

EFFECT OF MENTAL TRAINING PROGRAMME IN IMPROVING
MENTAL TOUGHNESS AND COPING ABILITIES AMONG
TEHRANHIGH SCHOOL STUDENT ATHLETES

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UNIVERSITI TEKNOLOGI MALAYSIA

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Dedicated to “all the student athletes in the world”

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ABSTRACT

Mental strength is critical to the athlete's performance especially in competition. Every coach and athlete will seriously work on mental strength to ensure the positive results are achieved in every competition participated. This study investigated the effect of Mental Training Program (MTP) on mental toughness and coping abilities among male and female high school student athletes. MTP was conducted to investigate how the training improved athletes' mental strength in regards to toughness and coping abilities. The training program was developed based on Iranian culture and sports psychology theories. In this quantitative study, two questionnaires were used as instruments to collect data from control and experimental groups on two occasions – pre and post to measure the effect of the training. The tests were given before and after the MTP. Quasi experimental methodology was adopted to examine the effectiveness of mental training to mental toughness and coping abilities among two groups of 80 Iranian student athletes. Gender and type of sports were considered as independent variables whereas mental toughness and coping ability were dependent variables in the research. The Cronbach's alpha index reported a satisfactory index. Statistical analysis indicated that the overall Mental Training was effective in improving mental toughness and coping abilities among Tehran high school student athletes. In other words it is concluded that MTP influences student athletes' mental toughness and coping ability. It is recommended that any well-designed mental training programs should provide opportunities for athletes to improve their mental toughness and coping ability in preparation for competitions besides educating and training them to confront unpleasant circumstances and overcome obstacles.

ABSTRAK

Kekuatan mental adalah kritikal kepada prestasi atlit terutamanya dalam pertandingan. Setiap jurulatih dan atlit akan bekerja secara serius berkenaan kekuatan mental untuk memastikan keputusan positif dapat dicapai dalam setiap pertandingan yang disertai. Kajian ini mengkaji tentang pengaruh Program Latihan Mental (MTP) kepada kekuatan mental dan kebolehan daya tindak dalam kalangan atlit lelaki perempuan sekolah tinggi. Program latihan dibangunkan berdasarkan kepada budaya masyarakat Iran dan teori-teori psikologi sukan. Dalam kajian kuantitatif ini dua soal selidik digunakan sebagai alat pengumpulan data daripada kumpulan kawalan dan kumpulan eksperimental dalam dua keadaan – ujian pra dan pasca untuk mengukur kesan latihan. Ujian-ujian tersebut diberikan sebelum dan selepas MTP. Kaedah eksperimental kuasi digunakan untuk menguji keberkesanan latihan mental terhadap kekuatan mental dan kebolehan daya tindak dalam kalangan kumpulan 80 pelajar-pelajar atlit di Iran. Aspek jantina dan jenis sukan merupakan pembolehubah tidak bersandar dan kekuatan mental dan kebolehan daya tindak pula adalah pembolehubah bersandar kajian ini. Indeks Alpha Cronbach bagi kajian ini didapati berada pada paras yang memuaskan. Analisis statistik menunjukkan bahawa latihan mental secara keseluruhan berkesan meningkatkan ketahanan mental dan kebolehan daya tindak atlit. Dengan lain perkataan dapat disimpulkan bahawa MTP mempengaruhi ketahanan mental dan daya tindak atlit pelajar sekolah menengah di Tehran. Adalah diusulkan bahawa mana-mana program latihan mental yang dirancang perlu menyediakan peluang kepada atlit untuk meningkatkan ketahanan mental dan kebolehan daya tindak mereka semasa membuat persiapan menghadapi pertandingan selain mendidik dan latihan kepada mereka menangani keadaan tidak selesa mengatasi halangan-halangan.

TABLE OF CONTENTS

CHAPTER	TITLE	PAGE
	DECLARATION	ii
	DEDICATION	iii
	ACKNOWLEDGEMENT	iv
	ABSTRACT	v
	ABSTRAK	vi
	TABLE OF CONTENTS	vii
	LIST OF TABLES	xii
	LIST OF FIGURES	xiii
	LIST OF APPENDICES	xiv
1	INTRODUCTION	1
	1.1 Introduction	1
	1.2 The Background of the Study	3
	1.3 Statement of the Problem	10
	1.4 Objectives of the Study	14
	1.5 Research Questions	14
	1.6 Research Hypotheses	15
	1.7 Scope of the Study	16
	1.8 Significance of the Study	16
	1.9 Definitions of Key Terms	18
	1.9.1 Student Athlete	18
	1.9.2 Mental Training	19
	1.9.3 Mental Toughness	19
	1.9.4 Coping Ability	20
	1.10 Limitations and Delimitations	20

1.11	Theoretical Framework	21
1.11.1	Mental Toughness Theory	21
1.11.2	Coping Theory	23
1.12	Conceptual Framework	26
1.13	Conclusion	28
2	LITERATURE REVIEW	29
2.1	Introduction	29
2.2	Mental Training Program	29
2.3	Mental Skills Measurement	33
2.4	Goal Setting	36
2.4.1	Stress	41
2.4.2	Anxiety	42
2.5	Inner Dialogue	43
2.6	Confidence	44
2.7	Imagery	49
2.8	Mental Skills in Specific Sports	53
2.9	Mental Toughness	59
2.10	Sport Coping Strategies	66
2.11	Conclusion	72
3	METHODOLOGY	74
3.1	Introduction	74
3.2	Research Design	74
3.3	Validity of the Experimental Study	76
3.4	Sampling Method and Participants	79
3.5	Instrument of the Study	81
3.5.1	Coping Inventory for Competitive Sport Questionnaire (CICS)	82
3.5.2	The Sports Mental Toughness Questionnaire	83

