

Comparative and Correlative Study of Psychological Hardiness and Competitiveness among Female Student Athletes in Individual and Team Sports

Hassan FAHIM DEVIN¹ • Davood FARBOD² • Hanieh GHASABIAN¹
Toktam BIDEH¹ • Fanarak GHAREMANLOU³

The aims of this study were to identify psychological hardiness and competitiveness profiles and to investigate the relationship between these variables among female student athletes in individual and team sports and also to compare them in these variables. In this descriptive (correlative and comparative) type of study two standard questionnaires assessing psychological hardiness (Zarere, 2011) and competitiveness (Ganji, 2012) with reliability scores of $r = 0.78$ and 0.81 respectively were used. Statistical Population of the Study consisted of all female student-athletes who competed in high school student national sport tournament in the 2012-2013 school years. Statistical sample of the study was 269 athletes (79 individual sports, 190 team sports) who were selected according to Morgan table using a stratified sampling method proportional to size. Both descriptive statistics (frequency tables and index (mean) and dispersion) and inferential statistics (Kolmogorov-Smirnov test to determine normal or abnormal distribution of variables and Pearson's correlation, independent t test) were used to analyze the data. Results of the study showed significant differences between female student athletes in individual and team sports regarding psychological hardiness and competitiveness. Individual sports athletes were more competitive and hard headed than team sports athletes. Significant correlation was observed between these variables in female student athletes in individual and team sports.

Keywords: competitiveness, psychological hardiness, female athletes

¹ Department of Physical Education and Sport Sciences, Mashhad Branch, Islamic Azad University, Mashhad, Iran

² Department of Mathematics, Quchan University of Advanced Technology, Quchan, Iran

³ Department of Psychology, Islamic Azad University, Razavi Khorasan Science and Research Branch, Neyshabur, Iran

Introduction

Based on the research findings, there is a mutual relationship among personality, mood and physical exercise. On the one hand, physical exercise causes significant positive changes in personality and emotional variables. On the other hand, the personal characteristics play an important role in selecting specific types of activities and sports (Afrooze, 2005). Therefore, the identification of mental factors affecting students sport development seems necessary. Mental toughness and psychological hardiness are constructs that have been examined by researchers in the past decades and there are evidences that mentally tough and hardiness athletes reach higher skill levels than athletes who are less mentally tough (Golby and Sheard, 2004).

Psychological hardiness is defined as a combination of attitudes and beliefs motivating individuals to act appropriately under stress in tough conditions and to find a path to development and excellence through potentially disastrous consequences and provide opportunities for growth. According to Fourie and Potgieter (2001), psychological hardiness was defined as the ability of the athlete to reveal a strong personality, emotional and psychological well being, to take charge and show autonomy (see also Atkinson, 2013, p. 8).

Similarly, Clough et al. (2002, p. 38) states a mentally tough or hardy performer possesses a high sense of self belief and an unshakeable faith that they control their own destiny, these individuals can remain relatively unaffected by competition or adversity.

Competitiveness is a motivational tool that can be used in different circumstances, and in particular training and formal education. Gill and Deeter (1988, p. 196) defined competitiveness as the desire to enter, and strive for success in, sport situations or the desire to win in interpersonal situations.

Martens (1975, p. 3) defined competitiveness as a disposition in which one strives for satisfaction when making comparisons with some standard of excellence in the presence of evaluative others in sport (see also Gill and Deeter, 1988, p. 191). It is a process in which an individuals' performance is compared with some criterion in presence of another who can evaluate the comparison process.

Three components of the psychological hardiness can be classified as "commitment", the feeling of integration with many aspects of life such as family, career and interpersonal relationships. A committed person has the individual's sense of meaning and purpose in life, work and family. "Control",

is based on the belief that life events and their consequences are predictable and controlled and can be changed. "Challenge", the third component of psychological hardiness involves a propensity to view problems not as threats or insurmountable obstacles, but as opportunities for growth and achievement. Mental scientists also believe that "psychological hardiness" as a personality trait creates a special insight affecting the ability of coping with various issues of lives. This feature also makes individuals to put into consideration their stress with a realistic and ambitious manner. Someone who has a high percentage of "psychological hardiness" has a remarkable curiosity, sees changes natural that could help to grow and develop, strongly expresses him with full energy and has the ability to resist. These features gives a tough person strong adaptability to adapt with daily stress. Competitiveness is among factors affecting performance and participation in sports activities. Most sport champions believe that mental factors play the same role as physical factors on the success of sportspeople. Hard work is not a suitable substitute replacing skills shortages, but in a similar situation can be a factor in winning or losing. Hard-working athlete is more likely to achieve relatively constant results regardless of situational factors. Even when conditions are not ideal, they maintain positive and optimistic vision, and they will not be affected under pressure. They cope with the issues diverting the mind without allowing losing the ideal focus. They can tolerate pain, and when it is difficult to continue they work hard, they are flexible and able to start from the scratch (Asadpour, 2002).

