

**ANXIETY MANAGEMENT OF
ATHLETES THROUGH TRAINING PROGRAM**

A Thesis Submitted to
TILAK MAHARASHTRA VIDYAPEETH, PUNE

For the Degree of Doctor of Philosophy (Ph. D)

In Education (Interdisciplinary)

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CERTIFICATE OF THE GUIDE

This is to certify that the thesis entitled “Anxiety Management of Athletes through Training Program” being submitted herewith for the award of the Degree of Vidyavachaspati (Ph.D.) in Interdisciplinary of Tilak Maharashtra Vidyapeeth, Pune is the result of original research work completed by Mrs. Geeta Vageesh Muthya under my supervision and guidance. To the best of my knowledge and belief, the work incorporated in this thesis has not formed the basis for the award of any Degree or similar title of this or any other University or examining body upon her.

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List of Abbreviations

- 1) Depression, Anxiety and Stress – DAS
- 2) Adverse life events- ALE
- 3) Individualized Zones of Optimal Functioning- IZOF
- 4) Pimpri Chinchwad Municipal Corporation- PCMC
- 5) Competition State Anxiety Inventory- CSAI-2
- 6) Psychological Skill Training – PST
- 7) Hamilton Anxiety Scale- HAM-A
- 8) State Trait Anxiety Inventory- STAI
- 9) Sport Competition Anxiety Test –SCAT
- 10) Physical Activity and Sport Anxiety Scale- PASAS
- 11) Competition State Anxiety Questionnaire- CSAQ
- 12) Four Systems Anxiety Questionnaire- FSAQ
- 13) Anxiety Management Training Program- AMTP
- 14) Yashwantrao Chavan Maharashtra Open University- YCMOU

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CHAPTER 1

INTRODUCTION

Introduction

Importance of Research in Education - Educational professionals continually need to examine what they are doing. In this process, one may need to compare our own practices with different methods used by others in similar settings.²

On similar lines, researcher being an Educational Psychology Professional felt that there is a need to deal with everyday challenges of school going children, especially adolescent children. The challenges commonly faced are disinterest in academics, lack of communication with parents, incapability to cope with anxiety causing situations (like examinations), opposite sex attraction, disorientation regarding goals in life, excessive aggression etc. In the present research, an effort has been made to design, implement and test the effectivity of the Anxiety Management Training Program. This Anxiety Management Training Program has been implemented with adolescents who are students and competitive athletes too. Present research is an effort to find solution to Anxiety related problems that adolescents confront.

1.1 Importance of Sports

In countries around the world, sports, recreation and play are improving health of both mind and body. They are teaching important life lessons about respect, leadership, cooperation and emotion regulation. As per Olympic philosophy, they are promoting equality for all and bridging divides between people.⁷

From the time infants are born, before they coo and bubble, they begin to explore. They touch and hold, reach and shake, grab and taste; discovering the world not only with their eyes and ears but also with their hands, feet and mouth. Children at play are cognitively active, making new observations, asking and responding to questions, making choices and extending their imaginations and creativity. Play gives opportunities to children for stimulation and to develop their brains for future learning. Through play, children explore, invent and create. They develop social skills and ways of thinking, learn how to deal with emotions, improve their physical abilities, and find out about themselves and their capabilities. A child's play forms a solid foundation for

a life of learning. As children grow, they acquire new skills and build on existing capacities. Through climbing, running, hopping, skipping and jumping, they further develop and strengthen their bodies. Play helps for further socialization, they master the more formal skills of life such as problem solving, decision making, being disciplined, adjusting in the group etc. They also learn leadership skills. Games with rules and formal teamwork play an important role in helping school aged children develop their physical skills, practice cooperation, mutual understanding and logical thinking. They learn about taking turns with their teammates, sharing, respecting their peers and valuing rules. As the child grows into an adolescent, play take another form and becomes competitive sport.

Through play, the search for identity becomes the major development task of adolescents. As explorers of a widening unknown, adolescents experiment with new behaviors' and test possibilities. With the right guidance, they develop the skills they need to become responsible and caring adults. Organized sport and physical recreation provides adolescents opportunities for self expression. This helps adolescents to develop skills in communication, leadership and to test and improve their abilities, which helps in building confidence. Sport also allow young people a way to bond with adults and with one another, creating a sense of community and belonging. Through sport, recreation and play, children and adolescents learn to think critically while finding solution to problems. They promote the spirit of friendship, solidarity and fair play, teaching teamwork, self-discipline, trust, respect for others, leadership and coping skills. Essential to ensuring that children develop into responsible and caring individuals, they help young people meet the challenges they face and prepare them to assume leadership roles within their communities. Sport can be a powerful tool in promoting equality for all. Sport helps children with disabilities gain confidence that they can then apply to other aspects of their lives.

Sport can help girls and young women claim their place in society. It can provide girls, who are often under tremendous pressure to begin sexual activity and childbearing early, a chance to exert more control over their lives. It can help girls gain respect for their bodies and develop self-esteem. It allows them to form friendships. It teaches girls self-sufficiency, personal autonomy and leadership. Challenging the stereotype that girls are weaker than boys, sport exposes girls to female role models; making goals in other areas of their lives seem attainable.

Sport is a universal language that can help bridge divides and promote the core values necessary for lasting peace. It is a powerful tool to release tension and generate dialogue. One of the benefits of sport is that it brings youth together. Young people can change their attitude by playing sport. Some players who used to be alcoholics, members of gangs and armed forces, have now become sportsmen who are respected and active members in the society. Children who play sport see that interaction is possible without coercion or exploitation. Players interact within a framework of rules; a referee adjudicates on the justness of activity during a game. Penalties exist to sanction transgressions and enable a rapprochement between sporting adversaries.²⁷

To summarize, sport gives people the opportunity to:

- Get together and have fun. Everyone can enjoy the social aspect of taking part in sport, whatever their standard or ability
- Experience success and achievement. Sport gives people the chance to improve their personal performances, fulfill their potential, participate in and win competitions
- Keep fit and healthy. Sport can help physical conditioning, general fitness and well-being
- Learn physical and technical skills. Students can learn about the techniques of various sport and how to improve their current skills
- Develop timing, balance and co-ordination. Sport helps students develop these skills, which will be useful after leaving school
- Improve mental skills. Sport and competition encourages people to develop problem solving and decision-making skills, concentration, determination, control of emotions and commitment
- Co-operate and communicate with others. Training and competing with others (particularly in team events) will encourage students to express and share their feelings with others
- Enhance motivation, organization, leadership and interpersonal skills. Sport can act as a way to develop these skills and take on responsibilities, which can be transferred to other aspects of life in the community.⁹

Generally, we use play, game and sport as synonyms, whereas they differ in the basic objective. Further ahead difference between these concepts is mentioned.

1.2 The Difference between Play- Sport Competitions

Sport involves rules or customs and sometimes competition. Play, especially among children, is any physical activity that is for fun and mere participation. It is often unstructured and free from adult direction. Play is altogether a different thing from sport in the sense that it may include living in a virtual world where there are no predefined rules. This activity is also usually carried out for recreational purposes.

According to Collins dictionary¹¹, Sport means an individual or group activity pursued for exercise or pleasure, often involving the testing of physical capabilities

According to Cambridge dictionary¹⁰, Sport is a game, competition or activity needing physical effort and skill that is played according to rules for enjoyment and/or as a job.

According to Self-Determination theory by Deci & Ryan (1985, 1991)²⁵ children play sport to fulfill three primary psychological needs

1. Need of Autonomy (self sufficiency, independence)
2. Need of Competence (mastering a sport skill)
3. Relatedness to others (playing with likeminded individuals)

1.3 Psychological Needs of Sports Competition¹⁵

Researcher is working as a Psychologist with athletes as well as students since last twelve years. She has realized that competitive adolescent athletes fail to use their mental skills during sports competition time. Similarly, adolescent students fail to use their mental strength during examination time. It is not that they lack mental skills but competitive anxiety overpowers all their mental strength. The following are some mental abilities which need to be given proper attention by adolescent athletes and students.

- Goal Setting
Athletes usually do not set goals for their competition. Even if their coach helps them to set goals, they fail to pursue their goals. For every level of the competition, goals need to be set. Goals require setting in various fields; such as technical, tactical, psychological, fitness, diet, rest and recovery etc. Athlete should be able to set long term, short term as well as daily practice goals. Athlete

should be highly committed to his goals and should be able to carry out the daily demands of his training programs.

- Need of Concentration

Distraction is a major barrier of any competitive athlete. Athlete should know what and where he must pay attention to during each game or sport situation. He should learn how to maintain focus and resist distractions, whether they come from the environment or from within themselves. Athlete should be able to regain his focus when concentration is lost during competition. He should learn how to play in the “moment”, without regard to either past or anticipated future events.

- Imagery

Athlete should prepare himself for competition by imagining himself performing well in competition. He should create and use mental images that are detailed, specific, and realistic. He should use imagery during competition to prepare for action and recover from errors and poor performances.

- Self-Talk

Athlete must maintain his self-confidence during difficult times with realistic and positive self-talk. Talking to self would be like talking to their own best friend. Athlete must use self-talk to regulate his own thoughts, feelings and behaviors during competition.

- Dealing effectively with anxiety and other emotions

Athletes should accept anxiety as a part of sport and realize that some degree of anxiety can help them perform well. Athlete should know how to reduce anxiety when it becomes too strong, without losing their intensity. He must accept strong emotions such as excitement, anger and disappointment as part of the sport experience. Athlete should be able to use these emotions to improve, rather than interfere with high level performance.

It is a proven phenomenon that when a child confronts sport competition or academic competition he/she undergoes different phases of anxiety, stress, worry and concern. This research is an effort to understand sports and academic anxiety, how to deal with this anxiety and how to enhance performance.

Here after, researcher elaborates about conceptual part of anxiety

1.4 Anxiety

1.4.1 Meaning of Anxiety

The Dictionary of the Sport and Exercise Sciences (Anshel, Freedson et al, 1991) defines anxiety as a “Subjective feeling of apprehension or perceived threat, sometimes accompanied by heightened physiological arousal”.

Thus anxiety has a thought component (e.g., worry and apprehension) called cognitive anxiety. It also has a somatic anxiety component, which is the degree of physical activation perceived. Anxiety normally refers to an unpleasant emotional state consisting of apprehension, tension, worry and nervousness associated with activation of body.

According to Cornell University, academic anxiety is a kind of anxiety which relates to the impending danger from the environment of the academic institutions including teacher and certain subjects like Mathematics, Science, English etc. It is a mental feeling of uneasiness or distress in reaction to a school situation that is perceived negatively.

1.4.2 The main causes of Anxiety

(A) Competition Anxiety

Literature indicates that, sports provide challenges and stimulation. At the same time, it also provides considerable uncertainty. At the precise moment the Olympic archer releases an arrow, or the rugby player kicks for the goal, the outcome is unknown. The stress that sport provides therefore is inevitably linked with its inherent uncertainty. Sport is a cultural focal point because it is a theatre of unpredictability. Uncertainty of outcome and importance of outcome are the two constructs that impact a person's perception of threat, which in turn impacts the level of anxiety.

While stress and uncertainty may motivate some athletes, they induce anxiety in others. There are some distinct factors that can increase athletes' level of anxiety. For example, more the importance of the contest, greater will be the stress, resulting in the likelihood that a competitor will be prone to anxiety.

Also, spectators can have a huge impact on how athletes feel. In fact, studies of the home advantage phenomenon show that teams playing at their home venue win on average, around 56-64% of the time, depending on the sport. The impressive medal count of host nations during Olympic Games is also notable, in particular the record-breaking haul of medals won by Australia in Sydney, 2000 and by Greece in Athens, 2004.

Participants in individual sports have been shown to generally suffer more anxiety before, during and after competition than participants in team sports. This is because the sense of isolation and exposure is much greater in sports such as triathlon, tennis and snooker than in the relative anonymity of field sports.

For athletes in high-contact sports such as boxing and martial arts, the possibility of getting hurt can also be a source of anxiety. Typically, this anxiety causes some critical changes in technique. For example, anxious boxers will often lean too far forward, be clumsy in their leg movements or fight defensively, any of which may result in them getting knocked out.

An additional factor that causes anxiety is the expectation of success. The expectations held by British tennis fans for Tim Henman and Greg Rusedski to win the men's singles title at Wimbledon have hung over these players like a dark cloud. Some athletes rise to the challenge imposed by public expectation while others can choke.

B) Academic Anxiety

Academic Anxiety results from several common causes, some of them have been listed below:

- Being afraid that you won't live up to the expectations of important people in your life; worrying that you will lose the affection of people you care about if you don't succeed
- Believing grades are an estimation of your personal worth
- Placing too much emphasis on a single test or single topic/subject
- Giving in to guilt feelings or anxiety as a result of inadequate preparation for tests

- Feeling helpless, believing that you have no control over your performance or grades
- High Expectations

In short, giving too much importance to others expectations and making yourself unhappy, leads to anxiety and worry.

C) Grades and Self-Esteem

Failing a test or getting a low score in an exam for some students translates into feelings of “I’m stupid” or “I don’t have what it takes to be a physician”. These feelings may lead to a loss of self-esteem and more anxiety. One real value of appearing in an exam is that it gives you an opportunity to find out what information you understand well enough to associate with material that you will learn later. Before your next exam, you can give this material a quick review. Mistakes in an exam pinpoint area that you need to study thoroughly for the next exam.

D) Feeling of Helplessness

If you have an external locus of control, you may not see the connection between study and grades. You may become anxious because you cannot predict the outcome of a test. Even if your locus of control is internal, you may feel temporarily helpless in a testing situation when you know you have not studied enough. Feeling guilty for not meeting your responsibilities may cause you to experience test anxiety.