	(SMTQ)	
	3.6 Mental Training Program	83
	3.7 Pilot Study	84
	3.8 Data Collection	85
	3.9 Data Analysis	87
	3.10 Conclusion	90
4	MENTAL TRAINING PROGRAM	91
	4.1 Introduction	91
	4.2 Session 1 – Goal Setting	93
	4.2.1 Mental Toughness and Goal Setting	94
	4.2.2 Goal Setting: Purpose in Life and Work	94
	4.3 Session 2 - Introspection	99
	4.3.1 Positive Self-Talk	100
	4.4 Session 3 – Personal Control	101
	4.4.1 Self-Control	101
	4.4.2 Excessive Outcome Orientation	102
	4.4.3 Limiting Subconscious Beliefs	102
	4.5 Session 4 – Energy Management	103
	4.5.1 Energy Management	103
	4.6 Session 5 – Relaxation	108
	4.6.1 Relaxation	109
	4.6.2 Managing Complexity of Anxiety	111
	4.7 Session 6 – Imagery	111
	4.7.1 Visual Imagery	112
	4.8 Session 7 – Coping	114
	4.8.1 Burnout and Coping Ability	115
	4.8.2 Fun	116
	4.9 Session 8 – Self-Confidence	118
	4.9.1 Confidence Building and Maintenance	118
	4.10 Instructional Activities Timetable	120
	4.11 Training Module	125

4.12	Conclusion	127
5	DATA ANALYSIS AND RESULTS	129
5.1	Introduction	129
5.2	Descriptive Analysis	129
5.3	Inferential Statistics	131
5.3.1	The Effect of Mental Training on the Mental Toughness Based on Gender	133
5.3.2	The Effect of Mental Training on the Coping Ability Based on Gender	134
5.3.3	The Effect of Mental Training on the Mental Toughness Based on Type of Sports	134
5.3.4	The Effect of Mental Training on the Coping Based on Gender	135
5.3.5	The Relationship Between Mental Training and the Mental Toughness	136
5.3.6	The Relationship Between Mental Training and Coping Ability	137
5.3.7	The Effect of Mental Training on the Mental Toughness	137
5.3.8	The Effect of Mental Training on the Coping Ability	138
5.3.9	The Appraisal Effect of Mental Training	139
5.4	Conclusion	141
6	SUMMARY, DISCUSSIONS, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS	142
6.1	Introduction	142
6.2	Summary of the Results	142
6.3	Discussion	144
6.3.1	Mental Training on Mental Toughness	144
6.3.2	Mental Training on Coping Ability	145

6.3.3	Gender and Mental Toughness	146
6.3.4	Gender and Coping Ability	147
6.3.5	Type of Sports and Mental Toughness	148
6.3.6	Type of Sports and Coping Ability	149
6.3.7	Mental Training Program	150
6.4	Suggestions	151
6.4.1	Benefits of this Research	151
6.4.2	Suggestions for Education	152
6.4.3	Suggestion for Coaches, Training Teachers and Sports Managers	152
6.4.4	Suggestion for Families	153
6.4.5	Suggestion for Media	153
6.4.6	Suggestions for Future Researchers	154
6.4.7	Suggestions for Iranian Sports Council	154
6.5	Conclusion	155

REFERENCES**156****APPENDICES A – H****178 - 242**

LIST OF TABLES

TABLE NO	TITLE	PAGE
3.1	Internal Validity and Steps Taken to control them	77
3.2	Summary of the instruments and data analysis	90
4.1	Instructional activities timetable	121
4.2	Workout summary of MTP Items	123
5.1	Mean and standard deviation of the subscales of SMTQ questionnaire in pretest and posttest	130
5.2	Mean and standard deviation of three main axes of consistency questionnaire (CICS) in pretest and posttest	131
5.3	The number of participants in each group along with the research schematic design	132
5.4	Results of multivariate analysis for SMTQ questionnaire	133
5.5	Multivariate analysis results for the CICS questionnaire	134
5.6	Results of multivariate analysis for SMTQ questionnaire	135
5.7	Results of multivariate analysis for CICS questionnaire	136
5.8	Results of multivariate analysis for SMTQ questionnaire	136
5.9	Multivariate analysis results for the CICS questionnaire	137
5.10	Results of multivariate analysis for SMTQ questionnaire	138
5.11	Multivariate analysis results for the CICS questionnaire.	139
5.12	Multivariate analysis (MANCOVA) results for the SMTQ questionnaire	139
5.13	Multivariate analysis (MANCOVA) results for the SMTQ questionnaire	140

LIST OF FIGURES

FIGURE NO	TITLE	PAGE
1.1	Mental Toughness Theory	23
1.2	Coping Theory	26
1.3	Conceptual framework	27
3.1	The Quasi Experimental Research Design	76

LIST OF APPENDICES

APPENDIX NO	TITLE	PAGE
A	Sport Mental Toughness Questionnaire (SMTQ)	178
B	Coping Inventory for competitive Sport (CICS) by Gaudreau and Blondin (2002)	181
C	Introduce letter and encourage letter	188
D	Back translation of CICS & SMTQ	192
E	Intervention time table	200
F	Translation approval of questionnaires	203
G	Coping ability and mental toughness categories	221
H	Covariance analysis assumptions	224

CHAPTER 1

INTRODUCTION

1.1 Introduction

The current research developed a type of Mental Training Program (MTP) in the domain of psychology. There are a variety of mental training in different branches. For instance, Etnier (2009) proposed an MTP for young athletes in the process of attaining peak performance which is in sharp contrast with that of adolescents suffering from behavioral problems (Weist et al., 2014).

Various personality traits, mental skills, and coping strategies have noticeable influence on the way mental training is learned and taught (Allen et al., 2011). Common elements in teaching and learning mental training include individual factors and mental skills. These elements appear to be necessary for success and optimal performance. Mental skills help individuals achieve desired goals (Gucciardi, 2008). A close investigation of mental skills and personality traits familiarizes us with individual preferences, planning and goal setting, power of mental visualization, focus, self-control, self-confidence, coping power in high-stress situations, and stability in hardship. It has been observed that these skills develop in the evolution of an athlete toward optimal performance (Etnier, 2009). It is the developed mental skills that distinguish World and Olympic champions from normal athletes (Anshel, 2001). In other words, developing these skills is necessary for winning championships and

achieving success. Classifying mental abilities according to their importance, effect on mental development, and function on young and adolescent athletes seems to be of pivotal value on the grounds that MTP is more useful for young athletes than for adult ones (Etnier, 2009).