Gill (2004) in a study titled "Investigating the relationship between competitiveness and participation in sports and non-sports-oriented development among high school and college students" showed a significant difference in competitiveness score among those who compete in sports and those who did not. Those with high challenging traits see positive or negative situations that require re-adjustment as the opportunity to learn and grow than threats to the security and comfort. This belief brings flexibility and high tolerance in vague and upsetting situations of life. Furthermore, the impact of participation in team or individual sports activities on the athletic character is a controversial issue among professionals in the field of behavioral sciences (Estiri, 2001). It seems that these variables affected by sports (individual and group) and the kinds of sports activities chosen by athletes are associated with these variables. Salehi-Nejad and Besharat (2010) demonstrated that there is a positive significant relationship between resilience and toughness of athletes and their success. As a result of contradictory research findings in attributing personal traits to specific sports, there have been no strong reasons to attribute personal traits to specific sports. Therefore, discovering the thoughts and feelings of the athletes in individual and team sports and comparing them seems necessary. This can help physical education teachers and coaches to know and use athlete's mental tendencies in

individual and team sports. Accordingly, with regard to the importance of the above in mental health and athletics success, this study attempts to compare and correlate psychological hardiness and competitiveness in female student athletes in individual and team sports.

Methods

Participants

Statistical Population. Study population consists of all female student athletes who compete in high school student's tournaments in the 2012-2013 school years (900 individuals, 680 team sports as volleyball, basketball, and footstall as well as 220 individual sports as table tennis, track and field, swimming and badminton).

Statistical Sample. Using stratified sampling method proportional to size a sample of 269 (79 individual sports, 190 team sports) was selected.

All players were playing at the highest level that they have ever played at the time they completed a questionnaire, to ensure consistency in results. Prior to participation, participants completed a consent form or were given consent from a parent/guardian. Participant confidentiality was essential and honored by everyone who had or has access to this study.

Measures

Psychological hardiness

Hardiness of athletes was measured by the most recent measurement of hardiness proposed by Maddi and Khoshaba (2001). The 18-item personal views survey III-R (PVS III-R) yields an overall hardiness score, as well as three 6-item subscale scores; Commitment, Control and Challenge. Scores were recorded on a four point Likert scale anchored by 'not at all true' and 'very true' (see also Golby and Sheard, 2004, p. 936).

Competitiveness

Competitiveness of athletes was measured by using 28-items questionnaire developed by Ganji (2006). Scores were recorded on a five point Likert scale. Coefficient alpha was used to measure the reliability of the instruments. Although the instruments were proven to be reliable and have been used in so many researches, reliability tests were needed for this study, since the instruments

were translated into Farsi, and were used in a different culture at a different span of time. The alpha value for psychological hardiness and competitiveness were respectively 0.82, 0.80. All of these values were above the cut off value of 0.70 suggested by Nunnally (1987).

Procedure

Permission from any related organizing committees, cooperation and consent from each individual player to be obtained prior to the administration of inventories. Full ethical approval was also required. Prior to the administration of the questionnaires, a demographics questionnaire was completed by each subject.

Data Analysis

An independent t- test and Pearson correlation test were carried out to compare and correlate the variables between female student athletes in individual and team sports.

Results

Descriptive Statistics

Table 1 displays the means, and Standard Deviations (SD) of variables from participants' perspective. According to mean scores of variables, student athletes who participated in this study were at the above average level in perceiving of being psychologically hard headed (Mean=56.11 from maximum possible 80). This implies that from toughness perspective student athletes in this study to some extent were committed to their sport and had control over the events. Mean score of competitiveness was at medium level (Mean= 73.9 from maximum possible 140). This implies that in this study student athletes from competitiveness perspective because of being in their adolescence don't have the strong desire to compete and to be more successful.