Paul D. Nolting, Ph.D²³, mentions in his ‘Math Study Skills Workbook, Your Guide to Reducing Test Anxiety and Improving Study Strategies’, some important causes of academic anxiety.

They are listed below:

- Test anxiety is a learned behavior.
- The association of grades and personal worth causes test anxiety.
- Test anxiety can come from a feeling of a lack of control.
- Test anxiety can be caused by a teacher embarrassing a student.
- Being placed into a course above your ability can cause test anxiety.

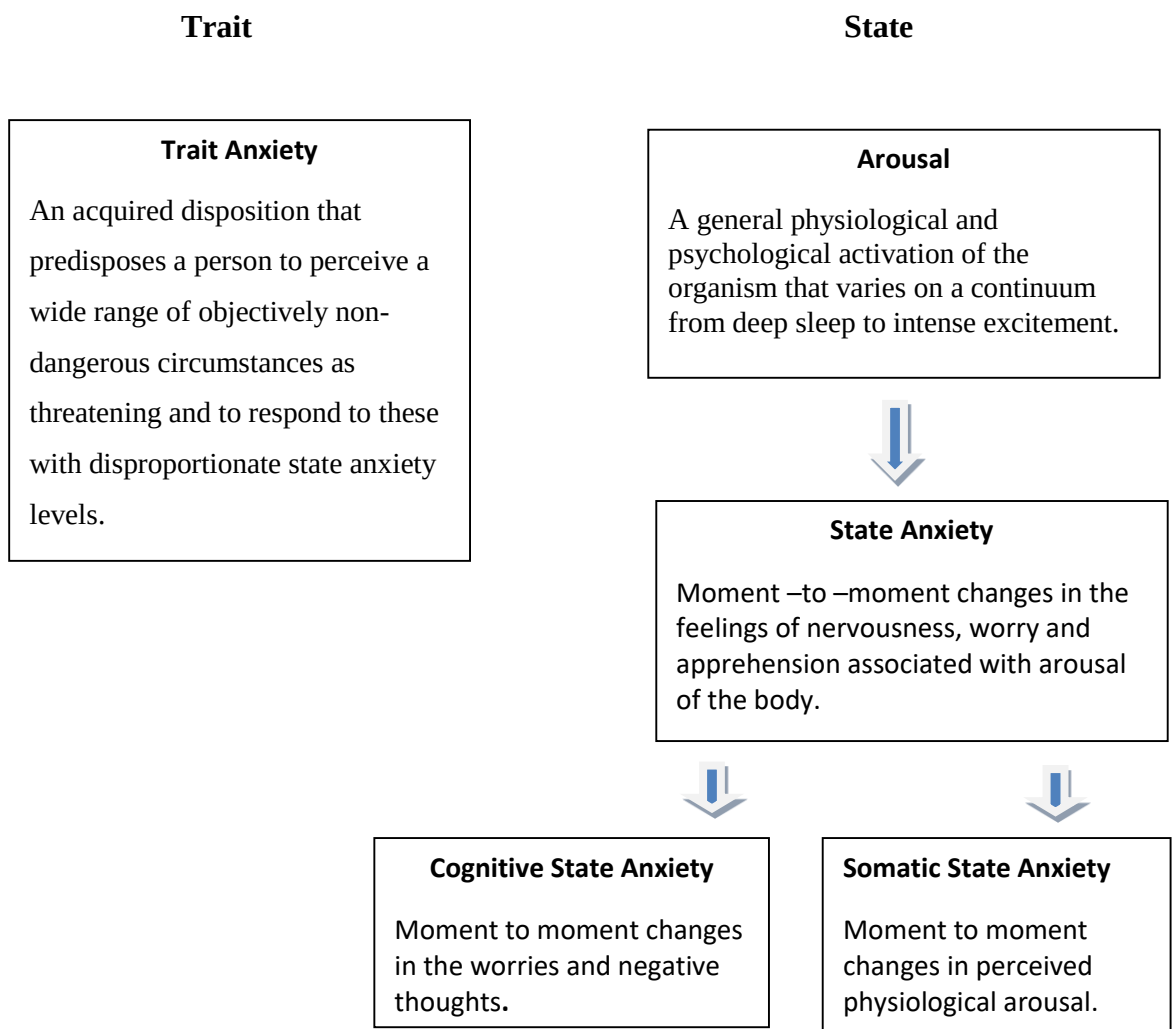
- Test anxiety develops from fear of alienation from parents, family, and friends due to poor grades.
- Test anxiety can be caused by timed tests and the fear of not finishing the test, even if one can do all the problems

Educational Psychology gives us the theoretical framework for the concept -anxiety. Further are types of anxiety with its brief description.

1.5 Types of Anxiety: -

The figure below explains relations between trait and state anxiety.

Figure 1.1 Relation between Trait, State, Cognitive and Somatic Anxiety



(Source: Weinberg Robert, Page no 80²⁵)

1.5.1 State and Trait Anxiety¹⁷

State Anxiety – Cattell and Scheier (1961) have been credited with first differentiating between state and trait aspects of anxiety, resulting from a series of factor analytic studies they conducted. Following their lead, Spielberger (1966) developed the State-Trait Anxiety Theory, which provide a general framework for examining the major variables that comprise anxiety.

At times we refer to anxiety in discussing a stable personality component; other times we use the term to describe a changing mood state. State anxiety refers to the ever changing component. Spielberger, 1966 defined state anxiety as, ‘characterized by subjective, consciously perceived feelings of apprehension and tension, accompanied by activation of autonomic nervous system’.

Cognitive state anxiety concerns the degree to which one worries or has negative thoughts. Whereas, Somatic state anxiety concerns the moment to moment changes in perceived physiological activation. Somatic state anxiety is not necessarily a change in one’s physical activation but rather one’s perception of such change.

Trait Anxiety – Trait Anxiety is part of the personality, an acquired behavioral tendency that influences behavior. In particular, trait anxiety predisposes an individual to perceive as threatening a wide range of circumstances that actually are not dangerous physically or psychologically. The person then responds to these circumstances with state anxiety reactions that are disproportionate in intensity to the objective danger.

1.5.2 Cognitive and Somatic Anxiety ¹⁷

Educational psychologists Liebert and Morris (1967) were the first to draw a distinction between worry and emotionality or, as they are generally termed, cognitive anxiety and somatic anxiety. Cognitive anxiety is manifested in persistent worries and ruminations and an inability to concentrate. Somatic anxiety is reflected in responses such as rapid heart rate, shortness of breath, clammy hands, butterflies in the stomach and tense muscles. Research shows that cognitive and somatic anxieties are likely to vary. Martens et al. (1990) argued that many situations elicit both cognitive and somatic elements of anxiety. For example, an athlete or a student may exhibit conditioned

somatic responses to a particular environment. The conditioned response may then trigger the athlete or a student to start worrying. In contrast, Hatfield and Landers (1983) proposed that many individuals are primarily either cognitive ‘responders’ or somatic ‘responders’.

Cognitive Anxiety is the ‘Mental component of anxiety and is caused by negative expectations about success or by negative self evaluation’. (Martens et al. 1990)

Somatic Anxiety is the ‘Physiological and affective elements of anxiety’. (Martens et al. 1990)

1.5.3 Symptoms of Cognitive and Somatic Anxiety²⁸

- Cold clammy hands
- Need to urinate frequently
- Profuse sweating
- Negative Self-talk
- Dazed look in the eyes
- Increased muscle tension
- Butterflies in the stomach
- Feeling ill
- Headache
- Dry mouth
- Inability to concentrate
- Stomachache
- Muscle aches
- Increased heart rate
- Rapid breathing/Hyperventilation
- Shaking
- Nausea
- Fear
- Unease
- Confusion
- Consistent better performance in non-competitive situations

1.5.4 Sources of Anxiety²⁸

A) Situational sources

(a) Event Importance- In general, more important the event, more is the anxiety provoking it, just as taking an S.S.C board exam is more stressful than taking a class test. The importance placed on an event is not always obvious. However, an event that may seem insignificant to most people may be very important for one particular person.

(b) Uncertainty- Uncertainty is a major situational source of stress; the greater the uncertainty, the greater the stress. Often we cannot do anything about uncertainty.

B) Personal sources of Anxiety

(a) Trait Anxiety –Trait anxiety is a personality factor that predisposes a person to view competition and social evaluation as threatening. A highly trait-anxious person perceives competition or examinations as more threatening and anxiety provoking than low trait-anxious person does.

(b) Self-Esteem- Self-esteem is also related to perceptions of threat and corresponding changes in state anxiety. Athletes and students with low self esteem have low confidence and experience more state anxiety than athletes and students with high self-esteem.

(c) Social Physique anxiety- Social physique anxiety is a personality disposition defined as ‘the degree to which people become anxious when others observe their physique’. It reflects peoples’ tendency to become nervous or apprehensive when their body is evaluated. People with this kind of anxiety experience more negative thoughts about their bodies. These individuals are likely to avoid fitness settings fearing other’s evaluation about their physique.

1.5.5 Anxiety an important emotion in Academics and Sport¹

The ability to cope with pressure and anxiety is an integral part of sports, particularly among elite athletes (Hardy, Jones, & Gould, 1996; Orlick & Partington, 1988). Researchers have reported that over 50 of their consultations among athletes at an Olympic festival were related to stress or anxiety related problems (Murphy, 1988). A

great deal of research has been conducted examining the relationship between anxiety and performance within the field of athletics. A great deal of research has been devoted to the effect of anxiety on sports performance. Researchers have found that competitive state anxiety is higher for amateur athletes in individual sport compared with athletes in team sport (Simon & Martens, 1977). In addition, participants in individual non-contact sport have been found to report lower levels of state anxiety than participants in individual contact sport (Lowe & McGrath, 1971). Anxiety is a fundamental part of the sport experience for many athletes. McHale et al. mention aspects of anxiety, such as trait anxiety, anxiety management, crowd effects and behavioral anxiety. Anxiety remains a challenge because, despite impressive advances in conceptual understanding, there exists a gulf between knowledge gathered from research and the delivery of treatments to anxious athletes. Despite the vast amount of accumulated research examining the structure of anxiety, we still cannot confidently predict performance based on current theories and measures of anxiety, or ensure that athletes can enjoy the experience of competing free from overpowering and unpleasant anxieties. In wider context, anxiety and stress also affect many students, public speakers and performing artists.

The pressure to perform well academically is a strong predisposing factor for Depression, Anxiety and Stress (DAS) among students. This is also bolstered by our finding that all of these negative states were significantly higher among the students who had lower academic marks in their last school exam. An interesting finding was that DAS were more among the students taking tuitions for any subject compared to those who were not, irrespective of the academic level. This could also be reflective of parental pressure (or own perceived pressure) to improve their academic showing in the form of better marks. Bayram and Bilgel (2008) too had found that students who were satisfied with their education had lower DAS scores than those who were not satisfied. Recent adverse life events (ALE) such as death of a family member, accident, illness in family etc are bound to have an effect on the DAS levels among the young adolescents, as was seen in the present study. It points to the fact that special care and support is needed for students who have had recent adverse events. Both the family and the school authorities are required to be sensitive to the needs of such children for prop up and guidance. Parent-adolescent relationship is a strong bulwark for the adolescents during this delicate period of major changes in their life. The various domains (DAS)

that we examined were found to be higher among students whose parents frequently pressurized them to study, whose parents fought amongst themselves, or whose parents inflicted physical violence on their children. DAS were also higher among the students who did not discuss their personal problems with their parents.

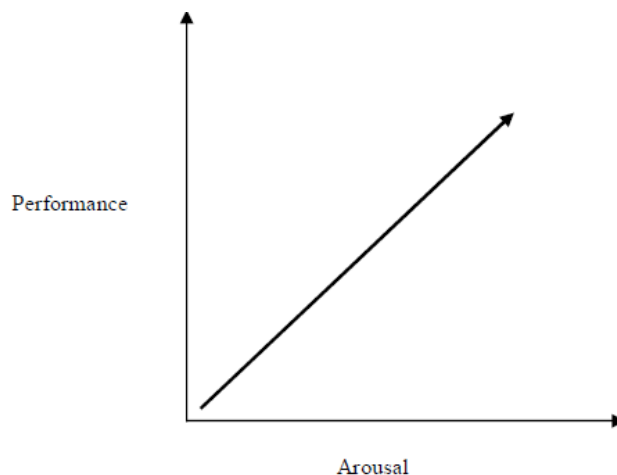
The home environment affects the level of academic anxiety of the adolescents. It is the duty of the parents to provide a pleasant environment to the adolescents, so that adolescents can openly discuss about their educational as well as emotional problems to them. The children of this age need a healthy environment at home. A “Healthy” home involves a sound emotional environment. Effective communication among family members, the willingness to compromise, and strong conflict-resolution skills can help foster an environment of mental well-being for everyone. Stress-management skills, including simple relaxation exercises, can be learnt and practiced by everyone. Those with children at home know that achieving healthy parent-child relationships is crucial for a healthy home environment. Healthy parenting skills can also be learnt and practiced to reduce stress in the home for both parents and children. When these are present, children feel free to express themselves and explore their physical, intellectual and social environments. When these are absent, the child’s ability to grow physically, mentally and emotionally is stifled.

1.6 Theories of Anxiety¹⁸

Researcher has further tried to explore some important theories of Anxiety.

1.6.1 Drive Theory – Developed by Hull (1943), and later modified by Spence and Spence (1966), Drive theory predicts that athletes' performance on a task is a function of their arousal multiplied by how well they have learned the task. Performance on simple or well-learned tasks is predicted to be best with a higher level of arousal. This relationship is illustrated in the following figure.

Figure1.2 : The relationship between performance and arousal as predicted by drive theory.