Classifying important features of personality according to Sheard (2010) was that two factors are necessary for success and optimal performance among athletes: mental toughness and coping strategy. Clough and Strycharczyk (2012) considered the importance of various features of mental toughness such as considering challenges as an opportunity, and self-confidence as a high level of self-esteem. According to Weinberg and Gould (2003), mental skills including self-confidence, power of challenge, self-control, commitment to tasks and desires, and self-control especially in difficulties need regular exercise which is the physical form. These skills should be developed from adolescence and should be part of continuous training.

Kristiansen and Robert (2010) proposed that the role of MTP in the development of coping skills among young athletes still requires further investigation. They noted that these young competitors are subject to high stress in the face of difficult Olympic and world competitions. Accordingly, they suggest that having an MTP seems necessary for this group of athletes to achieve national and international success.

According to Yoo (2000), programs on mental training and coping strategies are context specific. Therefore, in the specific context of Iran, the first step is deciding which mental skills are more important before setting out to plan and implement MTP for teens and youth in preparation for the Olympic and world competitions. Accordingly, the present study highlighted mental toughness and coping ability as the most important mental skills (see Anshel, 2001; Sheard, 2010) in MTP for Iranian student-athletes.

The present research was an attempt to plan and implement an MTP useful for adolescents and young athletes in developing mental skills such as mental toughness and coping abilities in Iran.

1.2 The Background of the Study

Iran has achieved much success in the Olympics and world championships, especially in the last decade. The attention to sport development has increased the number of champions and the championship pattern has been increasing. Champions have endured great hardships to reach the highest level. Observing their characteristics has assisted in shaping the sport psychologist's experience in MTP (Etnier, 2009). There are several good models for developing champions for teenagers and young athletes. Finding a practical model for young athletes is critical in the course of further development. A combination of mental and physical training will lead to better results. That is why Etnier (2009) believes that MTP has a greater effect on adolescents rather than adults since they are more prepared for positive mental changes. However, adults have a more established mental state with either positive or negative mental patterns. It is similar to classical training in which the adolescents and young adults have higher educability that makes mental changes easier. Tenacity and persistence have been observed among the Olympic champions of Iran (Mousavi-Vaez, 2010). Assuming that mental matters are as important as physical and tactical ones, two important mental factors, mental toughness and coping ability should be further investigated (Crust & Azadi, 2008).

The current emphasis on the significant role of MTP of athletes at lower levels has led to more investigations (Christiansen and Robert, 2010). However, mental training has been proven to be more effective with adolescents and young adults than with adults (Etnier, 2009). These basic trainings are typically neglected and no basic program has been implemented for mental training of teenagers and young adults.

Similarly, Christensen and Robert (2010) contend that the role of mental training in developing coping skills among young athletes facing the stress of competing in Olympic Games require further research. Despite the significance of MTP in the development of mental toughness and coping abilities, adequate research has not been conducted in this area.

In terms of learning activities, Sheard and Golby (2006) provided support for the effective role of MTP in the development of mental toughness for athletes. Their study involved a seven week program for MTP (including goal-setting, imagery, relaxation, concentration, and thought stopping skills) which brought about significant improvements in mental toughness and performance of high-performance adolescent swimmers. They suggested that mental training could increase the level of self-reported mental toughness among athletes.

Practicing mental skills in the development of mental toughness supports Sheard and Golby's (2006) research. Their study found that MTP led to a significant increase in the performance and self-regulatory function in young swimmers. In regards to gender, Kashani's (2010) study in Iran that compared mental toughness of male and female athletes in contact sports such as taekwondo, wushu, kick-boxing, and non-contact sports such as badminton, tennis, and squash, for three levels of participants ranging from beginner, non-elite, to elite. They found that mental toughness was significantly higher for males than females and for elite athletes.

Iran Rezvani (2013) conducted a study exploring the effect of an MTP on mental toughness and sport performance among female futsal athletes in Iran. The population of this research was reported to include all the female athletes who played in eight teams of the futsal super league of Tehran in 2013. Two teams were randomly selected and, assigned randomly as the control and experiment groups. For the pretest, a questionnaire on mental toughness was administered to the participants of the study.

The MTP was given to the experimental group. The finding indicated that MTP can increase mental toughness and sport performance. Moreover, the effect of the intervention was reported to be permanent in the follow-up stage as well.

In Dolat-Abadi and Bahram (2012) report, they conducted a study to determine confidence-related factors for Iranian female gymnasts at the early stages of their athletic career and found that social support served as a reliable factor in determining confidence at the level of elementary school. Social support is defined as the admiration the gymnast receives from others. They found that as confidence levels rose, their performance was less affected by social support and admiration as their confidence was internalized. Likewise, Clough et al. (2002) considered confidence to be a special feature of mental toughness. Sports confidence, is defined by Navabinezhad (2000) as an athlete's belief in his or her ability to achieve success.

Another study on the effects of mental training techniques such as relaxation, imagery, and re-concentration on athletes competing in the 2006 Asia games was conducted in the Iranian context by Sanati-Monfared (2006). The results indicated that there was an improvement in the concentration and self-confidence of the athletes.

In martial arts, which have their roots in East Asian cultures, the underpinning philosophy is to enhance the relationship between the mind and the body through movement and exercise (Anshel, 2008). Therefore, martial arts has an indispensable link with psychology which has been linked to the importance of using mental skills to improve the performance of practitioners is undeniable. Many competitions have been lost due to lack of mental confidence resulting from lack of physical and technical readiness. Lack of confidence or concentration, poor self-confidence, stress, and anxiety hinder athletic performance. For many athletes, the reason for success or failure in competitions can be found internally and, not in the outside world by examining their state of the mind. Hadi Saei, an Iranian taekwondo Olympic gold medalist, believes that

what gives him a competitive edge is not physical or technical superiority but mental toughness (Sadogh and Hamidi, 2011).

The effects of MTP on a set of mental skills and the performance of adolescent female taekwondo athletes from the Iranian National Team were studied by Khanjari (2012) using an MTP. Khanjari's program took the form of an exercise package that included goal setting, relaxation, and imagery. The results were based on answers from questionnaires in the pre-test stage and the athlete's reactions to stress, fear, concentration, and re-concentration. The results of this study showed a significant difference between the control group and the experiment group in terms of their skills, reactions to stress, and concentration after taking part in the MTP.

