is of paramount importance as most elite athletes state that at least 50% of superior athletic performance could be attributed to mental or psychological factors that reflect the phenomenon of mental toughness (Loehr, 1986). Mental toughness has been described as both a personality trait (Werner, 1960; Werner & Gottheil, 1966; Kroll, 1967) and as a state of mind (Gibson, 1998). Various definitions of mental toughness has been proposed, according to Clough, Earle and Sewell (2002, p. 38), "Mentally tough individuals tend to be sociable and outgoing; as they are able to remain calm and relaxed, they are competitive in many situations and have lower anxiety levels than others. With a high sense of self-belief and an unshakeable faith that they control their own destiny, these individuals can remain relatively unaffected by competition of adversity."

Thelwell, Weston and Greenlees (2005) stated that "Mental toughness is having the natural or developed edge that enables you to: (i) *always*, cope better than your opponents with the many demands (competition, training, lifestyle) that sport places on a performer; (ii) specifically, be more consistent and better than your opponents in remaining determined, focused, confident, and in control under pressure."

Jones *et al.* (2007, p. 247) defined mental toughness as: 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 and, specifically, be more consistent and better than your opponents in remaining determined, focused, confident, and in control under pressure.

According to Coulter, Mallett and Gucciardi (2010, p. 715) "Mental toughness is *the presence of some or the entire* collection of experientially developed and inherent values, attitudes, emotions, cognitions, *and behaviours* that influence the way in which an individual approaches, responds to, and appraises both negatively and positively construed pressures, challenges, and adversities to consistently achieve his or her goals."

Clough and Strycharczyk (2012, p.1) proposed that mental toughness is "The quality which determines in large part how people deal effectively with challenge, stressors and pressure...irrespective of prevailing circumstances."

In a study by Gould, Dieffenbach, and Moffett (2002), it was reported that Olympic Champions describe having elevated levels of mental toughness, optimism and advanced and highly

effective levels of coping. In this case, optimism has been defined as "a major determinant of the disjunction between two classes of behavior: (a) continued striving versus (b) giving up and turning away" (Scheier & Carver, 1985, p. 227). There has been an increased interest in studying optimism since optimistic individuals explain that they expend more effort in achieving their goals while less optimistic individuals tend to withdraw or disengage from their attempts to achieve the goal (e.g., Carver, Blaney, & Scheier, 1979; Gaudreau & Blodin, 2004; Solberg Nes, Segerstrom, & Sephton, 2005). People who possess an optimistic outlook on life have display an elevated level of motivation, persistence and performance (Carver, Blaney & Scheier, 1979; Taylor and Brown, 1988). In a study by Rettew and Reivich(1995), it was observed that those basketball players who gave more optimistic style explanations for a team loss had higher chances of winning the next game as compared to the basketball team where the team members gave a more pessimistic style of explanation for a team loss. A study conducted by Norlander and Archer (2002) revealed that optimism was the best predictor of performance in elite male and female cross country skiers and ski marksmen(16-20 years) and swimmers (16-19 years). Also, it has been noted that optimistic individuals use more of approach coping strategies and less avoidance strategies (Solberg Nes & Segerstrom, 2006). Seligman *et al.*,(1990) observed the impact of optimism and pessimism on swimming performance. False feedback regarding a swim trial was provided to university swimmers and they were required to complete another swim trial. It was found out that those swimmers who possessed an optimistic explanatory style were more resilient and hardy and had better performance time after being given a negative feedback.

Studies which examines student reports of situational coping responses and general coping styles (e.g., Scheier, Carver, & Bridges, 2001) explain that optimistic individuals tend to be approach copers while pessimistic individuals appear to be avoidant copers. Similar results have been observed subsequently. In their meta-analysis of optimism and coping, Solberg Nes and Segerstrom (2006) observed that optimism was positively related to the measures of engagement coping and with problem focused coping. It was also positively and almost equivalently linked with the two subsets of engagement coping responses: the ones which are problem-focused (e.g., planning, seeking instrumental support) and those that are emotion focused (e.g., cognitive restructuring, acceptance). Optimism predicted more usage of problem focused coping strategies with controllable stressors (e.g., academic demands) and more usage of emotion focused coping strategies with uncontrollable stressors (e.g., trauma). Thus, optimism predicted active attempts to change and accommodate to stressful circumstances, in ways which reflected flexible engagement (Carver, Scheier, & Segerstrom, 2010).