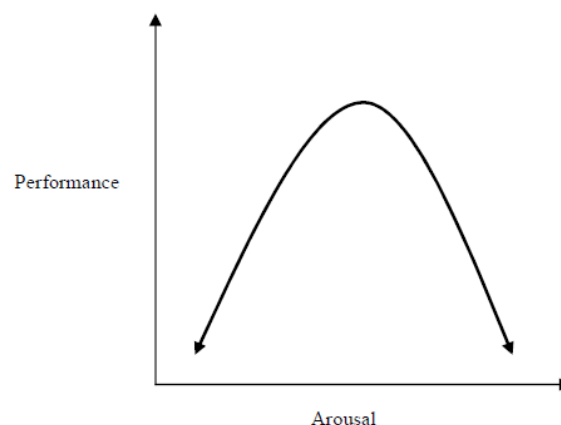


Psychologists first saw the relationship between arousal and performance as direct and linear (Spence and Spence, 1966). According to this view, called Drive Theory, as an individual's arousal or state anxiety increases, so too does her performance : The more psyched up an athlete becomes, for example, the better that individual performs. Most athletes, of course, can also remember situations in which they become overly aroused or anxious and then perform poorly. So, little scholarly support exists for the drive theory. Although, the drive theory explains that as arousal and anxiety increases, performance increases in a straight line. If this were true, we would expect highly skilled athletes to consistently excel in all high pressure situations. Yet nervousness and choking in the clutch occur even at the elite level.

1.6.2 Inverted- U Hypothesis- With its origin in the work of Yerkes and Dodson (1908), the Inverted-U hypothesis posits that for every type of behavior there exists an optimal level of arousal, usually of moderate intensity, that produces maximum performance.

Dissatisfied with the drive theory, most psychologists turned to the inverted U hypothesis to explain the relationship between anxiety and performance. This view holds that at low anxiety levels, performance will be below par: athletes are not psyched up. As anxiety increases, so too does the performance- up to an optimal point where best performance results. Further, increase in anxiety cause performance to decline. So this view is represented by an inverted U that reflects high performance with an optimum level of anxiety and lesser performance with either low or very high anxiety.

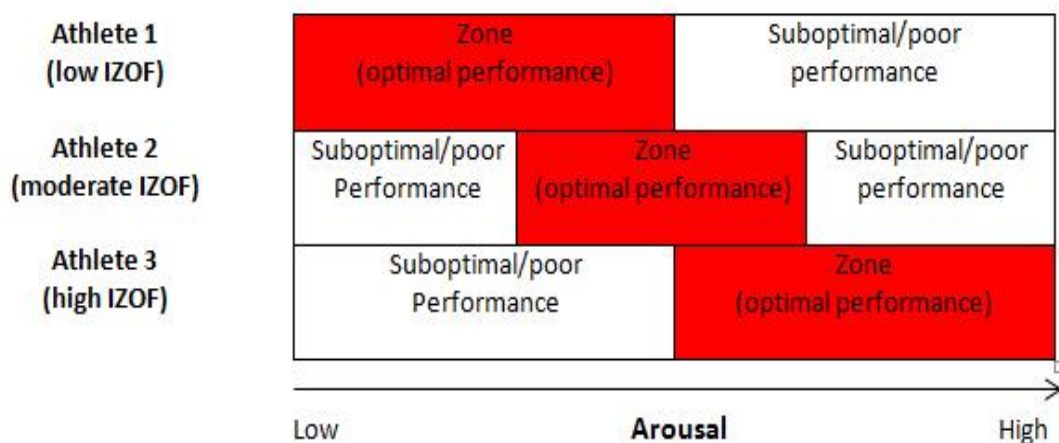
Figure 1.3. The Relationship between Performance and Arousal as Predicted by the Inverted-U Hypothesis.



1.6.3 Individualized Zones of Optimal Functioning (IZOF) - Yuri Hanin (1980, 1986, and 1997) presented an alternative view that he calls the Individualized Zones of Optimal Functioning (IZOF) model. Hanin found that top athletes have a zone of optimal state anxiety in which their best performance occurs, outside the zone, poor performance occurs.

Hanin's IZOF view differs from inverted –U hypothesis in two important ways. First, the optimal level of state anxiety does not always occur at the midpoint of the continuum but rather varies from individual to individual. That is, some athletes have zone of optimal functioning at the lower end of continuum, some in the midrange, and others at the upper end. Second, the optimal level of state anxiety is not a single point but a bandwidth. Thus, coaches and teachers should help participants identify and reach their own specific optimal zone of state anxiety.

Figure 1.4 Athletes' Individual Zone of Optimal Functioning



1.7 Need of the Research in Anxiety

Recent evidence suggests that athletes and students may experience greater levels of stress or anxiety due to the dual demands of athletics and academics placed on them (Wilson & Pritchard, 2005). In today's competitive world, a lot of pressure is placed on athletes and students to perform at the excellence level. Anxiety, as a negative emotion affects perceptions in sport competitions, where a large majority of athletes consider anxiety to be debilitating towards performance, which may result in decreases

in performance (Weinberg & Gould, 2011; Raglin & Hanin, 2000). Many researches showed that winning in a competition depend on how an athlete can control their anxiety level.¹²

Utilizing Anxiety Management techniques help adolescent athletes as well as students acquire coping skills needed to manage anxiety. This will help them to negotiate many challenges they face as students and athletes. Thus, one would hope their athletic performance, as well as academic performance would be enhanced.

Sample was selected from the age group of 13 years to 15 years. Athlete generally starts his/her sports training by the age of 9 or 10 years. In next 3-4 years, when child is 13-14years old he/ she start playing in the sports competition. At the same time he/she is pursuing his academics also. In many incidences researcher has observed and experienced that many good athletes leave sport as they are not able to handle the stress of performing in the sports and preparing for board exams in parallel. As they cannot balance both, they sacrifice sports. This was the reason for involving adolescents as sample in this research study. According to child psychology, adolescence is 'a period of great strain, stress and storm and friction. At this stage of life, adolescents are confused about various hormonal changes taking place in their body. Academically this stage is important in their life, as important career related decisions need to be taken and hence these adolescents are found to be more anxious.

The current study investigated the effects of anxiety management training. This training is designed to develop coping skills needed to reduce anxiety and to cope with a variety of stressors in both sport and the academic life of adolescent athletes and students. The long-range goal was to provide the environment for successful outcomes in both athletic and academic performance.

This study attempts to show that athletes who participated in the anxiety management workshop developed greater coping skills and reported a greater decrease in anxiety, resulting in a higher level of academic performance as compared to athletes who did not participate in the training.

1.8 Statement of Problem is as follows-

- Conducting a Survey of Cognitive and Somatic Anxiety among adolescent competitive athletes in Pimpri Chinchwad Municipal Corporation, a suburb of Pune.
- Developing Anxiety Management Training Program for adolescent Athletes and testing its effectiveness.

1.9 Aim and Objectives

1.9.1 Aim

To study the effectiveness of anxiety management techniques of sports athletes.

1.9.2 Objectives

- 1) To study the status of cognitive and somatic anxiety among adolescent competitive athletes in P.C.M.C (Pimpri-Chinchwad Municipal Corporation) area.
- 2) To design anxiety management training program for adolescent athletes.
- 3) To test the effectiveness of anxiety management training program for adolescent athletes.
- 4) To understand the effect of anxiety management training on the academic performance of adolescent athletes.

1.10 Research Questions

1. What is the intensity of cognitive and somatic anxiety of adolescent athletes?
2. What is the effect of anxiety on adolescent athletes'?

1.11 Hypotheses-

1. There will be significant difference in pre test and post test scores of Somatic anxiety level in the experimental group.
2. There will be significant difference in pre test and post test scores of Cognitive anxiety level in the experimental group.
3. There will be significant reduction in post test scores of Somatic anxiety level in experimental group than the control group as compared to the pre-test score.
4. There will be significant reduction in post test scores of Cognitive anxiety level in experimental group than the control group as compared to the pre-test score.
5. There will be significant difference in the difference of pre test and post test scores of total anxiety level of the Experimental group and the Control Group.
6. There will be significant difference in the difference of pre test and post test scores of Somatic anxiety level of the Experimental group and the Control Group.
7. There will be significant difference in the difference of pre test and post test scores of Cognitive anxiety level of the Experimental group and the Control Group.
8. There will be significant difference in the post test scores in the academic performance of the experimental group than the control group as compared to the pre-test scores.

1.12 Variables

The following variables are found in the present research study.

1.12.1 Independent Variable- In this research study, ‘Anxiety Management Training Program’ is considered as an independent variable as this training program is supposed to be responsible for bringing about change .

1.12.2 Dependent Variables – In this research study, ‘Cognitive and somatic anxiety level of adolescent athletes’ is considered as dependent variable as it is the outcome of the change brought about by introduction of an independent variable.

1.12.3 Extrinsic Variables- In this research study, ‘Environment at sport competition, coaching strategies of coaches, fatigue of the participants, interaction of athletes with coaches and their parents, diet of student athlete’ are considered as extrinsic variables as the above mentioned factors operating in real life situation may affect changes in on the dependent variables. These factors are not measured in the study, may increase or decrease the magnitude of the relationship between independent and dependent variables.

1.13 Conceptual Definitions

The terms defined conceptually and their conceptual definitions are given below.

1.13.1 Adolescent: Girls and boys between age group of 13 to 18 years of age are considered to be adolescents. According to Cambridge Advanced Learner’s Dictionary, “Adolescent is a young person who is developing into an adult”.

1.13.2 Athlete: A person who is proficient in sports and other forms of physical exercise. According to Cambridge Advanced Learner’s Dictionary, “Athlete is a person who is very good at sports or physical exercise, especially one who competes in organized events”.

1.13.3 Anxiety: The Dictionary of the Sport and Exercise Sciences (Anshel, Freedson et al, 1991) defines anxiety as a “Subjective feeling of apprehension or perceived threat, sometimes accompanied by heightened physiological arousal”.

1.13.4 Academic Performance: According to www.researchgate.net, Academic Performance of athletes is basically an achievement of what has been learnt in learning institution. Academic Performance is measured by the evaluation of how much has been achieved over a certain period of time.

1.13.5 Cognitive Anxiety: Negative expectations and cognitive concerns about oneself, the situation at hand and potential consequences. (Morris, Davis and Hutchings, 1981)

1.13.6 Sport- According to oxford Dictionary, Sport is an activity involving physical exertion and skill in which an individual or team competes against another or others for entertainment.

1.13.7 Somatic Anxiety: The physiological and affective elements of anxiety. It is reflected in rapid heart rate, clammy hands, and tense muscles.

1.14 Operational Definitions

The terms defined operationally and their operational definitions are given below.

1.14.1 Adolescent- An athlete or student (boy or a girl) of an age group of 13 to 15 years of age.

1.14.2 Sport- Sport is an activity involving physical exertion and skill. In this research ‘sport’ means athletics, Kabaddi, wrestling, mallakhamb, and yoga.

1.14.3 Athlete- An adolescent boy or a girl practicing or performing sporting activity

1.14.4 Anxiety- Scores of Cognitive and Somatic Anxiety acquired by CSAI-2

1.14.5 Anxiety Management Training Program: A training program developed and executed by researcher in which, set of skills are taught to help adolescent athletes to manage their competitive and academic anxiety.

1.14.6 Cognitive Anxiety- Cognitive Anxiety is that anxiety which is measured by test CSAI-2.

1.14.7 Somatic Anxiety- Somatic Anxiety is that anxiety which is measured by test CSAI-2

1.14.8 Academic Performance- Academic Performance is the performance of athletes which is measured by continuous unit tests and evaluated by respective subject teachers.

1.15 Significance of the Study

The present research outcome will be helpful for the following stakeholders.

1.15.1 Adolescent athletes, students- Heightened anxiety level is the major concern for adolescent athletes as well as students. This anxiety can be major hindrance in their competitive and academic performance respectively. If competitive athletes and

students get trained to manage their anxiety levels, their competitive and academic performance will improve.

1.15.2 Coaches - Coaches do give their helping hand to their students to reduce anxiety. But many times the methods, techniques used by coaches may not be scientific, age proper, and are sometimes subjective. Whereas in the present study; the anxiety management training program is age-specific, scientific and objective in nature.

1.15.3 Teachers- Teacher would genuinely want to help their students to reduce anxiety. As they are not trained, they lack in identifying exact source of anxiety. As teachers would focus more on conservative methods to reduce their wards' anxiety, the effort may become futile. This may de-motivate teachers well as children too. Present study may help teachers to acquire insight to academic anxiety.

1.15.4 Sport Psychologists –It will be very helpful for a sport psychologist to execute a valid, tested anxiety management training program.

Results of the study will help to set a feasible anxiety management training protocol to be used prior to games that will decrease anxiety level; ultimately help to enhance the sports as well as academic performance of adolescent athletes and students.

1.16 Scope, Limitations and delimitations of the Survey

1.16.1 Scope of the Survey

The present survey was conducted in the geographical area of Pimpri Chinchwad Municipal Corporation, a suburb of Pune. Sample selected was from schools which agreed to conduct survey. The target age group of survey is adolescents. Hence, children of age group of 13 years to 15 years were selected.

This survey was conducted in the year October 2014 to January 2015.

1.16.2 Limitations of the Survey

The present survey aimed at understanding anxiety of adolescent athletes, so only adolescent athletes were involved in this survey. Parents, teachers, coaches were not involved in the survey.

Socio-economic background of the adolescent athletes was not taken into consideration.

Dietary habits, choice of game, type of school was not considered while selecting the sample.

1.16.3 Delimitations of the Survey

Researcher conducted survey in the schools from Pimpri Chinchwad Municipal Corporation (PCMC), a suburb of Pune. There are more than five hundred schools in this area. But researcher randomly selected six schools wherein sports activities were given equal importance as to the academics.