In Iran, the presence of female athletes in taekwondo is more obvious than it is in other sports. Taekwondo is a sport in which Iranian women are allowed to participate in international competitions. Male Iranian taekwondo competitors have won more medals than female Iranian counterparts. It is, then, argued that improving the mental preparedness of female taekwondo athletes may improve their competitiveness (Khanjari, 2012).

Zandi and Mennati (2012) studied the effect of MTP on the mental skills and performance of male adolescent football athletes in Iran. They found that participating in a course in MTP significantly influenced their reaction to stress. They concluded that negative reactions to stress weakened performance while positive reactions to stress improved performance.

Athletic performance is the result of a combination of different factors. At high competition levels where athletes are physically at their best possible level of performance, mental factors play an important role in their success. Mental toughness is an essential determining factor in the success of the athletes and most sports

psychologists consider it the most important factor (see Khanjari, 2012). In an interview after his loss in the 2012 London Olympic Games, Yusef Karami, an Iranian former Olympic taekwondo champion, stated that "I felt alone throughout the competition and I wished someone would help boost my morale. My opponents had many people around them while I was suffering from being alone and my self-confidence had deteriorated. I could not think of the competition. As an athlete, I was thinking of things I should not while I had a competition the following day. I felt a lot of psychological pressure on me. I had lost the ability to fight. My coach did not know about my morale" (Karimi & Jeddi, 2013).

Behdad Salimi, world weight-lifting champion in the 2012 London Olympic Games from Iran, admitted that "The coach behaves harshly. I have lost my interest in practicing and feel no interest in competing competitively any more, and I have lost my commitment" (Karimi & Jeddi, 2013). In a similar notion, Ali Karimi, a national squad football athlete in Iran stated that "All the internal and external factors pressured us towards losing our team unity. Psychological unity and harmony of the team has declined and we are more prepared to lose than win. We are rapidly losing the team control" (Karimi & Jeddi, 2013).

It is evident from these quotations that signify qualities such as confidence, commitment, team control, and the ability to fight, are all parts of mental toughness, and they have declined among these athletes. This point needs to be taken into serious consideration on the grounds that, as Connaughton (2008) asserts, improvements in an athlete's mental toughness would be positively correlated with their achievements, on the other hand, decline in mental toughness would hinder athletic achievements.

Kristiansen and Roberts (2010) stated that the role of MTP in developing coping skills among young athletes facing the stress of competing in Olympic Games requires further research. Adequate research has not been conducted in this field, despite the

significance of MTP in the development of mental toughness and coping abilities. In order to create a link between theory and practice, it is suggested that further experimental research be conducted (see Crust, 2008).

In a study on the impact of MTP on the mental toughness of woman volleyball athletes in Tehran, Dehghani (2013) conducted a training course on mental skills. She collected information on mental toughness using Sheard and Golby's (2009) *Sports Mental Toughness Questionnaire*, which is the questionnaire used in the present study. The participants were randomly assigned to a control and experimental group consisting of eleven participants each. The participants in the experimental group took part in an 8 week MTP, comprising a training package of self-talk, goal setting, imagination, and relaxation. There were 15 sessions every 8 weeks and each session lasted 30 minutes. The control group did not receive any training. The results of the study revealed that the volleyball athletes who participated in the MTP obtained significantly higher scores in all the categories of mental toughness compared to the control group. The categories included confidence, constancy, and control.

In recent years, Iran is experiencing the emerging significance of mental factors that have been accentuated (Mousavi Vaez, 2011). The role of mental factors, however, has rarely been referred to when discussing these failures (Musavi vaez, 2011). Nasim et al. (2012), for example, concluded that paying heed to mental methods such as lowering stress levels, keeping calm during games, and enhancing mental toughness yielded better results in volleyball leagues. In a related study, Sheard and Golby (2006) asserted that mental toughness can be enhanced through MTP. Similar claims have also been made by other scholars in the field (Holt, et al., 2012; Nicholls, 2007; Nicholls et al., 2008).

Shamshiri (2011) carried out a study that examined Iranian national adolescent volleyball athletes, and based on the results, he put forward the claim that mental

toughness was a factor that significantly affected athletic success. He considered this factor when looking at the obstacles facing national athletes who lost in the competitions. He did not, however, provide any explanation regarding the components of mental toughness.

Other researchers confirmed that mental toughness is a determining factor for wrestlers and decreased when coping ability was lower due to either competition or communication. Consequently, wrestlers facing these obstacles failed to achieve the expected success (Shamshiri, 2011). Nicholls and Polman (2007) stated that the relationship between coping ability and mental toughness is obvious. It is widely accepted that mentally tough athletes are able to cope with stress and undesirable situations more effectively (Bull et al., 2005; Jones et al., 2002; Nicholls et al., 2006; Nicholls & Polman, 2007; Thelwell et al., 2005). The Iranian Ministry of Youth and Sports was established in 2010 the Fourth Development Program to improve sports at schools (Sadough & Hamidi, 2011). A plan was suggested based on the needs of the students and a sport schedule was developed to prepare them for national and international competition. On this basis, the Ministry of Education in Iran has been obliged to increase sports training in schools to train and prepare students for national teams.

In the program developed by the Iranian Ministry of Education in sport schools, students are trained as either general or elite athletes. At the elite level, students are trained as athletes for championships, while the general athletes are trained to enjoy participating in sports. Very talented student-athletes have been discovered in Iran by some experts and these student-athletes are placed under the supervision of committees for at least five years. All of these student-athletes have sport files and records, which served as the basis for scoring their performance at the end of the school year. Their performances are scored according to some criteria including the number of medals, the annual sports activity, and expert evaluation.

Statistics, however, show that sports programs alone have not been successful enough to enhance the athletic ability of students. According to Sadough & Hamidi (2011), the annual report from the Iran Ministry of Youth and Sports indicated that even though the students had the acceptable level of athletic ability during the training period, they were not successful in competitions.