Table 1

Descriptive statistics of variables

Variable	N	Mean	SD	Minimum possible	Maximum possible
Psychological hardiness	269	56.11	10.76	20	80
Competitiveness	269	73.9	11.09	28	140

Comparison result

Independent t-test has been used to compare psychological hardiness and its components and also competitiveness in female students athletes in individual and team sports. According to the result of the study there are significant differences between psychological hardiness and its components (Commitment, Control, Challenge) and competitiveness regarding female student athletes in individual and team sports. Athletes in individual sports were more competitive and more hardheaded (see Table 2).

Table 2

Independent t test

Significance Level	Degree of freedom (df)	t	Descriptive findings		Group	Variable
			SD	Mean		
0.0138	267	0.824	9.09	50.79	Team	Psychological hardiness
			10.101	55.44	Individual	
0.0241	267	0.901	4.476	15.13	Team	Commitment
			4.865	18.97	Individual	
0.0250	267	0.147	5.464	21.32	Team	Control
			5.519	24.05	Individual	
0.0158	267	1.194	2.052	9.13	Team	Challenge
			3.312	12.91	Individual	
0.0097	267	0.761	11.524	70.22	Team	Competitiveness
			14.013	75.81	Individual	

Correlation result

Pearson correlation test was used to investigate the relationship between psychological hardiness and its subscales (Commitment, Control and Challenge) with competitiveness in female student athletes in individual and team sports. From Table 3 there are significant correlations between these two variables in individual, team sport and total (Individual and Team sport).

Table 3

Correlation test of variables

Significance Level	Correlation Coefficient	Group	Variables
0.043	0.553	Individual	Psychological hardiness and Competitiveness
0.001	0.435	Team	
0.001	0.472	Total	
0.001	0.452	Individual	Commitment and Competitiveness
0.001	0.402	Team	
0.026	0.418	Total	
0.042	0.478	Individual	Control and Competitiveness
0.035	0.378	Team	
0.045	0.431	Total	
0.002	0.389	Individual	Challenge and Competitiveness
0.041	0.261	Team	
0.007	0.301	Total	

Discussion

According to the research finding and with reliance on research theoretical principles it may be stated that the hope of achieving victory makes the man to strive and stimulates the spirit of competitiveness. Hard working athlete demonstrate confidence in their ability to deal with different situations and to enhance athletic performance. Hard-working character of athletes with their commitment (one of psychological hardiness component) to the sport functions and tasks provide a context for enhancing competitiveness spirit. This commitment makes athletes to dedicate themselves to athletic goals. On the other hand, control, the other components of hardiness makes the athlete to feel dominance over the situation creating the sense that his or her efforts affect the situation and he will be able to change outcome of events and competitions. Challenging trait another component of psychological hardiness makes the person to see changes in various fields as opportunities for growth and advancement, nor threats. It seems that Challenging trait of athlete increases the competitiveness spirit with increased chances of success. The results of descriptive analysis of

psychological hardiness show that high school female athletes have moderate to high hardiness. Everyone has some degree of hardiness, but the amount of it depends on perceived motivational climate of practice sessions, leadership styles of coaching, athletes will and desire to hard work and to win and personality traits of athletes.

Golby and Sheard (2004) studied 115 rugby players at three different competitive levels including international, super league, and division one. They found that athletes playing at the highest level (international players) scored significantly higher on measures of hardiness and mental toughness than athletes at lower competitive levels (super league and division one).

Research results by Rezaei et al (2009), Ramzi and Besharat (2010), Hatton and Evans (2002), and Golby and Sheard (2004), in the field of psychological hardiness and its components showed that athletes are more resilient than non-athletes. Moreover, professional athletes are more resilient than amateurs, in other words, resilient people choose physical activity along with other activities of daily life, and higher amount of hardiness can increase the likelihood of athletic achievement and success.

The current study compared psychological hardiness and competitiveness in female student athletes in individual and team sports. The findings provide evidence that confirmed significant differences in these variables in these two groups. In this study student athletes in individual sports were more hard headed and had more competitiveness spirit. In individual sports youth athletes learn to be self-sufficient. The success is completely dependent on their own efforts, hard work and competitiveness. Individual sports build intellectual independence. Also, you learn how to set goals and challenge yourself to obtain your personal best. You are your competition, in an individual sport. In order to obtain these results, you need a high value of self-confidence, discipline, focus and passion.