1.17 Scope, Limitations and delimitations of the Experimental study

1.17.1 Scope of the Experimental study

This experimental study was conducted in the geographical area of Pimpri Chinchwad Municipal Corporation (PCMC), a suburb of Pune. Sample selected was from a very reputed school. The target age group of this research study is adolescents. Hence, children from age group of 13 years to 15 years were randomly selected. As, researcher wanted to understand intensity of anxiety, survey was conducted.

The present survey was limited to cognitive and somatic anxiety of adolescent athlete students.

1.17.2 Limitations of the Experimental study

Only adolescent athletes were involved in this study as it was not feasible to involve parents, coaches and teachers of the sample group.

Socio economic background of the athlete students was not taken into consideration while selecting the sample. Education of the parents of the athlete students was not taken into consideration.

This program designed only through psychological aspects, no lifestyle managements was included in this training program. Eating habits, diet, choice of game, parenting styles of the parents were not considered while selecting the sample. Researcher feels these are some limitations of the research study.

1.17.3 Delimitations of the Experimental study

Researcher decided to implement Pretest Post test experimental design to understand effects of Anxiety Management Training Program. Sample which was selected for the experimental and control group was from a reputed school from Pimpri Chinchwad Municipal Corporation (PCMC), a suburb of Pune. This school was selected by researcher as the required sample was easily available for the experimental study.

1.18 Organization of the Research Report

In Chapter one, researcher is illustrating theoretical framework of Anxiety and different parameters of anxiety such as, cognitive and somatic anxiety.

In Chapter two, researcher has reviewed Anxiety related literature.

In Chapter three, researcher has given details of research methodology she has utilized in the present research study.

In Chapter four, researcher has explained actual experiment which was conducted on experimental group. Session wise planning and report is presented in this chapter.

In Chapter five, quantitative data which was gathered from experimental and control group in interpreted and analyzed.

In Chapter six, summary of research study has been presented.

-X-X-X-

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CHAPTER 2

REVIEW OF RELATED LITERATURE

2.1 Introduction

In the first chapter, the development of the research problem was elaborated. It is an important step to take a review of the research journals, books, dissertations, thesis and other sources of information on the problem to be investigated. Such review helps in avoiding duplication of work and also provides new insight into planning and execution of research to be carried out.

The related research provides the researcher with a framework within which researcher can understand findings. It gives the researcher complete and thorough information about the work done in the country and abroad, in the specific area of the research. It also helps the researcher to understand Research Methodology, tools, sample and techniques of analysis. The important specific reason for reviewing the related research is to understand the recommendations of previous studies for further research which they have listed in their thesis.

The research for reference material is a time consuming but fruitful phase of the research program. Familiarity with the literature in any problem area help the student to discover what is already known, what others have attempted to find out, what methods have been used, and what problems remain to be solved.

Literature in any field forms the foundation upon which all future work will be built. Review of literature is generally used as a basis for inductive reasoning for locating and synthesizing all the relevant literature on a particular topic.

A serious and scholarly attempt has been made by the researcher to go through the related literature.

2.2 Organization of the Chapter

- Sources of data
- Identification of related Literature
- Learning from Primary sources of anxiety related literature
- Secondary Sources of information-

- Review of Some Important Anxiety Reduction Training Models
- Role of Relaxation Therapies in reducing Anxiety
- Role of yoga in reducing anxiety
- Learning from Secondary sources of anxiety related literature
- Review of related literature and researches
- Contribution of the present research

2.3 Sources of Data

Data for the research was obtained from the following sources:

1. Tilak Maharashtra Vidyapeeth Library, Pune
2. Department of Physical Education, Savitribai Phule Pune University, Pune
3. Jnana Prabodhini Library, Pune
4. Jnana Prabodhini Navanagar Vidyalaya Library, Nigdi Pune
5. Institute of Psychological Health Library, Thane
6. [www.Athletic](http://www.AthleticInsight.com) Insight
7. <http://shodhganga.inflibnet.ac.in/>

Reviewing related literature gives direction to the proposed study. The following table is an overview of the researcher's review of anxiety related literature

Table 2.1 Overview of review of related literature

No	Description	Number
1	Books	12
2	Periodicals	2
3	Research articles	45
4	Conceptual Articles	5
5	Ph D Thesis	5
	Total	69

2.4 Identification of related literature

The first step in reviewing the related literature is the identification of the related literature that is to be read, understand and evaluate. The identification can be made through the use of primary and secondary sources available in the library.

Primary sources are information collected by the researcher specifically for a research assignment. They are in the form of Research Methodology, tools, sample, analysis, findings and contribution to the present information. Such sources provide more information about a study than can be found elsewhere. Primary sources give the researcher a basis on which to make his own conclusion and understanding of the study.

Although going through such sources is a time taking process for the researcher, yet they make available a good source of information on research.

As per objectives of the present study, a number of research on the following themes were reviewed. They are as follows:

1. Reviews related to Anxiety and its effect on academic performance
2. Reviews related to Anxiety and its effect on competitive performance
3. Reviews related to psychological skills involved in the Psychological training for Anxiety management. (e.g., goal setting, imagery, positive self-talk, emotion regulation, relaxation etc.)
4. Goal setting and Academic Anxiety
5. Goal setting and Sport Performance
6. Usage of self-talk and Academic anxiety
7. Self-talk and sport performance
8. Imagery and academics
9. Imagery and sport performance
10. Emotion regulation in academics
11. Emotion regulation in sport
12. Reviews related to cognitive and somatic anxiety and its effect on competitive performance
13. Reviews related to the psychological tool (CSAI-2) which was used by the researcher herself for data collection
14. Reviews related to Anxiety/stress management techniques for students

15. Reviews related to study of Yoga to manage anxiety, mood fluctuation.

2.5 Learning from Primary Sources of anxiety related literature.

Researcher reviewed research in the following fields:

- Academic Anxiety
- Cognitive and Somatic Anxiety
- Stress and Anxiety faced by adolescents
- Sources of stress and Anxiety
- Need, content, execution and testing effectiveness of Psychological Training Program
- Effect of Yoga on Anxiety.

The following were the learning:

- 1 Lot of conceptual studies and researches has been conducted so far in the field, but most of the research reviewed are Conceptual studies, Survey researches and Conducting psychological skill training program
- 2 Academic anxiety is affected by socio economic status of the adolescent students
- 3 Girls are academically more stressed than boys.
- 4 Sources of stress and anxiety causing situations should be identified as early as possible.
- 5 Moving beyond basic education (reading and writing) into specific implementation procedures such as Psychological Skill Training (PST) should be introduced at school level.
- 6 Psychological Skill Training (PST) program should be part of basic education.
- 7 While designing Psychological Skill Training (PST), more holistic approach should be adopted. For E.g., personality development program.
- 8 Psychological Skill Training (PST) should consist of relaxation therapies, cognitive restructuring to interpret anxiety as facilitative to academic and sport related performance.
- 9 Need based individualized Psychological Skill Training (PST) should be made available for adolescent students.

2.6 Secondary Sources of information-

In this section, important secondary sources of information are reviewed.

In **secondary sources**, data collected by the researcher are not directly related to the research study.

The author gathers and recapitulates the findings of the work done by others and gives explanation of these findings. From secondary sources of information, researcher tries to understand concepts, theories and different thought processes related to his/her research problem.

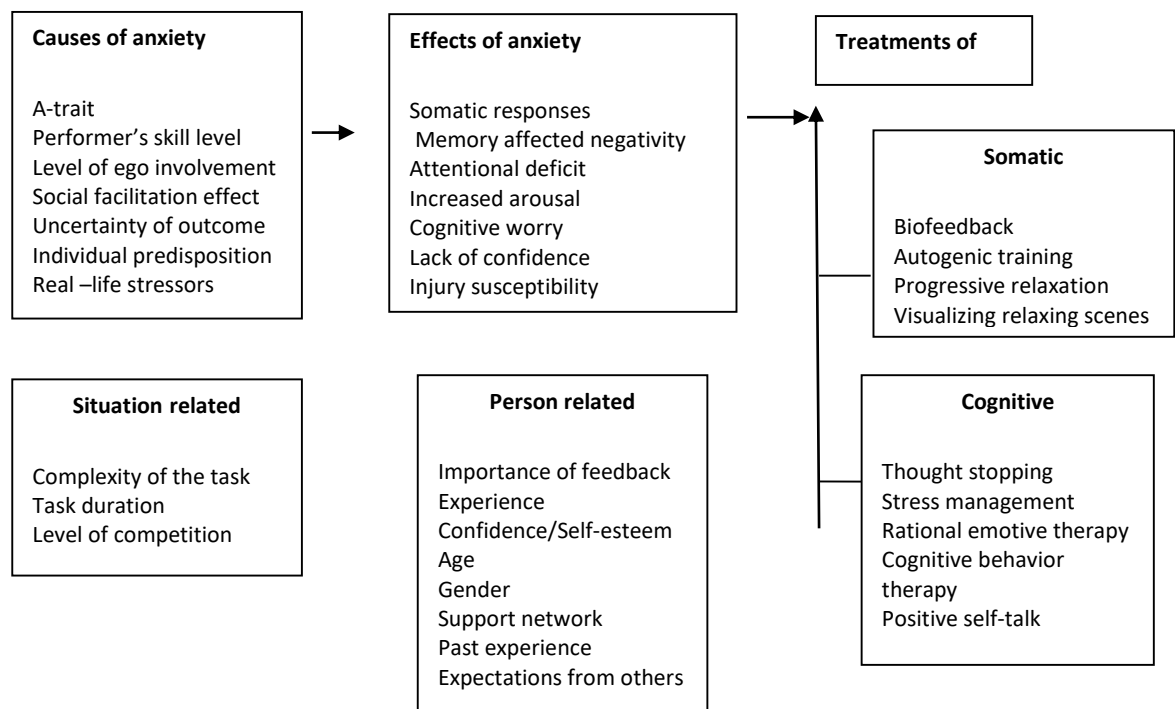
In the present study, researcher designed ‘Anxiety Management Training Program’. Some important anxiety training models are reviewed ahead.

2.6.1 Review of Some Important Anxiety Reduction Training Models

Mahoney and Meyers (1998) suggested that there is considerable room in the treatment of anxiety. Assuming the practitioner correctly diagnoses the source of the anxiety a comprehensive knowledge of anxiety reduction techniques and their deliveries are necessary before selecting ‘the treatment of choice’. The range of cognitive approaches available to practitioners includes rational emotive therapy (Ellis 1970), cognitive behavioral therapy (Beck 1976), systematic desensitization (Wolpe 1958), stress inoculation therapy (Meichenbaum 1985) and stress management training (Smith 1980). Somatic treatments include progressive muscular relaxation (Jacobson 1938), relaxation response (Benson 1975), hypnosis, autogenic training and biofeedback. The wide range of treatments available permits many possible ways to combat anxiety.

The figure below shows an integrated flow diagram of the many variables and factors that relate to the causes, effects and treatment of anxiety.

Figure 2.1: Integrated flow diagram of the many variables and factors that relate to the causes, effects and treatment of anxiety



(Source- Morris Tony, 2014)

1) The Cognitive Mediational Model

Aaron Beck (1984), Albert Ellis (1977), and Richard Lazarus (2000), have given cognitive mediational processes a prominent role in their theories of emotion. These theorists assume that emotional arousal is triggered by thoughts, images and other cognitions rather than being elicited directly by environmental cues. From this perspective, then, a powerful means of reducing maladaptive emotional responses, including anxiety, is to modify the cognitions that elicit emotionality.

- a) **Cognitive restructuring** – This is a method derived from Ellis's (1962) rational emotive therapy. The intervention, directed towards the modification of self-defeating and irrational anxiety- eliciting cognitions, involves four stages.
 - The first step is to help the person recognize his /her beliefs, assumptions, perceptions (i.e., cognitions) facilitates emotional arousal.

These cognitions are over-learned habitual ways of thinking and tend to occur without a person's awareness.

- The second stage involves in recognizing irrational and self-defeating nature.
- In the third phase, a person is helped to actively attack the irrational ideas and replace them with cognitions which prevent/ reduce maladaptive anxiety.
- Finally, the athlete is helped to practice the new modes of thinking and to apply them to the relevant life situations.

Cognitive restructuring approaches are likely to be useful in reducing anxiety in athletes as well as students, particularly those who are fairly insightful and psychologically minded. One could also expect that the modification of key irrational beliefs and self-statements will result in generalization across related anxiety-arousing situations.

b) Self-Instructional training- In *self-instructional training*, Meichenbaum (1985) focused on helping a person develop and use specific task-relevant self-commands that direct attention and enhance performance of the task at hand. A person is trained to:

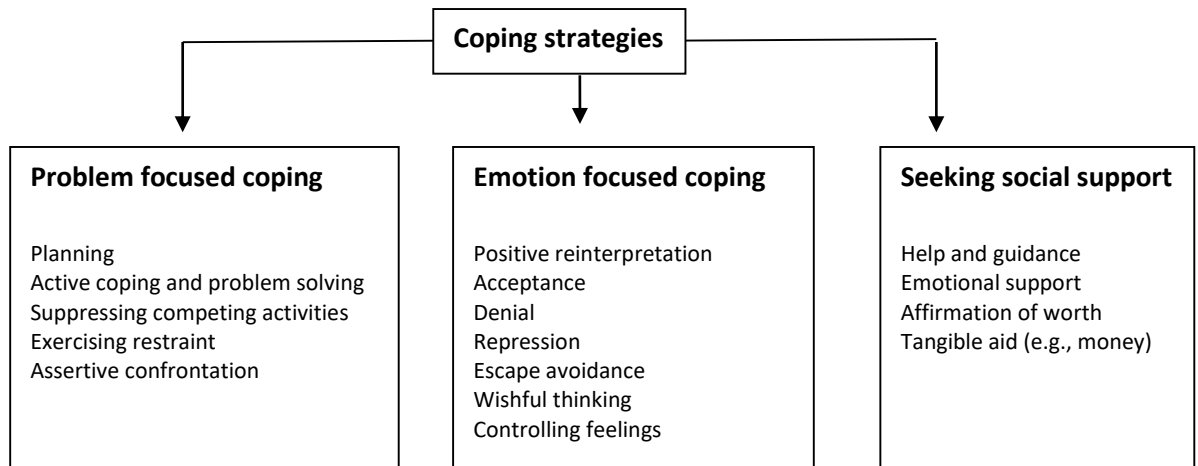
- a. Give themselves adaptive instructions in dealing with preparing for the stressor
- b. Confront and handle it
- c. Cope with feelings of being overwhelmed with anxiety, and
- d. Evaluate and self-reinforce.