1.3 Statement of the Problem

Young athletes are subject to high stress levels in the face of difficult competitions and in hard practices. Weinberg and Gold (2003) asserted that athletes do not understand how to practice mental skills. However, in actual situation, the skills may not be instinctive for all student athletes which requires them to have strategies to deal with stress (Gould et al., 1993).

Loher (1983) worked with athletes for the first time in the mid-1980s to increase athletic performance. As a sports psychologist, he tried to prepare athletes for optimal function of stress tolerance. Therefore, it can be argued that dealing with stress is a fundamental debate in the development of sport performance which is possible through mental training. Through mental training, the athlete is enabled to overcome stress, take it under her/his control and show best performance in stressful and unfavorable situations. The ways to overcome stress and be compatible with the environment are referred to as coping ability (Lazarus, 1993).

Mental toughness is one of the mental abilities that play an important role in sports and should receive more attention and consideration (Cohen, 2013). The progress made in psychology means that psychologists have developed approaches to overcome athletes' psychological problems. These developments include techniques to boost confidence and deal with stressful and emotionally challenging circumstances during or after a game (Cohen, 2009). Psychological practice, along with physical exercise, is

argued to have an important effect on the preparation of athletes to help them perform effectively in competitive events (Zandi and Menati, 2013).

According to Wann (1997, p.128), mental training is a "comprehensive intervention package designed to educate and train athletes in mental preparation." In another study, Vealey (2002) defined the term mental skills training as "describing techniques and strategies designed to teach or enhance mental skills that facilitate performance and a positive approach to sport competition." Conducting mental training programs is argued to be effective in helping athletes perform better. According to Sheard and Golby (2006), a mental training program that is well-planned provides opportunities to foster individual growth in young athletes that would facilitate their growth in other areas of their lives.

Furthermore, any training is expected to improve performance on the grounds that every athlete must be able to deal with an array of challenges in order to excel. Mental training proves to be effective in this regard as it uses targets and plans, mental training attempts to influence the mental process and personality of an athlete, and adjust and control his/her behavior by adopting ways to promote certain psychological states (Crust, 2010). Useful training techniques include psychological skills that improve performance.

The concept of mental toughness in sports is not a new one (Crust, 2008). The work of Jones, Hanton, and Connaughton (2007) made a significant contribution to the current understanding of mental toughness in sports. Jones et al. (2007) studied mental toughness within the framework of personal construct theory (Kelly, 1955), focusing on what athletes considered to be the qualities of the ideal and mentally tough performer. They defined mental toughness as having the natural or developed psychological edge that enables one to, "generally, cope better than your opponents with the many demands (competition, training, and 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" (p. 209). Gucciardi, Gordon and Dimmock (2008), on the other hand, defined mental toughness as, "a collection of values, attitudes, behaviors, and emotions that enable you to persevere and overcome any obstacle, adversity, or pressure experienced, but also to maintain concentration and motivation when things are going well to consistently achieve your goals" (p. 278). Crust (2008) states that although mental toughness seems to be unchangeable, it is a cognitive skill subject to manipulation via training. This is a topic of concern for psychologists working with athletes (Crust and Azadi, 2010).

Coping is considered to be the ability to confront unpleasant circumstances that are not agreeable in terms of our mindset or beliefs. There are typically three methods for coping with stress. The first approach requires paying close attention to the stress-causing incident. In this approach, individuals are expected to recognize and manage or resolve the problems or incidents that caused the stress. This approach is also referred to as a problem-focused approach that transforms stressful conditions into non-stressful ones. In the second approach, an individual is expected to manage his emotional reactions to the stress. Therefore, this approach is referred to as emotion-focused approach (Kennedy, 2009). The third approach is an avoidance-focused approach and covers a range of activities and strategies on the part of an individual to escape from the stress-inducing situation (Yan and Mok, 2012). The best method depends on whether the approach focuses on the factors causing the stress or the individual's emotional reactions to stress. In a research aiming at comparison of coping methods, Ramezanijad and colleagues (2008) considered Iranian national teams for individual sports. Their findings indicated that Iranian national teams' athletes made use of problem-focused, emotion-focused, and avoidant coping methods. Generally, problem-focused coping strategies were used more than the other two by both males and females.

In Iran, there is a lack of studies on barriers to sport achievement of young athletes. They cannot learn these mental skills basically. Young athletes, particularly in important competitions lose their self-confidence. The necessity of teaching coping strategies and mental toughness in high pressure training and important competition is evident. Young athletes need to have these skills. According to Yoo (2000), programs on mental training and coping strategies are, by definition, context specific. Therefore, in the specific context of Iran, the first step is deciding which mental skills are more important. Crust (2008) stated that, there has been little experimental research in mental toughness and mental training. Thus, a study to investigate whether mental training improves coping abilities, mental toughness, and athletic performance appears to be required.

Moreover, the effect of practicing mental skills on the development of mental toughness supports the findings of Sheard and Golby's research (2006), which indicates that MTP leads to a significant increase in the performance and self-regulatory functions in teen swimmers. In general, however, there are few studies that look at the effect of mental training on mental toughness and coping ability among student athletes. Therefore in order to solve this issue, the present study was conducted.

1.4 Objectives of the Study

The objectives of this study are as follows:

- i. To determine the difference of the effect of the mental training program on the mental toughness and coping abilities among Tehran high school student athletes based on gender and type of sports
- ii. To measure the relationship between mental training and the mental toughness and coping abilities of the Tehran high school student athletes
- iii. To measure the effect of mental training program on mental toughness and coping abilities of the Tehran high school student athletes
- iv. To measure the appraisal effect of the mental training program in coping abilities among Tehran high school student athletes

1.5 Research Questions

The research questions of the study are as follows:

- i. Is there any significance different on the effect of the mental training program on the mental toughness and coping abilities among Tehran high school student athletes based on gender and type of sports
- ii. Is there any relationship between mental training and the mental toughness and coping abilities of the Tehran high school student athletes
- iii. What are the effect of mental training program on mental toughness and coping abilities of the Tehran high school student athletes

- iv. What are the appraisal effect of the mental training program in coping abilities among Tehran high school student athletes