In team sports, you learn to be a confident and well-adjusted person. When you play a team sport you learn that it doesn't matter which team has the best player, the final result hinges on the entire team. Team sports propose the opportunity to be less selfish and to think of other people and also deal with losing as well as winning. In team sport the talent level is no matter, you must rely on your teammates.

Moreover, team sports promote the virtue of working together. Without a group of players performing simultaneously complex motions pointed toward the same goal, the team performance will falter. Only when these variables align does a successful play emerge. The teammates must work together to achieve

this result. Everyone has an assignment and is expected to execute their task effectively. Every failure of this teamwork results in an unsuccessful play. As we all know, there is no “I” in team.

In team sport, working together and relying on teammates are qualities worth fostering. Additionally in individual sport, the ability to rely on yourself and a discipline to keep yourself accountable are critical for success. Regardless of the sport, the challenge is to stay focused and goal oriented. The only person to drive that conversation is you.

In conjunction with the main hypothesis of research the link between these variables was also explored in this study, results showed that there is a significant correlation between the level of psychological hardiness and its components (Commitment, Challenge and Control) with competitiveness. Hardiness people believe that through effort one can influence events and outcomes, and also those with strong sense of control tend to believe they can influence and manage sporting events effectively. Studies have shown, for example, that hardiness increases the sense of self-efficacy which in turn can lead to more positive and healthy behaviors (Oman and Duncan, 1995). It seems that the sense of mastery and determination and defiance in challenging situations increases the spirit of competitiveness by athlete. The results (significant positive relation between psychological hardiness and its components (commitment, challenge and control) with competitiveness are in line with the findings of Ramzi and Besharat (2010) and Gucciardi (2010).

Conclusion

Within the limitation of the study, as for the results of the study it is concluded that student athletes in individual sports were significantly better than team sports athletes with regards to psychological hardiness and its components (Commitment, Challenge and Control) and competitiveness. A significant positive relation was also observed between these two variables. So the psychological variables like psychological hardiness and competitiveness are equally significant and special classes are to be introduced from development stages for players to learn and increase these skills and traits.

Limitation

Although these results provide a considerable amount of information regarding the relation between these variables, a number of limitations should be noticed. First, the study only consisted of high school students. It is a possibility that different results would be found if athletes from different age groups

(university, competitive levels) were surveyed. Therefore, in interpreting these results, it is important to remember that they are limited to this specific subject sample. Secondly, the results are based on self-report of student athletes from various high schools and from different fields of study which may be affected by some bias attitude that participants might take toward the variables.

Practical Application

Our study adds to the growing body of research on competitiveness and factors such as psychological hardiness that affect this variable. The study will be beneficial to understand the psychological hardiness and competitiveness of student athletes. The sport psychologists and coaches working with these areas will be benefited from the findings of the present research and they can include these variables in their training schedule from developmental stages.

References

- Atkinson, M. (2013). *Mental toughness and hardiness at different levels of football*. Sports Psychology and Coaching, Anchor Academic Publishing.
- Asadpour, H. (2002). *Studying the effects of Badminton on personality traits of male students*. M.A. Thesis. Tarbiat Modarres University, Tehran, Iran.
- Besharat, M. A. (2005). The relationship between hard working and sporting success and mental health of student athletes. *Olympic Quarterly Journal*, XIII, 2(30), 123-133. [in Persian].
- Christina, M. B. (2006). Competitive orientation and sport motivation of professional women football players: An internet survey. *Journal of Sport Behavior*, 29(3), 201-212.
- Clough, P., Earle, K. & Sewell, D. (2002). Mental toughness: the concept and its measurement. In I. Cockerill (ed.), *Solutions in Sport Psychology* (pp. 32-43). London: Thomson.
- Fourie, S. & Potgieter, J. R. (2001). The nature of mental toughness in sport. *South African Journal for Research in Sport, Physical Education and Recreation*, 23(2), 63-72.
- Ganji, H. (2006). *General Psychology*. University of Tehran Publishing, [in Persian].