2) The Coping Skills Model

Lazarus and Folkman (1984) have described coping as 'constantly changing cognitive and behavioral efforts to manage specific demands that are appraised as taxing or exceeding the resources of a person. There are countless ways that people might respond to a stressor. Factor analysis of coping strategies provide little uniformity in identifying the structure of coping because their results depend on the specific questions which can be analyzed. The figure below presents a conceptual grouping of coping

strategies in three relatively uncorrelated classes, each of which contains more specific coping methods.

Figure 2.2 Different Coping strategies used by athletes



(Source – Morris Tony, 2014)

- a) ***Problem-focused coping strategies*** attempt to confront and directly deal with the demands of the situation, or to change the situation so that it is no longer stressful. For example, signing up for a course in time management in order to deal with time pressures, or engaging extra practice in order to master a physical skill that reduces the demands of the athletic situation.
- b) ***Emotion-focused coping strategies*** attempt to manage the emotional responses that result from it. Some forms of emotion-focused coping involve appraising the situation in a way that minimizes the emotional impact.
- c) ***Seeking social support is*** turning to others for assistance and emotional support in times of stress.

3) **Cognitive-affective stress management training**

This program has been successfully applied to a variety of populations, including test-anxious students (Smith and Nye 1989) and stressed out medical students (Holtzworth and Williamson 1982).

The cognitive-affective program represents an attempt to combine a number of effective clinical techniques into an educational program for self-regulation of emotional responses. These include cognitive restructuring, self-instructional training, somatic and cognitive relaxation skills for arousal control.

The training package can be administered in either an individual or a group format.

This program is divided into five overlapping phases:

- pre-training assessment,
- training rationale,
- skill acquisition,
- skill rehearsal, and
- Post-training evaluation.

4) Psychological Skills Training Program (PST)

Some psychologists have adopted broad perspective while treating anxiety related problems. They have introduced Psychological Skills Training program which has multi-objectives.

Psychological Skills Training refers to systematic and consistent practice of mental or psychological skills for the purpose of enhancing performance, achieving greater sport and physical activity self-satisfaction. The methods and techniques that are standard elements of PST originally came from a wide range of sources, mostly within mainstream psychology. These areas include behavior modification, cognitive theory and therapy, rational emotive therapy, goal setting, attentional control and progressive muscle relaxation. Coaches and athletes all know that physical skills need to be regularly practiced and refined through literally thousands of repetitions. Similar to physical skills, psychological skills such as maintaining and focusing concentration, regulating arousal levels, enhancing confidence, and maintaining motivation also need to be systematically practiced. PST programs can sometimes be comprehensive and involve a variety of skills or they might focus on just one or two skills. Applied sport psychologists have begun to understand that to be effective, psychological intervention must be carried out in an individualized and systematic manner, often using variety of psychological techniques to form integrated program.

2.6.2 Need of Psychological Skills Training

- Athlete walks off a playing field in disgust after losing a game where athlete believed that he should have won.
- Athlete gets choked at a critical point in a competition.
- Athlete feels depressed because he is not recovering quickly enough from an injury.
- Athlete is lacking motivation for exercise.
- Athlete's mind is wandering during competition
- Athlete becomes angry and frustrated with his own performance and puts himself down.

There are chances where competitive athlete has had at least one of the experiences on the above list. Conversely, most sport performers also know what it feels like to be 'in the zone', where everything seems to come together effortlessly and performance is exceptional. Mental and emotional components often overshadow the purely physical and technical aspects of performance.

The importance of mental skills is seen in the highly valued attribute of mental toughness. For example, in a study of elite athletes, Scully and Hume (1995) found that mental toughness was perceived to be the most important determinant of success in sport. In addition, Olympic gold medalists perceived mental toughness as a crucial prerequisite of athletic success (Gould et al 2002). Although mental toughness is defined in different ways, it usually has to do with an athlete's ability to focus, ability to rebound from failure, ability to cope with pressure, determination to persist in the face of adversity and mental resilience (Bull, Shambrook et al 2005; Jones, Hanton 2002; Thelwell et al 2005). Because mental toughness is perceived to be critical for athletic success and Mental Skills Training targets building and developing these mental skills, the importance of Mental Skills Training is obvious.

2.6.3 Importance of Psychological Skills Training

When the child acquires skills in some particular sport, he/she eventually enters into competitive sport. Then the entire scenario changes for the child, until now sport was only for enjoyment, but now it's a competition and playing in a competition is a contest

between individuals or groups for resources, goals, prestige, recognition or awards. It is a known fact from literature that if young athletes are psychologically prepared they would easily take over when the old players retire. Research literature have identified a number of benefits with mental skills training while preparing athletes for competition and improving their quality of life. Mental preparation is the cognitive rehearsal of a physical skill without movement (Jacobs, 2002). The best practice to performance is through mental preparation. Mental preparation is the segment of sports psychology that concentrates specifically on helping athletes break through the barriers that are keeping them from performing optimally. Athletes are more likely to embrace mental training when they understand it and its benefits. However, the best way for athletes to embrace mental training is when they actually experience its power firsthand. Mental preparation is about improving ones attitude and mental skills to help perform at best by identifying limiting beliefs and embracing a healthier philosophy about one's sport. Mental skills, just like physical skills, takes repetition, practice, and game-time application to develop. Helping athletes and coaches understand the mental barriers to excellent performance and the benefits of sports psychology intervention is a critical step in the mental training process. Athletes can overcome these barriers through sport psychology intervention that aim to enhance confidence, focus, composure, trust and mental preparation.

2.6.4 Three phases of PST program –

Although PST programs take many forms to match participant's needs, they generally follow a set of three distinct phases: education, acquisition, and practice.

- (a) Education Phase:** Because many sport participants are unfamiliar with how mental skills can enhance performance, the first phase of any PST program is educational. The following topics are discussed in this phase:
 - Importance of PST program for athletes
 - Explaining various concepts involved in the PST with proper examples
 - Increasing awareness of the role of mental skills in athlete's competitive performance
- (b) Acquisition Phase:** This phase focuses on strategies and techniques for learning the various psychological skills.

- (c) **Practice Phase:** The practice phase has three primary objectives:
- a. to automate the skills through over learning
 - b. to teach athletes to systematically integrate psychological skills into their performance situations, and
 - c. To simulate skills athletes will want to apply in actual competition.

2.6.5 When to implement PST program- It is best to initiate a PST program during the off-season or preseason. When there is more time to learn new skills and athletes are not pressured about winning. Mental training is an ongoing process that needs to be integrated with physical practice over time. It is recommended not to start PST program in the middle of the season. Sometimes coaches are desperate to find solution, but mental training in such situation is rarely effective. Athletes cannot expect to learn new psychological skill overnight.

2.6.6 Brief description of psychological skills-

- **Goal Setting:** Goal setting is commonly used for enhancing motivation and for focusing attention upon the aspects of performance that are most in need of improvement. The establishment of a goal setting program often includes several common components, including identifying target dates for attaining goals, identifying goal achievement strategies, and providing regular goal evaluation.

The most commonly accepted definition of a goal was proposed by Locke, Shaw et al (1981) who characterized a goal as attaining a specific level of proficiency in a task, usually within a specified time limit. (Weinberg Robert- Goal Setting Practices for Coaches and Athletes -Tony Morris editor)

- **Positive Self-talk:** Self-talk is what you say or think to yourself. Self-talk patterns are related to how people feel and act. Changing self-talk is commonly used for 1) prompting a specific behavior, 2) improving self-confidence, 3) attention control, 4) motivation, and 5) arousal control. Common components include the identification of negative or irrelevant

thoughts, challenging these thoughts, the creation of positive thoughts, and the substitution of positive thoughts for the negative thoughts.

- **Concentration:** According to **Moran** (2003) concentration refers to a person's ability to exert deliberate mental effort on what is most important in any given situation. It is a conscious experience of orienting mental effort when perceiving information selectively.
- **Imagery-** Imagery in the context of sport, may be considered as the creation or re-creation of an experience generated from memory, which may occur in the absence of the real stimulus antecedents normally associated with the actual experience.
- **Emotional Management-** The ability to be open to feelings and to modulate those emotions in oneself and others so as to promote personal understanding and growth.
- **Relaxation** a pleasant activity that makes you calm and less worried

2.6.7 Role of Relaxation Therapies in reducing Anxiety

The World Health Organization estimates that 80% of the world population, or about 3 billion people, rely on traditional or "alternative" medicine. Alternative healing does not ignore the importance of allopathic knowledge. Allopathic treatment may be superior for the treatment of some conditions. Rather, a major thrust of integrative medicine is that non-invasive and natural treatments be explored as well. A recent survey revealed that relaxation therapies were used in treating eleven of the top fourteen most frequently reported medical conditions including back pain, fatigue, head ache and high blood pressure. Relaxation therapies tend to be less invasive, economical and have fewer side effects compared to current traditional options.

Applied Sport Psychology, in its efforts to enhance the competitive performance of athletes, has traditionally utilized cognitive behavioral methods and techniques with an emphasis on developing self-control of internal states, commonly referred to as psychological skills training (Whelan et al., 1991).

Historically, efforts to enhance athletic performance have been most clearly related to the development of social cognitive theory (Bandura, 1977) and early skills training models of cognitive-behavioral interventions. From this perspective, athletes develop and utilize psychological skills such as goal setting, imagery/mental rehearsal, arousal control, self-talk, and precompetitive routines as vehicles to aid in the development of self-control of internal processes such as thoughts, emotions, and bodily sensations, in an attempt to create the ideal performance state (Hardy et al., 1996).

There has been tremendous progress in the non-pharmacologic treatment of anxiety disorders (Barrows and Jacobs, 2002). Cognitive-behavioral therapies reflect a recent integration of the cognitive theories and methods invented by Aaron T. Beck and Albert Ellis, and behavioral theory based on the work of B.F. Skinner and Ivan Pavlov. Relaxation therapy is a behavioral approach which emphasizes the development of a relaxation response to counteract the stress response of anxiety.

Relaxation techniques have been used in sports primarily to enhance recovery from training and competition, manage anxiety and improve performance (Solberg et al., 2000). It has been suggested to increase concentration, enhance motor skills and improve ability to handle arousal and stress. The aim of relaxation techniques is to remove the negative effects of stress so that athlete can enter and maintain a quality state for performance.

2.6.8 Role of Asana in reducing Anxiety

The website of Harvard Medical School comments on “Yoga for Anxiety and Depression” the following:

Since the 1970s, meditation and other stress-reduction techniques have been studied as possible treatments for depression and anxiety.

Yoga classes can vary from gentle and accommodating to strenuous and challenging. The choice of style tends to be based on physical ability and personal preference. Hatha yoga, the most common type of yoga practiced in the United States, combines three elements: physical poses, called asanas; controlled breathing practiced in conjunction with asanas; and a short period of deep relaxation or meditation.

Available reviews of a wide range of yoga practices suggest they can reduce the impact of exaggerated stress responses and may be helpful for both anxiety and depression. In this respect, yoga functions like other self-soothing techniques, such as meditation, relaxation, exercise, or even socializing with friends.

By reducing perceived stress and anxiety, yoga appears to modulate stress response systems. This, in turn, decreases physiological arousal — for example, reducing the heart rate, lowering blood pressure, and easing respiration. There is also evidence that yoga practices help increase heart rate variability, an indicator of the body's ability to respond to stress more flexibly.

Yoga Guru Shri B.K.S Iyengar illustrates in his book “Light on Yoga” that, Asana brings steadiness, health and lightness of limb. A steady and pleasant posture produces mental equilibrium and prevents fickleness of mind.

2.7 Learning from Secondary Sources of anxiety related literature.

Lot of learning occurred during going through Secondary Sources of anxiety related literature.

- 1) The process of how exactly anxiety affects our thinking process was very important. Stimulus like academic examinations and sport competitions play vital role in causing anxiety.
- 2) Understanding different facets of concept of anxiety. Relation between-State and Trait Anxiety, Cognitive and Somatic Anxiety. It helped researcher to decide scope of the study. Reducing trait anxiety is a time consuming task. So, researcher decided to work on State anxiety with Cognitive and Somatic type of anxiety. (See Chapter1, figure 1.1)
- 3) Knowledge of different theories of anxiety was an insightful learning. It helped researcher to understand the developmental part of the anxiety theories.

The present research study is designed for ‘Anxiety Management of athletes through Training Program’.

As per the objectives of the present study, several researches were reviewed. Ahead are some important reviews.

2.8 Reviews Related to Anxiety and Its Effect on Academic Performance

The following studies are related to findings of Academic anxiety and its effect in academic performance researches. These researches were mostly done in India.

Websites of the researchers and articles in journals are the main sources of literature.

- 1. Mohd Abid Siddiqui and Atieq Ul Rehman (2014)-** An Interactional Study of Academic Anxiety in relation to Socio-Economic Status, Gender and School type among Secondary School Students.

Target Group- Std 10 students (N=222)

Objective of the study- To find out the levels of academic anxiety with respect to school type, gender, socio-economic status of secondary school students.