1.6 Research Hypotheses

The null hypotheses for this study are listed as follows:

- i. H_{01} : There is no significance difference between the mental toughness of Tehran high school student-athletes based on gender
- ii. H_{02} : There is no significance difference between the mental toughness of Tehran high school student-athletes based on type of sports
- iii. H_{03} : There is no significance difference between the coping abilities of Tehran high school student-athletes based on gender
- iv. H_{04} : There is no significance difference between the coping abilities of Tehran high school student-athletes based on type of sports
- v. H_{05} : There is no significance correlation between mental training program and the mental toughness of the Tehran high school student-athletes
- vi. H_{06} : There is no significance correlation between mental training program and the coping abilities of the Tehran high school student-athletes
- vii. H_{07} : There is no significance effect of the mental training program on the mental toughness of the Tehran high school student-athletes
- viii. H_{08} : There is no significance effect of the mental training program on the coping abilities of the Tehran high school student-athletes

1.7 Scope of the Study

The aim of the research project is to examine effect of mental training program, gender and type of sport as independent variables in mental toughness as a personality trait and coping ability as a mental skill, two dependent variables, among Tehran high school student athletes as a target population of this research. The research used two questionnaires to evaluate these variables.

A list of the student-athletes including both male and female students from high schools in Tehran was provided by the Physical Education office of the Iranian Ministry of Education. The student-athletes who participated in the experimental and control groups were chosen from that list. Participants included 80 male and 80 female student athletes ranging from 15 to 18 years participated in the experimental and in control groups. Types of sport were team and individual. Duration of the MTP was eight weeks. Each session lasted 2 hours and the meetings took place from 10:00 am to 12:00 am. Further explanation is done in the methodology chapter.

1.8 Significance of the Study

Weinberg and Gould (2003) asserted that some coaches and athletes do not understand how to teach and practice mental skills. Coaches focus their efforts on helping young athletes, mainly to develop physical and technical skills. It is taken for granted that student-athletes already know how to cope because they are involved in the educational process that includes examinations and evaluations. However, in actuality, these skills may not be instinctive for all student-athletes. In fact, similar to adults, they need to have strategies to deal with stress (Gould et al., 1993). Hence, understanding how to teach and practice mental skills can be considered a significant aspect of this study. A MTP focusing on strategies generally related to positive thinking, goal setting, positive self-talking, and maintaining confidence could help student-athletes develop

abilities to succeed in sports. MTP can help young athletes develop a positive attitude towards themselves and improve their skills to control their negative thinking and feelings (Orlik & McCaffery 2007) besides giving young athletes time to develop successful strategies for dealing with competitive situations (Orlick & Zitzelsberger, 1991) and finally improving the level of performance (Weinberg & Gould, 2003). There is a lack of research, involving the execution of a systematic MTP with student-athletes (young athletes) in Iran. Thus, helping young athletes develop their positive attitude and mental skills is another aspect to be studied in this research.

In Iran, sports and physical education are at the basic level (particularly in schools). However, in recent years, there have been remarkable improvements in the performance of Iranian athletes in international competitions. In terms of student health and well-being, sports education in Iran is intended to improve the health of the young generation (Sadough & Hamidi, 2011). To this end, talent detection and identification committees have been established in sports federations to identify talented students in sports such as volleyball and basketball based on their height, and for wrestling and weightlifting, it is based on their body and muscle size. The responsibility of these committees is to determine if talented student athletes can improve their abilities and win Olympic medals.

The present study is intended to contribute to such committees by employing sports psychology to select athletes with higher levels of mental toughness and superior coping abilities. Classifying mental abilities and their effect on the optimal performance of Iranian student-athletes as well as providing them with an MTP along with physical exercises on the other are noteworthy issues investigated in the study. The findings of this study will benefit the Ministry of Youth and Sports, the Ministry of Education, psychologists, and sports psychologists. In the long run, the scientific consideration of the mental factors of adolescent athletes, in particular, and young people in general, can lead to better prospects for the next generation.

The reasons behind an athlete's success or failure lie only in athletes' mental world. Accordingly, improving all aspects of athletic performance can be done through the practice of mental skills (Mousavi Vaez, 2011). However, despite the vivid importance of the issue, there is little research on MTP during an athlete's preparation period (Khanjari, 2012). Iranian athletes seem to require programs in mental toughness on an ongoing basis so that they can learn and internalize these skills to better improve their mental endurance and sports performance (Dehghani, 2013). An important characteristic of mental skills lies in the fact that they are teachable. In other words, athletes can learn to be more confident and have more control over stressful situations (Mousavi Vaez, 2011).

Overall, the results of this study can be employed by the Iranian Ministry of Education to pave the way for student athletes to become high-performance athletes. It can also be useful for researchers and authorities in the field of sports to help improve young athletes mental skills especially aimed at improving student athlete's performance.

1.9 Definition of Key Terms

1.9.1 Student Athlete

In this study, the student athletes included all the high school student athletes, males and females, whose names were on a list provided by the Physical Education office of the Iranian Ministry of Education in Tehran. They have participated at least once in student sport competitions at national or provincial level. A student athlete is a participant who takes part in an association competitive sport supported by an educational institution where he or she is registered (Grady, 2000).

In this study, the student athletes included all the high school student athletes, males and females, whose names were on a list provided by the Physical Education office of the Iranian Ministry of Education in Tehran. They have participated at least once in student sport competitions at national or provincial level.

1.9.2 Mental Training

Mental training program according to Vealy (2002) is the techniques and strategies designed to teach or enhance mental skills that facilitate performance and positive approach during sport competition. MTP is the mental or psychological practices developed to improve performance and increase contentedness related to sports and physical activities (Weinberg & Gould, 2003).

Mental training program in the present study included eight weeks of training, two hours a week, goal-setting, self-talking, controlling the things within your control, energy management, relaxation, visual imagery, burn out and coping ability, confidence building and maintenance to improve performance.

1.9.3 Mental Toughness

Mental toughness according to Gucciardi (2008) is a collection of values, attitudes, behaviors and emotions that enable individuals to persevere and overcome any obstacle, adversity and pressure but also maintain concentration and motivation. Mental toughness includes three components: confidence, constancy and control.