Coping is defined as "the cognitive and behavioral efforts made to master, tolerate, or reduce external and internal demands and conflicts among them" (Folkman & Lazarus, 1980, p 223). According to Khoshaba and Maddi (1999), hardy people are more likely to demonstrate problem focused or approach based coping behavior when faced with a stressful situation. The study done by Kaiseler, Polman and Nicholls (2009) demonstrated that higher levels of mental toughness are

associated with more usage of problem focused coping and less of emotion focused and avoidance coping. However, according to Nicholls and Polman (2007), “the relationship between coping and mental toughness appears to be an obvious one, but has not been investigated to date” (p.18).

To assess the dynamic relationship between the concepts of mental toughness, optimism and coping skills used by a sportspersons, we have decided to conduct our study.

## MATERIALS AND METHOD

### Participants

100 male sportspersons from the games of Boxing, Weightlifting and Hockey were randomly selected from a larger group of sportspersons for this study. From Boxing, 26 sportspersons, from Hockey, 49 sportspersons and from Weightlifting, 25 sportspersons constituted our sample. The participants were between the ages of 15 to 23 and had a minimum of 18 months of experience. Demographic profile for each participant was taken and the three questionnaires of mental toughness, optimism and coping skills was administered to them. The participants were not offered money or any incentive for participating in the study. Informed consent was obtained from each of the participant.

### MATERIALS

An Informed Consent form was filled by them after which a demographic profile form was completed. The revised version of Life Orientation Test (LOT-R) developed by C.S. Carver to measure optimism, COPE Inventory developed by C.S. Carver, M.F. Scheier and J.K. Weintraub to measure coping skills and Mental Toughness Scale 30 developed by Alan Goldberg to assess mental toughness were administered to them. The participants were asked to put a tick mark on the options which they selected. Satisfactory internal reliability, content and construct validity has been established for the three measures.

### Procedure

The participant was given an informed consent form. He was explained the terms mentioned in the consent form and inquired whether or not he agreed with them. Only when he agreed, the administration of questionnaires was taken further. Proper rapport was formed at the very outset. Basic demographic profile was taken of every participant. The three questionnaires were administered one by one individually to every participant. After the responses were recorded, the participant was thanked for his cooperation.

### RESULTS

In our research, we had attempted to find a correlation between the constructs of mental toughness and optimism and mental toughness and coping skills. The results indicated a positive correlation between mental toughness and optimism and mental toughness and coping skills. For this purpose, we had taken a sample of 100 sportspersons from the games of Boxing, Hockey and Weightlifting and we had administered the questionnaires of Life Orientation Test-Revised, COPE Inventory and Mental Toughness Questionnaire 30. In our research, we found out moderate correlation between mental toughness and optimism ( $r=0.567$  at 0.01 level of significance) and between mental toughness and coping skills ( $r= 0.526$  at

0.01 level of significance). Such results indicate that in our sample, with an increase in the scores obtained on the scale of optimism, there is a simultaneous increase in the scores obtained on the scale of mental toughness. Also, in our sample, with an increase in coping skills used by sportspersons, there is a simultaneous increase in mental toughness.

Linear regression analysis was conducted on each measure, inputting the concepts of optimism and mental toughness and coping skills and mental toughness. For the concepts of mental toughness and optimism, the  $r$  squared value obtained was 0.32, indicating that we can moderately predict that an individual high on optimism will also be high on mental toughness. For the concept of mental toughness and problem focused coping, the  $r$  squared value obtained was 0.33, which again indicates that we can we have to maintain a cautious attitude while making predictions about the relationship between mental toughness and coping skills in our sample. We can, with modest and judicious conviction predict that an individual who exhaustively uses problem focused mental skills would also be high on mental toughness.