Conclusion –

- Lower class socio-economic status students at secondary school level have more academic anxiety than upper class socio economic status.
- The type of school (Government and Private) does not affect the level of academic anxiety among secondary school students.
- More severe among girls as compared to boys.
- The study has further revealed that socio economic status is an important variable which affects the academic anxiety in a negative manner.

Recommendations- Researches can be conducted on lower secondary/senior secondary school students academic anxiety in relation to other variables like intelligence, academic achievement, study habits, home environment etc.

2. **Fayegh Yousefi et al (2010)**-The Relationship between Test-Anxiety and Academic Achievement among Iranian Adolescents.

Target Group- 15-18years (N=406)

Objective of the Study- To determine the relationship between test-anxiety and academic achievement among adolescents in Sanandaj, Iran.

Conclusion- A total of 66 (16.5%) respondents were considered as having mild test-anxiety, while 260 (65%) of them had moderate test-anxiety and 74 (18.5 %) had severe test-anxiety

Evidently, there was a significant relationship between test-anxiety and academic achievement. The negative relationship connotes that as test-anxiety increases, respondent's academic achievement decreases. Test-anxiety had impact on adolescent's academic achievement. It decreases adolescents' learning capabilities and hinders excellent academic performance. Test-anxiety decreases motivation towards the ability for attention, concentration and worst, it leads to academic failure.

Recommendations- It is recommended that academic achievement and mental health be improved in school settings with support strategies such as educational guidance, counseling and psychotherapy or other psycho-educational program such as teaching life skill.

3. **Sanjiv K Bhasin, Rahul Sharma and N.K. Saini (2010)** - Depression, Anxiety and Stress among Adolescent Students Belonging to Affluent Families: A School-based Study

Target Group- 14-16years

Objective of the Study- To study the levels of depression, anxiety and stress (DAS) among school students belonging to affluent families, and the association with various socio-demographic characteristics of the students.

Conclusion-

(a) An important finding was that DAS were more among the students taking tuitions for any subject compared to those who were not, irrespective of the academic level. This could also be reflective of parental pressure (or own

perceived pressure) to improve their academic showing in the form of better marks.

(b) The various domains (DAS) that were examined were found to be higher among students whose parents frequently pressurized them to study, whose parents fought among them, or whose parents inflicted physical violence on their children.

(c) DAS were also higher among the students who did not discuss their personal problems with their parents.

Recommendations- Outcome reflects that there is a need for special focus on the adolescent population and their mental health. Educational institutions need to identify the prevalence of negative mental health states among the students, and especially those at high risk. Understanding the prevalence of DAS and the possible factors associated with higher levels of DAS would help in the designing and provision of school based or community-based counseling and treatment options exclusively for the adolescents.

4. Bhutnath Mahato, Sunil Jangir (2012) - A Study on Academic Anxiety among Adolescents of Minicoy Island.

Target Group – 14-16years

Objective of the study- The effort of the study was to measure the academic anxiety among students between 14 to 16 years of age, to evaluate and compare the academic anxiety among boys and girls and to find the relationship of school environment and academic anxiety in the sample.

Major Findings were as follows-

- a) Most of the students experience academic anxiety.
- b) Gender was not found to have any impact on the anxiety scores.
- c) The type of school and the environment had a significant relation with the academic anxiety.

Recommendations- It is concluded that most of today's school children have very high levels of academic anxiety which can have many serious and long lasting consequences on the physical and mental health of children. Parents and teachers in collaboration with school guidance workers should formulate a plan

and work together for the better development of children. Timely encouragement, inspiration and motivation are very important and should be efficiently used by both teachers and parents.

5. **Dr. Ajay Kumar** (2013)-Relationship of Academic Anxiety among Adolescents in Relation to their Home Environment.

Target group 16-18years (N=120)

Objectives of the study-

- To study and compare the Academic Anxiety of boys and girls of Senior Secondary Schools.
- To study and compare the Academic Anxiety of urban and rural adolescents of Senior Secondary Schools.
- To study the relationship between Home Environment and Academic Anxiety of boys and girls of Senior Secondary Schools.

Findings- The result revealed that the Academic Anxiety and Home Environment scores of adolescents correlated significantly.

The mean scores of Anxiety scores of Boys and Girls of Senior Secondary Schools do not differ significantly on the basis of Academic Anxiety.

It indicates that the mean scores of Anxiety scores of Urban and Rural of adolescents do not differ significantly.

It is clearly evident that dimensions namely control, protectiveness, punishment, reward, nurturance, rejection and permissiveness of home environment are significantly correlated with academic anxiety of adolescent students. This correlation shows that with increase or decrease in these dimensions of home environment, there will be impact on the Academic Anxiety of adolescents and vice-versa.

Recommendations- The home environment affects the level of academic anxiety of the adolescents. It is the duty of the parents to provide a pleasant environment to the adolescents, so that adolescents can openly discuss about their educational as well as emotional problems to them.

Healthy parenting skills can also be learnt and practiced to reduce stress in the home for both parents and children. Parents, who are strong and keep an even temperament in their homes, will have healthy and well-rounded children.

- 6. Krishan Lal (2014) - Academic stress among adolescent in relation to intelligence and demographic factors.**

Target group- High School (N=200)

Objectives of the study-

- To compare the academic stress of Senior Secondary School students.
- To examine the academic stress of male and female students of Sr. Sec. School.
- To examine the academic stress of rural and urban students of Sr. Sec. School.
- To examine the academic stress of govt. and private sr. sec. school students.

Findings-

It may be concluded that male Senior Secondary school students had less academic stress than their counterpart's i.e. female senior secondary school students.

Rural and urban senior secondary school students differed slightly in their academic stress. It may be concluded that rural Senior Secondary school students had less academic stress than their counterparts' i.e. urban senior secondary school students

Government and private senior secondary school students differed slightly in their academic stress. It may be concluded that Govt. Senior Secondary school students had less academic stress than their counterparts' i.e. Private senior secondary school students.

Recommendations- All students of high school suffer from equal level of academic stress. However, a variety of teaching methods may be used which are likely to accommodate all types of students. Other major implications for teachers

are that they should try to remove unnecessary academic stress from high and average I.Q. students by using various techniques. This will help them to enhance the level of academics. Students are consoled for stress factor by trained guidance worker/counselor. Further, teachers should try to remove academic stress generating factors from learning environment by taking necessary steps.

7. **Dr. Jampa Venkata, Rama Chandra Rao** (2014) Anxiety among adolescent students

Target group – Std 10 (N=200)

Objective of the study- To understand adolescent's anxiety across Gender, Medium of instruction, and School Environment.

Conclusion- The mean anxiety score in the case of adolescent boys (55.99) was slightly higher than for adolescent girls (53.86).

The mean anxiety score in the case of Telugu medium schools (58.37) was slightly higher than that for adolescents attending English medium schools (58.35).

The mean anxiety score in the case of urban area schools (54.20) was slightly higher than that for adolescents attending rural area schools (51.32).

Results showed that Adolescent boys suffer from higher anxiety than adolescent girls. Adolescents from Telugu medium schools adolescents were more anxious than adolescents from English medium schools. The adolescents coming from the urban area schools were slightly more anxiety prone than their rural area school counterparts.

8. **Chaman Lal Banga** (2016) - Academic Anxiety of Adolescent Boys and Girls in Himachal Pradesh.

Target group- Secondary students (N=400)

Main objectives were laid down for the present study were: To study the nature of distribution of scores for total sample of Sen. Sec school students on the variable 'Academic Anxiety'; and to compare Sen. Sec school boys and girls with respect to their mean scores on the variable 'Academic Anxiety'.

Results of the study:

It was found that the nature of distribution of scores on the variable 'Academic Anxiety' is more or less and similar for the boys, girls and total sample.

Sen. Sec school boys and girls differ significantly with respect to their mean scores on the variable 'Academic Anxiety'. Because, it was found to be that boys have low level of academic anxiety than girls.

2.9 Reviews Related to Anxiety and Its Effect on Sports Competitive Performance

The following studies are related to findings of Academic anxiety and its effect in academic performance researches. These researches were mostly done in the US, Turkey, Spain, Tunisia.

Websites of the researchers and articles in journals are the main sources of literature.

9. **Richard Neil, Stephen D. Mellalieu and Sheldon Hanton (2006)** in their study, Psychological Skills Usage and the Competitive Anxiety Response as a Function of Skill Level in Rugby Union

Objective of the study- The intensity and direction of competitive anxiety symptoms and psychological skill usage in rugby union players of different skill levels.

The findings that non-elite performers experience their anxiety symptoms as debilitating and attempt to reduce these symptoms via the use of relaxation suggest that practitioners should implement relaxation-based programs.

Elite performers who are debilitators may however be better advised to implement some cognitive restructuring techniques using psychological skills and strategies to interpret their anxiety as facilitative to performance including a combination of goal setting, self-talk, and imagery (Hanton and Jones, 1999).

10. **Todd A. Ryska** (1998) studied Cognitive-Behavioral Strategies and Precompetitive Anxiety among Recreational Athletes.

Target group- Adult players (N= 186)

Objective of the study- To describe the prevalence, types, sources, and perceived effectiveness of cognitive-behavioral strategy use among a sub-elite sample as well as to determine the extent to which each strategy contributed to changes in cognitive anxiety, somatic anxiety, and self-confidence.

Findings- Nearly 30% of the sample reported using strategies in training and competition, comprised by relaxation, mental imagery, attention control, positive self-talk, and goal-setting.

Stepwise regression analyses controlling for player characteristics revealed that attentional control and goal-setting strategies contributed to lower cognitive state anxiety, attention control and imagery/ relaxation strategies resulted in lower somatic state anxiety, and attention control and positive self-talk contributed to increase state self-confidence. The role of specific cognitive-behavioral techniques in facilitating adaptability to competitive stress among recreational athletes is discussed.

11. Gregory Wilson, Mary Pritchard (2005)-‘Comparing Sources of Stress in College Student Athletes and Non-Athletes’

Target group- Participants were grouped as athletes ($n = 52$) and non-athletes ($n = 310$).

The purpose of this exploratory study was to assess the differences in the types of stress that athletes and non-athletes experience. Researcher found that athletes differed in a variety of ways from their non-athlete counterparts. For example, student athletes reported more stress than did non-athletes in a wide variety of variables; specifically those that dealt with conflicts with a boyfriend’s or girlfriend’s family, $t(359) = 2.53, p < .05$. On the other hand, non-athletes reported more stress than their athlete counterparts in areas such as financial burdens, $t(357) = 3.27, p < .001$, making important decisions about their education.

Recommendations- The intent of this exploratory study was to compare sources of stress in first semester college freshman student athletes versus student non-athletes. This is important because recent studies (Murray, 1997) have found that

athletes may be in particular need of counseling for a variety of additional stress-related concerns, including time management, burnout, fear of failure, anxiety, depression, and self-esteem issues. Because athletes often represent an “at-risk” student group in terms of college academic success, it is important to identify the unique sources of stresses experienced during the first semester freshman year for the student-athlete. University athletic departments need to be cognizant of the time demands that are placed on their athletes during this crucial period of adjustment, additionally, prevention programs need to be implemented that help assist the freshmen athlete in dealing with potential sources of stress.

12. Miguel Humara (1999) – ‘The Relationship between Anxiety and Performance: A Cognitive-Behavioral Perspective’

This paper examines the relationship between anxiety and performance from a cognitive-behavioral perspective.

The present article is divided into sub sections, in the first part- author discusses about concept of anxiety and how it differs from stress, arousal and activation. Further researcher discusses various theories of anxiety and its effect on competitive performance. Clearly, anxiety exerts a variety of effects on athletic performance. These effects vary based on sport, gender and level of experience. In order to facilitate peak performances by athletes, sport psychologists must consider the three different facts of anxiety: cognitive anxiety, somatic anxiety, and self-confidence. Given the research that indicates that successful athletes who interpret their anxiety as being facilitative is characterized by high scores on self-confidence and low scores on somatic and cognitive anxiety. In the concluding part of this article, author talks about various cognitive behavioral treatments in sports. Research in the field has identified the following strategies used by elite performers to control their anxiety: goal setting; though control strategies such as positive thinking and cognitive restructuring; relaxation techniques such as diaphragmatic breathing, imagery, and progressive muscle relaxation; and focusing on the task at hand (Gould, Eckland, & Jackson, 1993; Jones & Hardy, 1990; Orlick & Partington, 1988). Even the amount of cognitive efforts that are used by an individual to use these strategies as an effect on performance. Gould et al., (1993) reported that the differences between medal winners and non-medal winners at an Olympic wrestling competition was the

degree to which the individuals used these interventions automatically such that winners were more likely to use the interventions automatically. Most elite level performers have already found ways of achieving the activation state that is necessary for the sport. One of the things that make sports so fascinating is the number of different demands that are placed on an individual throughout a competition. It is therefore unlikely that any one intervention will ever be able to be of benefit for everyone. Thorough assessment of the athlete's needs is therefore recommended.

13. Joy Cooper (2010) –‘The Relationship between Level of Competition and Competitive Sport Anxiety in Youth Recreational Soccer Players’.

Target group- 10 to 15 years (N=240)

Objective of the study- The purpose of this study was to examine the relationship between levels of competition and competitive anxiety in youth recreational soccer players. The design of this study is cross-sectional and descriptive in nature. Questionnaires were administered to five recreational league soccer teams and five classic league soccer teams over the course of the first two scheduled home games, one game per team, and completed by participants prior to competing in that soccer game. Approximately 240 athletes’ ages 10-15 registered to participate, half registering to participate in the recreational league and the other half participating in the classic league. The key variables measured in this study were the two subcomponents of competitive sport anxiety (cognitive A-state and somatic A-state anxiety) and level of competition. The Competitive State Anxiety Inventory-2 (CSAI-2) was used to assess cognitive A-state anxiety, somatic A-state anxiety, and state self-confidence.