In the present study, mental toughness is an operation collection of values, emotions, and behaviours that enables the student athletes to overcome any potential

mental difficulty so that they can maintain their concentration under stressful sport circumstances, which is measured by the score acquired by the participants on the Iranian standardized version of the *Mental Toughness Questionnaire* (Sheard, Golby, & Van Wersch, 2009).

1.9.4 Coping Ability

Coping ability according to Lazarus (1993) comprises of the ways to overcome stress and to be compatible with the environment. Coping ability includes three approaches: task-focused, emotional focused and avoidance-focused.

In the present study, coping ability is a skill used to deal with sport-related unpleasant situations, which is measured by the score acquired by the participants (male and female Iranian high school student athletes) on the Iranian standardized version of *The Coping Inventory for Competitive Sports* (CICS) (Gaudreau & Blondin, 2002).

1.10 Limitations and Delimitations

The present study, similar to other research projects on human subjects, is inherently prone to some factors that may affect the results of the study. For example, accessible population in this study was a limitation as well as the time constraint for implementation. Participants were students and the implementation of this class was possible only in summer. Other limitation included the venue. The class was limited. Many student athletes were invited, and in fact, these participants of the research were those who accepted the invitation. In addition, other external factors leading to limitation with regards to internal factors such as maturation and honesty of participants

in completing the questionnaire can affect the findings of the current research as these were beyond the control of the researcher. A complete description of internal factors affecting the research finding is illustrated in the methodology chapter.

Delimitations were within the researcher's control. Delimitation, generally, is to present the boundaries established in the development of the study such as population (Tehran high school student athlete), sample, objectives, research questions and statistical analysis.

1.11 Theoretical Framework of the Study

1.11.1 Mental Toughness Theory

Lazarus (2000a) stated that stressful situations create physiological and psychological states indicating the presence of stress. The first noteworthy issue among the theoretical concepts of mental toughness and coping ability is stress. Inability to cope with stress in sports has been associated with sports withdrawal (Anshel et al., 2001a) and decreased performance (Lazarus, 2000a). It is therefore crucial to researchers and practitioners working with athletes to have a greater understanding of coping in sports in order to design effective interventions and to make the sport a more satisfying experience (Nicholls & Polman, 2007).

Mental toughness developed largely from Implicit Theories of Mental Toughness (see Gucciardi and Gordon, 2011). It is primarily occurred within sport contexts which commonly used by coaches and athletes (Jones, Hanton, & Connaughton, 2002). The focus of the theory was shifted from human malfunctioning toward human strengths and optimal functional (Lopez and Snyder, 2009).

In sports, a personal resource is considered as important to overcoming adversity and at the same time maintaining high levels of performance or functioning (Gucciardi, Hanton, Gordon, Mallet and Temby, 2007). The mental toughness is now represents a contemporary application of the science of positive psychology (Rusk and Waters, 2013).

The importance of mental toughness was also considered as an important focus in other areas such as surgery (Colbert, Scott, Dale and Brennan, 2012), business (Jones and Moorhouse, 2007) and law enforcement (Miller, 2008) for attaining and sustaining performance excellence.

Most scholars agreed that mental toughness represents a personal resource or individual difference variable which is central for performance despite stress or adversity (Hardy, Bell, & Beattie, 2014). It is the study to counter where the concept is derived from and whether individuals are born versus made mentally tough (e.g., Crust, 2007). Based on the Implicit Theories of Mental Toughness which shape one's development (Gottesman & Hanson, 2005), the study have attempted to better understand the developmental processes and mechanisms for mental toughness among school athletes. An implicit theory framework (Dweck & Leggett, 1988) provided the theoretical backdrop upon which to examine this question. Three main constructs including confidence, control and constancy were measured to determine how the mental toughness develop and it association to students' sports achievement as follow:



Figure 1.1: Mental Toughness Theory

1.11.2 Coping Theory

Coping is considered as the ability to confront unpleasant circumstances that are not agreeable in terms of our mindset or beliefs. Mental toughness according to Gucciardi (2008) enables individuals to persevere and overcome any obstacle, adversity and pressure. All these concepts and definitions are about stress and ways to overcome stress. In more recent development, coping is viewed as adaptive processes which associated with a long-term series of interactions with a challenging environment.

In this research, the researcher sought a way to observe the effect on mental toughness and coping ability of specific groups. Tehran high school student athletes were the participants in the study. The mental toughness and coping ability are two dependent variables that the researcher intends to examine among high school student athletes.

Those student athletes have taken part in some of eight identified types of individual and team sports. The goal of the study was to determine the effect of a type of mental training program that takes into consideration gender, and the eight types of sports played by members in the experimental group. The researcher investigated if teaching could change the mental toughness and coping ability of the experimental group.

Loehr (1983) worked with athletes for the first time in the mid-1980s, where he targeted to increase athletic performance. As a sport psychologist, he tried to prepare athletes to achieve optimal function of stress tolerance. Therefore, it can be argued that dealing with stress is a fundamental debate in the development of sport performance which is possible through mental training. Through mental training, the athlete is enabled to overcome stress, takes it under her/his control and gives t best performance in stressful and unfavourable situations. The ways to overcome stress and to be compatible with the environment are referred to as coping ability (Lazarus, 1993).

Gender differences were first studied by Nicholls et al. (2009). They concluded that male athletes have higher mental toughness than female athletes. This theory was based on Vealey's findings (1988) which stated that male athletes are more self-confident than female athletes. The current research also studied effect of mental training program in mental toughness and coping ability, considering the gender factor.

Research by Anshel et al. (2001b) found that males did not use more problem-focused coping strategies than female. Female adolescents in general have a more wide-ranging coping repertoire stressful period in which many developmental changes occur. Female adolescents reported seeking social support and using emotion-focused coping method to a greater extent than men, whereas men reported using relatively more problem-focused coping method than women (Compas et al, 2001). Nicholls et al. (2009) were the first researchers who concluded that the athletes of team sports enjoy

higher mental toughness than the athletes of individual sports. This is consistent with the findings of Vealey (1988), who believes that the athletes of team sports enjoy higher self-confidence than the athletes of individual sports. In this research, the researcher investigated further the issue by extending it according to specific type of sports to evaluate student athletes mental toughness and coping ability.