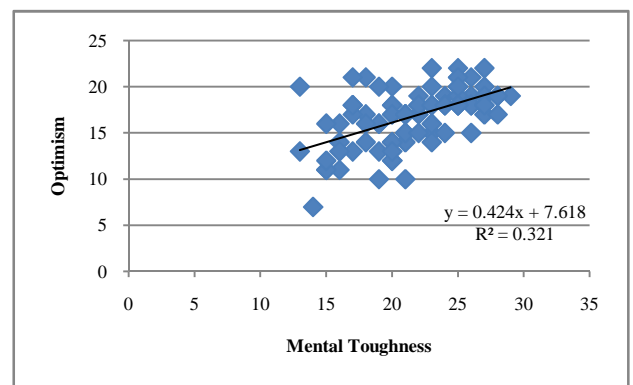


Fig 1 Linear regression analysis between Optimism and Mental Toughness

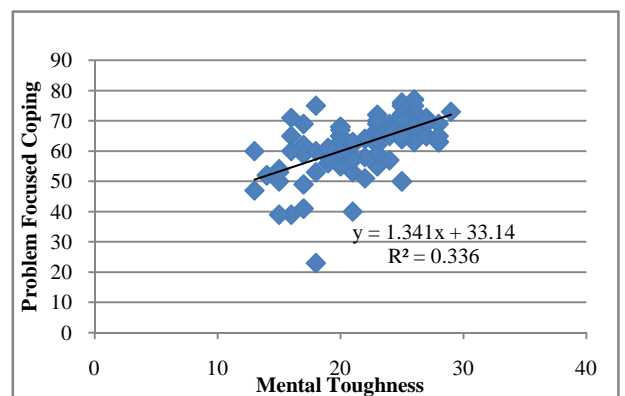


Fig 2 Linear regression analysis between Problem Focused Coping and Mental Toughness

### DISCUSSION

In our research, we had tried to find out the relationship between mental toughness, optimism and coping skills amongst sportspersons. Mental toughness refers to “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." by Jones, Hanton, & Connaughton [Journal of Applied Sport Psychology,14, 209(2002)]. Mental toughness is supposedly an important determinant for ascertaining success in sports, but the concept of mental toughness is an enigmatic and an all encompassing one. It is this characteristic of mental toughness which enables individuals to perceive problems as challenges, rise above them and attain success. The quality of optimism entails that the individuals possess a hopeful point of view towards life. It has been observed that optimistic individuals reveal that they expend more effort to achieve their goals on the other hand, less optimistic individuals tend to withdraw or disengage from their attempts to achieve the goal (e.g., Carver, Blaney, & Scheier, 1979; Gaudreau & Blodin, 2004; Solberg Nes, Segerstrom, & Sephton, 2005). Therefore, optimism is an important determinant between the activities of striving as opposed to giving up. Coping skills means consciously devoting efforts to solve problems, in order to try to overcome, minimize or tolerate strain and conflict (Weiten & Lloyd, 2008; Snyder, 1999; Zeidner & Endler, 1996; Cummings, Greene, & Karraker, 1991; Lazarus & Folkman, 1984; Carver & Connor-Smith, 2010).

In our research, we had tried to quantitatively assess the interrelationship between mental toughness, optimism and coping skills. We had hypothesized that there will be a positive correlation between mental toughness and optimism and mental toughness and coping skills. For this purpose, we had taken a sample of 100 male sportspersons who have had an experience of playing the sport for a minimum of 18 months from the fields of Boxing, Hockey and Weightlifting. We had used the revised version of Life Orientation Test (LOT-R) developed by C.S. Carver to measure optimism, COPE Inventory developed by C.S. Carver, M.F. Scheier and J.K. Weintraub to measure coping skills and Mental Toughness Scale 30 developed by Alan Goldberg to assess mental toughness. Every questionnaire was individually administered to them only after informed consent was taken.

The results indicate that there is a moderate positive correlation between optimism and mental toughness, indicating that as the attribute of optimism was getting more and more profound, there was a simultaneous increase in the strength of mental toughness in our sample. Also, we found a similar relationship between mental toughness and coping skills. There was a moderate positive correlation between the attributes of coping skills and mental toughness, indicating that as there was an increase in utilization of coping skills, there was a simultaneous increase in the level of mental toughness in our sample. Such a finding indicated that in a sportsperson, it is important to have the qualities of increased optimism and a focus on usage of problem focused coping skills. Studies done by Carver, Blaney & Scheier (1979) indicated that individuals who are more optimistic persist more towards attainment of goals and do not give up easily as opposed to individuals who are not as optimistic.