The variables tested within this study were levels of soccer competition and sub components of competitive anxiety. For the purpose of this study, data was analyzed using Analysis of Variance (ANOVA).

The results of this study indicated that the scores for the cognitive A-state anxiety were significantly higher for youth soccer players participating in the classic league when compared to youth soccer players participating in the recreational league.

These findings suggested a relationship between advanced levels of sport competition and cognitive anxiety experienced in youth athletes. The results of this study indicated no significant relationship between levels of soccer competition and somatic A-state anxiety experienced in the youth athletes. Future research identifies significant findings utilizing the CSAI-2 to determine the relationship of competitive sport anxiety and several specific factors as it relates to sport and competition. Alternatively, the results of this current study not only provides research for the specific study population of youth recreational soccer players ages 10-15 years old, but also provides significant findings of how levels of competition can be related to competitive sport anxiety not only within youth recreational soccer but within the recreational sport field.

14. Ashley Bridges and Brandon Knight (2005) –‘The Role of Cognitive and Somatic Anxiety in Athletic Performance’

This experiment was conducted with 23 participants, 16 males and 7 females. Participants were between the ages of 18 and 22.

This study investigates whether findings are able to predict athletic performance. Twenty three starting collegiate athletes were tested for somatic anxiety (measured blood pressure and heart rates) and cognitive anxiety (CSAI-2, self-report questionnaire) during leisure time and 10 to 45 minutes prior to a collegiate competition.

Athletic performance was assessed by the appropriate coaching staff.

This study researched the effects of cognitive and somatic anxiety on athletic performance. Although the findings are inconsistent with those of Yerkes and Dodson (1908) as the results did not indicate an inverted relationship between somatic anxiety and performance, as well as those of Martens et al. (1990) as the results indicated no presence of a negative linear relationship between cognitive anxiety and performance.

2.10 Researches Related to Psychological Skills Training

15. Robin S. Vealey (1988)-Future Directions in Psychological Skills Training

This decade has been marked by the development of several approaches to psychological skills training (PST). To assess current trends in PST in order to ascertain if consumers' needs are being met, a content analysis of PST approaches published in books in North America between 1980 and 1988 was conducted with regard to target populations, content areas, and format characteristics.

To evaluate current PST approaches, a content analysis was conducted. The research design used in this study was based on Krippendorff's (1980) content analysis framework which includes six methodological steps.

- First, the data to be analyzed and population they are to be drawn from is clearly defined.
- Second, the context is made explicit to establish clear boundaries for the analysis.
- Third, the investigator's knowledge is taken into account in the evaluation of context.
- Fourth, the aim or target is clearly stated.
- Fifth, inferences are made from the data in relation to their context.
- Sixth, validity is assumed based on the priori specifications of data, context, knowledge, and target.

In the next section of the article, the design of this study is discussed with regard to these six steps. They are data, context, investigator's knowledge, target, inference and validity.

Twenty-nine books meeting the established criteria of the content analysis were identified.

Overall, several conclusions may be drawn from the content analysis.

First, most of the books were targeted for athletes, and although they were not written specifically for elite athletes they seemed to be geared to the elite level.

Second, although 8 of the 27 books were targeted for both athletes and coaches, most of them did not provide information specific to coaches. The exception was Orlick.

Third, the content areas of the books focused heavily on PST methods (imagery, thought control, physical relaxation, and goal setting) and the skills of attentional and arousal control. Thus the emphasis seemed to be on methods and psychological skills directly related to performance as opposed to psychological skills related to personal development such as self-esteem, interpersonal skills, and lifestyle management. Fourth, most of the PST approaches discussed in the books were research-based.

Finally, the analysis of the format characteristics indicated that most books written about PST simply present the information to the consumer about various psychological skills and techniques. Only about half of the books invite the consumer to be an active participant in the learning process, and most approaches lack a progressive approach and systematic implementation system. Emerging Approaches were discussed, in brief they are: Sport-Specific PST Programs, Emphasis on Competition Plans, Emphasis on Coping or Refocusing, Emphasizing Personal Development.

Based on the content analysis, six needs representing viable future directions for PST are outlined. These needs include (1) targeting youth and coaches in addition to elite athletes, (2) moving beyond basic education into specific implementation procedures, (3) differentiating between psychological skills and methods, (4) adopting a holistic approach based on the interactional paradigm and a personal development model, (5) defining the practice of sport psychology based on the personal development of sport consumers, (6) and facilitating the theory/practice relationship through research-based PST programming and evaluation research.

16. **BÜLENT OKAN MİÇOOĞULLARI (2013)** Effect of 6 Weeks Psychological Skill Training on Team Cohesion, Self-Confidence & Anxiety: A Case of Youth Basketball Players
Target group- 36 male youth basketball players

The purpose of this doctoral study was to examine the impact of six weeks psychological skills training program (PST) based on cognitive-behavioral conceptual framework on the team cohesion, confidence, and anxiety of an intact team.

Participants consisted of two teams of. The PST program consisted of team building, goal setting, relaxation, imagery, self-talk, pep-talk, converting thoughts, autogenic training, and progressive relaxation techniques.

For the quantitative part of the study Group Environment Questionnaire (GEQ), the Trait Sport-Confidence Inventory (TSCI), and the State-Trait Anxiety Inventory (STAI) were given during the pre-intervention, post-intervention, first, second and third follow-up tests.

Overall, it was concluded that the PST program with experimental team affected athletes' team cohesion and self-confidence levels positively but there was no significant effect on athletes' anxiety levels.

Current study implications did not decrease anxiety levels significantly.

This study was advocated the assumption a psychological skills training program is more effective than individual interventions.

A recommendation for future research might be assess of each individual psychological skill to determine how frequently it is used. Furthermore, to develop multidimensional and affective PST programs future research should also give importance to opinions and needs of coach & athletes.

One of the strength points of the study was its applicability to other areas of the athletes' lives. As can be understood from their subjective evaluations, athletes mentioned how they felt the program helped them in their studies, relations with others, and approach to life in general. They also mentioned how they valued the interventions sessions and enjoyed knowing with each other closer and with a researcher to learn concepts and techniques and to express feelings about tensions in their sports and real life situations.

17. **Boris Blumenstein & Ronnie Lidor** (2007)-The Road to the Olympic Games: A Four-Year Psychological Preparation Program

The purpose of this paper is to describe the four-year psychological preparation program given to Israeli elite athletes whose goal is to participate in the 2008 Olympic Games. The paper provides the general psychological framework used in each of the four years of preparation. The objectives of the three psychological programs used during the psychological preparation: - the Five-Step Approach, Specific Psychological Training Program, and Response Training Program. Specific examples of the use of the psychological program in judo and rhythmic gymnastics are given. Two practical tips are suggested for sport psychologists who engage in multi-year preparation of elite athletes for the Olympic Games.

The paper is composed of four parts. The first part describes the criteria which elite athletes in Israel are required to meet in order to be included in the category of "Olympic athletes." This part also describes the professional support provided to those athletes included in this category. The second part presents a short overview of our psychological approach to elite and Olympic athletes, and the third part introduces the main principles of the interventions given to the elite athletes during the four-year psychological preparation. The fourth part provides two psychological tips for sport psychologists who work with Olympic athletes.

In psychological training program, mental skill techniques such as imagery, focusing attention, relaxation, and self-talk are regularly used to help the athletes overcome psychological barriers. Among these barriers are low level of motivation, lack of concentration, mental fatigue, and the need to overcome injury. The psychological program reflects the objectives of each critical phase of the annual training program:-preparation, competition, and transition (Blumenstein et al., 2005; Bompa, 1999). In the preparation phase, the athlete develops a general framework of the physical, technical, tactical, and psychological preparations for the upcoming season. In the competition phase, the athlete has to reach his or her peak, both physically and psychologically. In the transition phase, the athlete relaxes physically and psychologically, however he or she attempts to maintain an acceptable level of physical activity.

The 5-SA is a self-regulation technique incorporating biofeedback (BFB) training has been also mentioned on the training program. The technique enables athletes to transfer the psycho-regulative skills performed in sterile laboratory settings to

real practice and competition settings, utilizing testing and different simulative materials (Blumenstein & Bar-Eli, 2005). The 5-SA is composed of five stages:

(a) Introduction of learning various self-regulation techniques (e.g., imagery, focusing-attention, and self-talk)

(b) Identification (identifying and strengthening the most efficient BFB response modality)

(c) Simulation (BFB training with simulated competitive stress)

(d) Transformation (bringing mental preparation from the laboratory to the field)

(e) Realization (achieving optimal regulation in competition).

Working with elite and Olympic athletes for a four-year period of time is a complex and demanding process, requiring that sport psychologists effectively plan their psychological preparation, exhibit a high level of commitment, and create a positive and trustful climate between them and the elite athletes and their coaches. Based on researcher's experience of providing psychological interventions to elite athletes in individual (i.e., judo) and team (i.e., rhythmic gymnastics) sports, two practical tips for sport psychologists who work with top-level athletes are suggested.

First, sport psychologists should focus on what they are capable of doing best, second, sport psychologists should cooperate regularly with the rest of the professional staff working with the elite athletes.

18. **Samuel J. Zizzi and et al** (2009) Establishing a Hierarchy of Psychological Skills: Coaches', Athletic Trainers', and Psychologists' Uses and Perceptions of Psychological Skills Training

In the present article, researcher has attempted to throw some light on kind of mental skills to be included in the psychological training program.

During the initial phase of item development for the survey, an extensive literature search was conducted to identify the most common terms used under the umbrella of psychological skills training.

- The first section of the survey included items on personal experiences with PST such as frequency of use, previous training, self-efficacy, and perceptions of effectiveness for each of the nine selected psychological skills.
- The second section of the survey assessed participant perceptions of qualifications of various professionals in their ability to teach psychological skills.
- The final section of the survey assessed perceived training requirements for each specific skill. Extensive pilot testing of the survey was conducted prior to the study

The present study used a stratified-randomized sampling design to generate lists of mailing addresses for 300 Certified Athletics Trainer (ATCs), 300 coaches, and 300 Licensed Psychologists (LPs).

After a national survey, the final sample included 54 athletic trainers, 64 coaches, and 50 licensed psychologists ($n = 168$).

From the current study, it appears that ATCs, coaches, and LPs perceive hypnosis, energy management, imagery, and cognitive restructuring to require the most training out of these skills. The next step appears to be surveying sport psychology professionals on the same issues and comparing their hierarchy of skills to those of coaches, ATCs, and LPs. This continued line of research is warranted to establish firm standards of practice and help accrediting bodies determine what psychological skills are appropriate for their group of sport professionals. Furthermore, it is hopeful that the current data provide a step in the right direction in clarifying issues of competence with PST, while helping spread the positive effects of sport psychology techniques to a wider audience.

19. **Jessica Daw and Damon Burton** (1994) Evaluation of a Comprehensive Psychological Skills Training Program for Collegiate Tennis players
Target group- Collegiate Tennis players, 18-22 years ($N=26$)

This investigation examined the impact of Comprehensive Psychological Skills Training Program (PSTT) for Tennis on. PSTT players were exposed to three

psychological skills (goal setting, imagery and arousal regulation) and then given opportunity to develop individualized PSTT program. Program effectiveness was evaluated through

- (a) Case study analyses
- (b) Intrateam analyses comparing high and low commitment PSTT players, and
- (c) Interteam analyses comparing PSTT (n=12) and non-PSTT (n=12) players.

Case Study Results

Two points emerged from case study results: (a) targeted PSTT variables improved over time and generally mirrored changes in performance, and (b) non-targeted variables did not change as much over time, and changes on these variables did not correspond as well to fluctuations in performance. The consensus of the two case studies described in this investigation was that players benefited from a three-stage process that included constructing individualized PSTT programs.

Intrateam Results

Post season evaluations were consistently positive overall, with virtually all players indicating that their PSTT program helped them perform better. Additionally, high-commitment PSTT players rated all aspects of their PSTT program as more helpful than did their less committed teammates,

Interteam Results

As expected, following the change of PSTT program focus, most interteam results were statistically non-significant. PSTT and non-PSTT players differed significantly on only 2 of 15 variables (i.e., state self-confidence and double-fault percentage). Clearly, some players benefited from this PSTT program more than did others. The difference is in how beneficial this PSTT program was to a particular individual was related to the level of personal program commitment. To date, few investigations have examined level of commitment to PST programs. Future research is needed to investigate the reasons why some athletes display

more commitment to PST programs than do others, the impact of commitment on PST program effectiveness.

Results indicated that the PSTT was successful, with case studies providing strong support for the effectiveness of individual PSTT programs. Additionally, intrateam results revealed that all PSTT players felt their PSTT program helped their tennis games, although high and low commitment players differed significantly on only 2 of 15 psychological and performance variables. As expected, interteam results demonstrated significant differences on only 2 of 15 variables, with PSTT players displaying higher state self-confidence and committing fewer double faults than did their non-PSTT counterparts.

20. **Mayowa Adeyeye (2013)-Effects of Mental-Skills Training On the Performance of Table-Tennis Players of National Institute for Sport**

Target group- (N=4)

Objective of the study- The study examined the effects of a six-week mental-skills training program on the performance of table-tennis players of National Institute for Sport Lagos.

The participants were exposed to training in three different psychological skills: goal setting, self-talk, and visualization.

The results revealed that the majority of table-tennis players under the study had an increase in each of the mental-skills as well as the anxiety measures and overall performance.

The study consisted of one 30-minute session every week for the group.

The findings of the present study show support for the positive effect of mental-skills training such as goal-setting, self-talk, visualization and confidence on table-tennis players' performance. The results also showed the importance of mental-skill techniques in practice and competition as well. It is recommended that incorporating of mental-skills techniques into training and competitions can be beneficial to the athletes and the coaches in the attainment of excellent performance.