Over the past decades, several studies have examined the coping behaviors of student-athletes (Anshel, Williams & Williams, 2000; Weinberg & Giacobbi, 2000). Finch (1999) stated that the athletes of team sports commonly apply social support skill as one of the task focused coping components more than the athletes of individual sports. In contrast, Tasaddoqi (2013) holds the belief that athletes of individual sports generally apply task coping ability more than the athletes of team sports. On the other hand, Gaudreau et al. (2005) and Gould et al. (1993) believed that the avoidance focused coping style is more common among the athletes of individual sports while Ramazaninejad et al. (2008) and Anshel et al. (2008), considered avoidance focused coping is more common among the athletes of team sports. Therefore, the results of research by Gaudreau et al. (2005) and Gould et al. (1993) do not match the results of Ramazaninajad (2009) and Anshel et al. (2008). Panahi's results (2011) indicated that the athletes of individual sports use the task focused coping more. In other research, the results obtained by Philippe et al. (2004) indicated that weight-lifters are the only athletes of individual sports who seldom use the avoidance focused coping style.

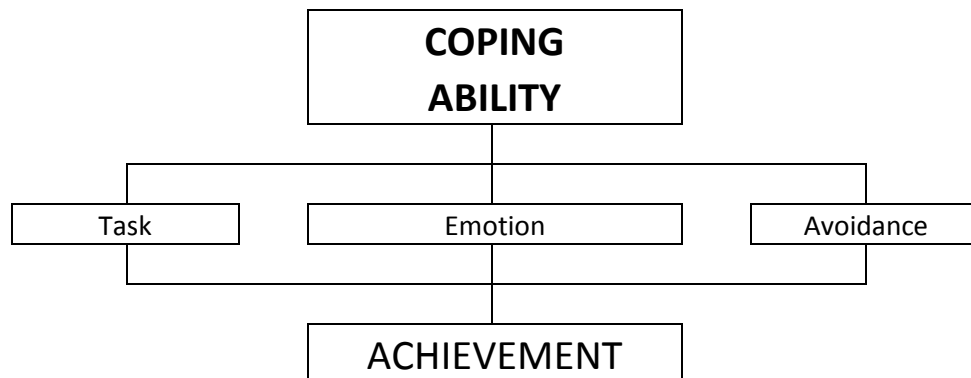


Figure 1.2: Coping Theory

Finally, this question arises as to whether there is any difference between control and experimental groups after the mental training program was employed in the experimental group, which was measured through comparing pre and post test scores. The role of MTP in the development of mental toughness and coping abilities has received some support through the work of Sheard and Golby (2006). It is concluded that MTP will develop mental toughness and coping abilities.

1.12 Conceptual Framework

This conceptual framework provided a reference for the formulation of the research questions as well as direction for the research design. The conceptual framework supported the explanation of the theoretical framework and educational context of the current study. In this study, there are three independent variables (IV) including mental training program (MTP) as the experimental variable, gender and type of sports. There are two dependent variables (DV) which include mental toughness and coping ability. Conceptual framework in this study is the basis to organize ideas. There are some effects between independent variables and dependent variables.

The MTP is an independent variable (IV) in the current study plays a major role in improving the mental toughness as it is a dependent variable (DV). In other words, the student athletes in the experimental group were trained on how to deal with stressful situations and to control and reduce the stress in such stressful situations. The output was statistically studied and analyzed using a pre-post test method, which was applied before and after the MTP. The current research proved the MTP is the dependent variable (DV) in the improvement of coping ability. Accordingly, the researcher observed that the MTP which was applied led to the improvement of mental coping abilities. This has been proven based on the statistical analysis. The diagram of the conceptual of the study are as follow:

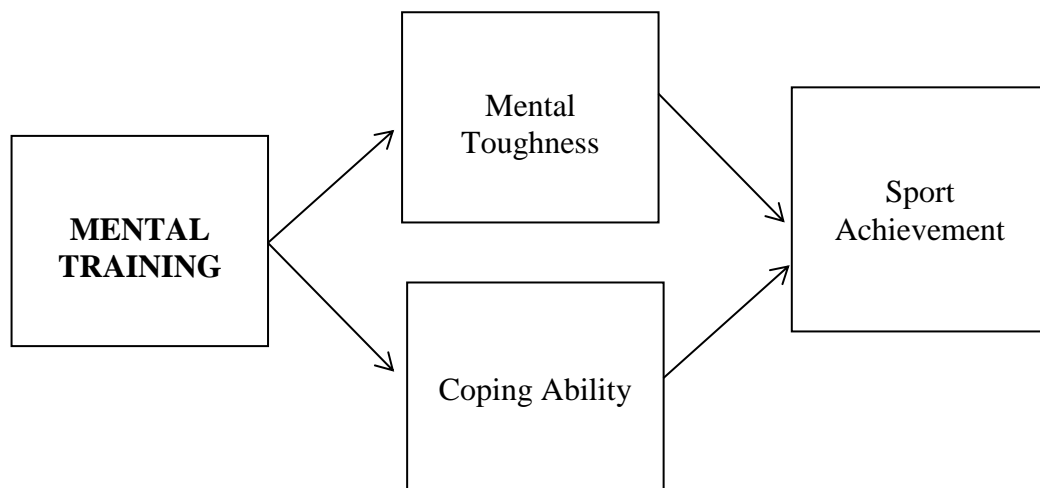


Figure 1.3: Conceptual Framework

1.13 Conclusion

This chapter highlighted the fundamental and conceptual ideas explored in this study. Important information was provided regarding the establishment of mental skills training as a way to improve the probability of achieving the desired mental outcome. Therefore, the effect of MTP on two important variables of mental toughness and coping ability is a possible result of the study.

This study also aimed to bridge the gap between theories on mental toughness, and coping ability and practice (Crust, 2010). Despite the importance of such fundamental issues and their effect on an athlete's success, research studies are few and far from sufficient. The present work, therefore, was an attempt to bridge the gap concerning the type of sport has positive influence on mental toughness.

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