In conducting the regression analysis of the data, we found out that we can with restrained conviction predict that an individual who would be high on the attribute of optimism will be high on the attribute of mental toughness. People who are more

optimistic tend to persevere more and view setbacks as temporary and as something which could be overcome. Higher levels of optimism is linked with the factors of mental imagery, thought control etc. (Nicholls *et al.*, 2008) such an attitude enables them to push through challenges and emerge victorious. Optimism and resilience go hand in hand especially during times of trials and tribulations. The characteristic of optimism influences resilience while the characteristic of resilience influences optimism (Souri & Hasanirad, 2011). Such a finding is also supported by the work done by Carver, Scheier, and Segerstrom (2010)

We can, again, with modest conviction predict that an individual who utilized more of problem focused coping skills will have good mental toughness. Problem focused coping skills enable a sportsperson to tackle the challenge at hand effectively and efficiently and deal with the challenges in a successful way and emerge victorious. According to Khoshaba and Maddi (1999), tough people are more likely to demonstrate problem focused or approach based coping behavior when faced with a stressful situation. In our sample, such a pattern was seen in a moderate degree.

Thus, we may say that optimism and usage of coping skills is associated with the possession of the elusive quality of mental toughness. However, care should be taken while generalizing the finding to the population. Possession of optimism and coping skills is helpful and should be cultivated in each and every sportsperson and proper care should be taken towards the development of such pertinent skills in them.

## CONCLUSION

In our research, we had attempted to ascertain the relationship among the concepts of mental toughness, optimism and coping skills and the degree to which these three characteristics are related. We had found a moderate correlation and with a restrained assurance, we may also say that optimism and possession of problem focused coping strategies to a certain extent facilitates the development and utilization of mental toughness attributes. However, such a study needs to be done on a larger scale, encompassing more sportspersons from various fields. Also, female athletes were not included in the study; therefore, an attempt should be made to ascertain the degree of optimism, coping skills and mental toughness amongst female sportspersons.

## References

- Bull, S.J., Shambrook, C.J., James, W., & Brooks, J.E. (2005). Towards an understanding of mental toughness in elite English cricketers. *Journal of Applied Sport Psychology*, 17, 209-227.
- Carver, C, Blaney, P., & Scheier, M. (1979). Reassertion and Giving Up: The Interactive Role of Self-Directed Attention and Outcome Expectancy. *Journal of Personality and Social Psychology*. 37, 1859-1870.
- Carver, Charles S.; Connor-Smith, Jennifer (2010). "Personality and Coping". *Annual Review of Psychology*. 61: 679-704
- C.S. Carver, M.F. Scheier, S.C. Segerstrom Optimism *Clinical Psychology Review*, 30 (7) (2010), pp. 879-889