- Gill, D. L. & Deter, T. E. (1988). Development of the sport orientation questionnaire. *Research Quarterly for Exercise and Sport*, 59(3), 191-202.
- Golby, J. & Sheard, M. (2004). Mental toughness and hardiness at different levels of rugby league. *Personality and Individual Differences*, 37, 933-942.
- Gucciardi, D. F. (2010). Mental toughness profiles and their relations with achievement goals and sport motivation in adolescent Australian footballers. *Journal of Sports Sciences*, 28(6), 615-625.
- Hatton, S. & Evans, L. (2002). Hardiness and the competitive and trait anxiety response. *Journal of Anxiety, Stress and Coping*, 6, 167-184.
- Jalili, F. H., Jalili, F. & Salehian, M. H. (2011). Comparison of personality Dimensions, Mental Toughness and social skills of female students athletes (Team-Individual) and non-athletes. *Annals of Biological Research*, 2(6), 554-560.
- Kalantar, J. (1998). *Evaluation of simple and multiple relations of toughness, type A personality and mental stress variables with mental illnesses in the third year of secondary school students in Ahwaz*. M.A. Thesis, Shahid Chamran University, Ahwaz, Iran, [in Persian].
- Karimi, J. (2005). *Personality Psychology* (2nd ed.). Virayesh Publications (in Persian).
- Karimi, M. & Besharat, M. A. (2010). Comparison of hardiness, sociotropy and autonomy in team and individual sports and investigating the impact of these personality characteristics on sport achievement. *Procedia Social and Behavioral Sciences*, 5, 855-858.
- Maddi, S. R. & Khoshaba, D. M. (2001). *Personal Views Survey* (3rd ed., Rev.). The Hardiness Institute, Newport Beach, CA.
- Maddi, S. R., Khoshaba, D. M., Persico, M. Lu., Harvey, R. & Beelker, F. (2002). The personality construct hardiness II. Relationship with comprehensive test of personality and psychopathology. *Journal of Research in Personality*, 36, 72-85.
- Martens, R. (1975). *Social Psychology and Physical Activity*. New York, Harper and Row.
- Narimani, M., Abolqasemi, A., Berhamand, U. & Amini, M. (2006). Comparison of mental toughness, thinking styles, social skills and academic achievement of student-athletes (team - Individual) and non-athletes. *Research on Sports Science*, 4(11), 77-59, [in Persian].

- Nicholls, A. R., Polman, R. C. J., Levy, A. R. & Backhouse, S. H. (2009). Mental toughness in sport achievement level, gender, age experience and sport type differences. *Personality and Individual Differences*, 47(1), 73-75.
- Nunnally, J. C. (1978). *Psychometric Theory* (2nd ed.). New York: McGraw - Hill.
- Oman, R. F. & Duncan, T. E. (1995). Women and Exercise: an investigation of the roles of social support, self – efficacy, and hardiness. *Medicine, Exercise, Nutrition and Health*, 4, 306-315.
- Ramzi, S. & Besharat, M. A. (2010), The impact of hardiness on sport achievement and mental health. *Procedia - Social and Behavioral Sciences*, 51, 823.
- Salehi Nezhad, M. A. & Besharat, M. A. (2010). Relations of resilience and hardiness with sport achievement and mental health in a sample of athletes. *Procedia - Social and Behavioral Sciences*, 5, 757-763.

Web resources

- <http://www.clcfports.org/index.php/information/resources/186-5-benefits-of-individual-sports?>
- <http://g4athlete.com/team-vs-individual-sport/>
- <http://www.schoolatoz.nsw.edu.au/wellbeing/fitness/benefits-of-team-sports>

Hassan FAHIM DEVIN, PhD is currently an assistant professor of sport management at Islamic Azad University – Mashhad Branch, Mashhad, Iran. He earned his Ph.D. in Sport Management at the Islamic Azad University – Science and Research Branch, Tehran, Iran. His current research areas include: Organizational Behavior.

Corresponding address:

Hassan Fahim Devin,
Department of Physical Education and Sport Sciences,
Mashhad Branch,
Islamic Azad University, Mashhad, Iran.
E-mail: h.fahimdevin@gmail.com; fahim_pe@gmail.com

Davood FARBOD, PhD is currently an assistant professor of Probability Theory and Mathematical Statistics at Quchan University of Advanced Technology, Quchan, Iran. He earned his Ph.D. in Probability Theory and Mathematical Statistics at the Yerevan State University, Yerevan, Armenia. He can be contacted at: d.farbod@qiet.ac.ir

Hanieh GHASABIAN earned his M.Sc. in Sport Management at Islamic Azad University – Mashhad Branch, Mashhad, Iran.

Toktam BIDEH earned his M.Sc. in Sport Management at Islamic Azad University – Mashhad Branch, Mashhad, Iran.

Faranak GHAREMANLOU earned her M.Sc. in General Psychology at Islamic Azad University, Razavi Khorasan Science and Research Branch, Neyshabur, Iran.