- Clough, P.J., & Strycharczyk, D. (2012). *Developing Mental Toughness: Improving Performance, Wellbeing and Positive Behaviour in Others*. London: Kogan Page Limited
- Coulter, T. J., Mallett, C. J., & Gucciardi, D. F. (2010). Understanding mental toughness in Australian soccer: Perceptions of players, parents, and coaches. *Journal of Sports Sciences*, 28, 699-716
- Cummings, E. Mark; Greene, Anita L.; Karraker, Katherine H., eds. (1991). Life-span Developmental Psychology: *Perspectives on Stress and Coping*. p. 92
- Folkman, S., & Lazarus, R. S. (1985). If it changes it must be a process: Study of emotion and coping during three stages of a college examination. *Journal of Personality and Social Psychology*, 48, 150-170.
- Gaudreau, P., & Blondin, J.P. (2004a). Different athletes cope differently during a sport competition: A cluster analysis of coping. *Personality and Individual Differences*, 36, 22 1865; 1877.
- Gibson, A. (1998). *Mental Toughness*. New York: Vantage Press.
- Gould, D., Dieffenbach, K., & Moffett, A. (2002). Psychological characteristics and their development of Olympic champions. *Journal of Applied Sport Psychology*, 14,172-204
- Gould, D., Hodge, K., Peterson, K., & Petlichkoff, L. (1987). Psychological foundations of coaching: Similarities and differences among intercollegiate wrestling coaches. *The Sport Psychologist*, 1, 293-30
- Hardy, L., Jones, G., & Gould, D. (1996). *Understanding psychological preparation for sport: Theory and practice of elite performers*. Chichester, UK: Jones Wiley & Sons.
- 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, 205-218.
- Kaiseler, M., Polman, R. C. J., and Nicholls, A. R. (2009). Mental toughness, stress, stress appraisal, coping and coping effectiveness in sport. *Personality and Individual Differences* 47, 728-733.
- Khoshaba, D. M., & Maddi, S. R. (1999). Early experiences in hardiness development. *Consult Psychol J*, 51, 106-116.
- Kroll, W. (1967). Sixteen personality factor profiles of collegiate wrestlers. *Research Quarterly*, 38, 49-57
- R. S. Lazarus & S. Folkman, *Stress, Appraisal, and Coping* (1984) p.141 Levy, A., Polman, R., Clough, P., Marchant, D. and Earle, K. (2006) Mental toughness as a determinant of sport injury beliefs, pain and rehabilitation adherence. *Journal of Sport Rehabilitation*, 15 (3). pp. 246-254. ISSN 1056-6716
- Loehr, J. E.. (1986) *Mental toughness training for sport: achieving athletic excellence*. Lexington, MA: Stephen Greene Press.
- Mellalieu, S.D., Hanton, S. and Fletcher, D. (2006) an anxiety review. In: Literature reviews in sport psychology. Eds: Hanton, S. and Mellalieu, S.D. Hauppauge, NY: Nova Science. 1-45.
- Nicholls, A. R., & Polman, R. C. J. (2007). Coping in sport: A systematic review. *Journal of Sports Sciences*, 25(1), 11-31.
- Nicholls, A. R., Polman, R. C. J., Levy, A. R., & Backhouse, S. H. (2008). Mental toughness, optimism, pessimism, and coping among athletes. *Personality and Individual Differences*, 44, 1182-1192.
- Norlander, T., & Archer, T. (2002). Predicting performance in ski and swim championships: Effectiveness of mood, perceived exertion, and dispositional optimism. *Perceptual and Motor Skills*, 94,153-164.
- Retzew, D., & Reivich, K. (1995). Sports and explanatory style. In G. McClellan Buchanan & M. E. P. Seligman (Eds.) *Explanatory style* (pp. 173-186). NJ: Erlbaum.
- Scheier, M.F., & Carver, C.S. (1985). Optimism, Coping and Health: Assessment and Implications of Generalised Outcome Expectancies. *Health Psychology*, 4, 219-247.
- Scheier, M. F., Carver, C. S., & Bridges, M. W. (2001). Optimism, pessimism, and psychological well-being. In E. C. Chang (Ed.), *Optimism and pessimism: Implications for theory, research, and practice* (pp. 189-216). Washington, DC: American Psychological Association
- Seligman, M.E.P., Nolen-Hoeksema, S., Thornton, N., & Thornton, C.M. (1990). Explanatory style as a mechanism of disappointing athletic performance. *Psychological Science*, 1, 143-146
- Solberg Nes, L., Segerstrom, S.C., & Sephton, S.E. (2005). Engagement and arousal: Optimism's effects during a brief stressor. *Personality and Social Psychology Bulletin*, 31, 111-120
- Solberg Nes, L., & Segerstrom, S. C. (2006). Dispositional optimism and coping: A meta-analytic review. *Personality and Social Psychology Review*, 10, 235-251.
- Segerstrom, S. C., & Solberg Nes, L. (2006). When goals conflict but people prosper: The case of dispositional optimism. *Journal of Research in Personality*, 40, 675-693.
- Snyder, C.R. (ed.) (1999) *Coping: The Psychology of What Works*. New York: Oxford University Press.
- Souri, H., & Hasanirad, T. (2011), Relationship between Resilience, Optimism and Psychological Well-being in Students of Medicine, *Procedia – Social and Behavioral Sciences*, 30, 1541-1544.
- Taylor, S.E., & Brown, J.D.(1988).Illusion and well-being :A social psychological perspective on mental health. *Psychological Bulletin*, 103,193-210
- Thelwell, R., Weston, N., & Greenlees, I. (2005). Defining and understanding mental toughness in soccer. *Journal of Applied Sport Psychology*, 17, 326-332
- Werner, A. C. (1960). *Physical education and the development of leadership characteristics of cadets at the U.S. military academy*. Microcard Psychology, 132. Unpublished doctoral thesis, Springfield College, MA.
- Werner, A. C., & Gottheil, E. (1966). Personality development and participation in collegiate athletics. *Research Quarterly*, 37,126-131
- Weiten, W. & Lloyd, M.A. (2008) *Psychology Applied to Modern Life (9th ed.)*. Wadsworth Cengage Learning.
- Zeidner, M. & Endler, N.S. (editors) (1996) *Handbook of Coping: Theory, Research, Applications*. New York: John Wiley.

\*\*\*\*\*