21. **Vanessa R. Shannon et al** (2012)-Striking Gold: Mental Techniques and Preparation Strategies Used by Olympic Gold Medalists

The purpose of this study was to gain a better understanding of Olympic gold medalists' use of psychological skills during preparation for their Olympic gold medal performance. Both team and individual Olympic gold medal winners participated in semi-structured interview sessions.

Analyses revealed that all athletes in the current study utilized strategies and techniques previously identified in the literature. Specifically, analyses revealed four major themes: process focus, imagery, self-talk, and goal-setting.

Athletes have suggested they use a variety of mental training and preparation techniques in their quest for Olympic glory, including: goal-setting (Weinberg, Burton, Yukelson, & Weigand, 2000), pre-performance routines (Gould, Eklund, & Jackson, 1992a), attentional focus and performance imagery (Orlick & Partington, 1988). However, few studies to date have retrospectively asked Olympic champions what they did to prepare for Olympic gold.

22. **Tim Bacon** (2001) - The Planning and integration of mental training programs
The purpose of this article is to describe an approach to planning mental training programs that emphasizes the integration of mental training with the other training components (e.g., technical, physical) in an annual plan.

The basic foundation of mental training can be learned and developed in a manner similar to physical skills. Some of the qualities of a well prepared athlete are confidence, optimism, calmness under pressure, being mentally focused in the present, and determination (Loehr 1983). Athletes can develop these qualities by using psychological techniques derived from five basic mental skills: relaxation, positive self-talk, energisation, visualization and concentration.

An approach to planning annual mental training program has been presented in this article. There are five key points for the coaches to remember.

- 1) Organize your mental training plan using principles of periodization.
General preparatory- specific preparatory-pre competitive- competitive

- 2) Teach basic mental skills first, then practice and develop sport specific versions of these skills
- 3) To individualize mental training for athletes, introduce them to different skills and techniques and let them choose that works for them best. Reinforce this approach by setting individual mental goals with them at the start of each phase of the annual plan.
- 4) Integrate mental training into athletes' regular practice. Devote 10 minutes of every practice to mental training. This demonstrates athletes that what they think is important, encouragement must be given for the usage of mental skills in their everyday practice.
- 5) One must not be afraid to experiment. Every situation and every athlete is unique.

At the end of the year a written evaluation of the mental training program (Orlick 1986) was distributed to the athletes. The effect of this program on their mental readiness for competition was highly rated. The positive results of other parts of the evaluation indicate that the athletes felt that they benefited from the mental training program.

23. **Fairouz Azaiez** (2013)-Evaluation of the Mental Skills of the High Level Athletes: Example of the Athletes of Martial Arts

Target group- mean age= 20.64 ± 2.60 (N=152)

Objective of the study- The purpose of the present study was to compare some psychological skills of the martial arts high level athletes (judokas, boxers, wrestlers and karate as) in Tunisia.

Findings- The results revealed mean differences for all the mental skills between the different activities in the benefit of judokas but this difference was not significant. Despite this difference in averages, the analysis of the 12 mental skills by gender is significant only for the control of fear.

Moreover, the results proved that, the majority of athletes were of the opinion that their ability to mentally prepare for competition was important.

Recommendations- It could be interesting on behalf of the trainers to help their athletes to develop their mental skills. This is why the trainers must devote time

necessary to acquire these fundamentals and thus to bring a minimum of the mental training to their athletes (Gould, Damarjian&Medberry, 1999).

2.11 Researches related to Goal Setting and Academic Anxiety

24. Marla Smithson (2012) -The Positive Impact of Personal Goal Setting On Assessment

This action research is a quantitative study of personal goal setting and how it affects the academic performance of third grade students on weekly Math, Reading, and Language Arts assessments in a proactive effort to increase individual performance on standardized tests. The researcher chose three weeks prior and after goal setting to balance the intervention/nonintervention. All five subject tests had been in place for several months so that the students were familiar with the assessments and their formats. There were five weekly assessments in consideration; two in Math, two in Reading, and one in Language Arts.

This study found that goal setting increased or maintained assessment scores in each of the three content areas.

One significant finding was in the scores of below average or average achieving students. Most of these students' scores increased in each subject area. It was noted that the increase was most evident in the more difficult assessments.

Recommendations- Although this study was limited to a small group of students, one must believe the impact of personal goal setting would be the same for many other students. The students were personally engaged in working toward their set goals for each assessment with enthusiasm. Since goal setting has shown that it can increase performance on assessments, it is recommend that educators use this as a motivational strategy. It is recommended for teachers to help students in lower grades to set their goals due to their limited knowledge of percentages. For older grades, it is recommended that teachers should encourage the students set their own goals but monitor how realistic they are. Goals should be specific and attainable so that students can be successful in reaching them. In addition, they should be dynamic so that once a goal is reached, the student will commit to another goal.

2.12 Researches related to Goal Setting And Sports

25. Trevor Polson (2013) - Effects of Goal Setting on Performance in Collegiate Athletes

This paper explores the effects of goal setting on the performance of collegiate athletes, specifically looking at differences among gender and type of sport and differences among types of goals set.

Findings:

(a) Males set more outcome goals than females ($t=1.848$), athletes in individual sports set more process goals ($t=2.503$) and fewer outcome goals ($t=-1.79$) and achieve fewer goals ($t=-3.87$) than those in team sports, and high school athletes set more outcome goals ($t=1.952$) and fewer specific ($t=-2.055$) and process ($t=-2.911$) goals than high school athletes.

(b) Men were found to set more outcome goals than women, athletes in team sports set more outcome goals than those in individual sports, and athletes in team sports saw less of an increase in performance through goal setting than those in individual sports.

This study found men to set goals slightly more frequently than women, It also supported that all the characteristics of Sullivan and Strode's (2010) "SMAART" principle (specific, measurable, aggressive yet achievable, relevant, and timely) lead to successful goals.

26. Fred C. Lunenburg (2011) - Goal-Setting Theory of Motivation

Edwin Locke and Gary Latham (1990), leaders in goal-setting theory and research, have incorporated nearly 400 studies about goals into a theory of goal setting and task performance.

A goal is defined simply as what the individual is consciously trying to do. Locke and Latham postulate that the form in which one experiences one's value judgments is emotional. That is, one's values create a desire to do things consistent with them. Goals also affect behavior (job performance) through other

mechanisms. For Locke and Latham, goals, therefore, direct attention and action. Furthermore, challenging goals mobilize energy, lead to higher effort, and increase persistent effort. Goals motivate people to develop strategies that will enable them to perform at the required goal levels. Finally, accomplishing the goal can lead to satisfaction and further motivation, or frustration and lower motivation if the goal is not accomplished.

Under the right conditions, goal setting can be a powerful technique for motivating organization members. The following are practical suggestions for managers/students/athletes to consider when attempting using goal-setting to enhance motivation and performance (DuBrin, 2012; Greenberg, 2011; Newstrom, 2011).

- Goals Need to Be Specific
- Goals must be difficult but attainable
- Goals must be accepted by all participants
- Feedback must be provided on goal attainment
- Goals are more effective when they are used to evaluate performance
- Deadlines improve the effectiveness of goals
- A learning goal orientation leads to higher performance than a performance goal orientation
- Group goal-setting is as important as individual goal-setting

Locke and Latham provide a well-developed goal-setting theory of motivation. The theory emphasizes the important relationship between goals and performance. Research supports predictions that the most effective performance seems to result when goals are specific and challenging, when they are used to evaluate performance and linked to feedback on results, and create commitment and acceptance. The motivational impact of goals may be affected by moderators such as ability and self-efficacy. Deadlines improve the effectiveness of goals.

A learning goal orientation leads to higher performance than a performance goal orientation, and group goal-setting is as important as individual goal-setting.

27. **JoAnne Barbieri Bullard** (2014) - The Structure of a Team: The Influence of Goal Setting Type on Intrinsic Motivation, Group Cohesion, and Goal Achievement Orientation of Division III Female Athletes

Target group - above 21 years (N= 76)

The purpose of this study was

- to determine if Division III female student-athletes differed in comparison with each other regarding their previous utilization of goal setting use,
- to determine if goal setting type was related to intrinsic motivation based on the Sports Motivation Scale (Pelletier, Fortier, Vallerand, Tuson, Briere, & Blais, 1995),
- to examine if goal setting type was related to group cohesion based on the Group Environment Questionnaire (Brawley, Carron, & Widmeyer, 1987), and
- To examine if goal setting type was related to goal achievement orientation based on the Task Ego Orientation in Sport Questionnaire (Duda, 1989).

The results of this study supported group-focused individual goal setting was most primarily used among respondents and also resulted in significant correlations with intrinsic motivation, group cohesion, and goal achievement orientation. Athletic departments and coaching staffs can utilize these findings to coach their student-athletes most effectively.

The three types of goal setting identified in this study were:

- 1) Group goals
- 2) Individual goals
- 3) Group-focused individual goals.

Findings- The results of this study provided insight regarding the additional variables such as intrinsic motivation, group cohesion, and goal achievement orientation that impact goal setting and may inspire future research. Group-focused individual goal setting was the only goal setting type significantly correlated to all three variables; intrinsic motivation, group cohesion, and goal achievement orientation. These results showed that athletes utilizing group-focused individual goals are more likely to enhance intrinsic motivation levels,

group cohesion levels, and goal achievement orientation as compared to athletes utilizing individual goal setting or group goal setting practices.

2.13 Researches related to Self-Talk and Academic Anxiety

28 Paul Burnett (1999) - Children's Self Talk and Academic Self Concepts: The impact of teachers' statements.

Target group- Grade 3 to 7 students, (269)

The objective of this study was to explore the relationships between children's perceptions of the frequency of positive and negative statements made by teachers and their self-talk and academic self-concepts (reading, mathematics and learning).

The results for the total sample indicate that positive self talk mediate between perceived frequency of teachers' praise and students' reading self concept.

This research paper has lot of implications for teachers and educational psychologists. This study emphasizes on 'power of positive'. Children who perceived that their teachers said positive things about them had higher math and learner self-concept.

2.14 Researches related to Self-Talk and Sports

29 Kaori Araki Joseph K. Mintah (December 2006, vol 8 issue 4) Belief in Self-Talk and Dynamic Balance Performance

Target group- Undergraduate students ($N = 125$) (39 females, 86 males)

Objective of the study-

The first purpose was to examine the relationship between one's belief in self-talk and performance.

The second purpose was to examine the influence of positive and negative self-talk on performance.

Results indicated that belief in self-talk was not significantly correlated with performance; however, those who used positive self-talk performed significantly better than those who used negative/mixed self-talk. These results suggested that the *type* of self-talk used (i.e., positive or negative) was more important than one's belief in self-talk. Results supported previous literature indicating that techniques designed to produce positive self-talk should be included in psychological skills training programs.

While not the expressed purpose of this study, it is interesting to note that almost all participants experienced a variety of self-talk types. Participants indicating they had used only positive self-talk typically identified two or three types of self-talk. For this group, the most frequently cited type was *focus* (92%) with the other three types assessed also being used by more than half of the participants (*instructional*, 67%; *calming*, 58%; and *motivational*, 52%). Conversely, participants classified as negative/mixed generally experienced three or four types of self-talk. Surprisingly, *focus* self-talk was also the most frequently cited type identified by this group (72%).

For practical relevance, the findings supported recommendations that techniques designed to produce positive self-talk should be an integral part of performance enhancing psychological skills training programs.

30. Shahzad Tahmasebi Boroujenia, Banafsheh Ghaheri (2011) - The effect of motivational self-talk on reaction time

Target group- Thirty four female novice undergraduate students participated in the study.

Objective of the study- First purpose of the above study was to examine the effects of self-talk on reaction time, motivational self-talk was preferred.

Secondly, researcher aimed to examine the assumption that there is a significant relation between belief in self-talk and performance.

This research study contributes in relation with that more research is required to be conducted. The results from choice RT in this study support previous findings as regards the effective of ST on task performance. Nonetheless, these results

were not encouraging in whole body and simple RT as well as no evidence was investigated regarding the relation between participants' belief in ST and performance. More research on this topic needs to be undertaken to examine this relationship. In future investigations using instructional and kinesthetic self-talk and prolonging the ST intervention might enhance the effectiveness. Future studies on the current topic are recommended in highly trained athletes.

2.15 Researches related to Imagery and Academics

- 31 Ms.USHA.H.V (2011)** A True experimental study to assess the effectiveness of guided imagery in reducing student's examination anxiety among adolescents in selected colleges at Kolar district

Target group- The subjects were 65 high and 31 low test anxious students of first semester freshman.

Objective of the study- A study was conducted to assess the (a) relationship of test anxiety to academic performance among college students (b) difference in study related behavior between high and low test anxious students and(c) differential effectiveness of study related behavior for both groups.

- 32 Dr. Osama M. Kraishan1 Mrs. Hana R. Bajes (2015).** The Relationship between Mental Imagery, Creative Thinking and Academic Achievement of Tenth Grade Students in Physics

Target group- Fifty four students from two different schools were selected as a sample for the study.

Objective of the study- This study aimed to answer the following question: Is there a statistically significant transactions correlation at the significance level ($\alpha = 0.01$) in the post-test (mental imagination and creative thinking, mental imagination and academic achievement, creative thinking and academic achievement) among students in the tenth grade in Physics?

This study has a theoretical importance because it is a qualitative addition to the educational literature in the field of physics teaching, it is expected to address the fundamental problem facing both teachers and learners alike, through shedding light on the effectiveness of using a three-dimensional virtual worlds in improving both mental imagination and creative thinking and academic achievement.

Then they were divided into three groups (18) students each. Two experimental groups: one of them the teacher used three dimensional virtual worlds in teaching “electromagnetic induction) chapter. The second group the teacher used the real worlds to teach the same chapter. And in the third group the teacher used (2D) in teaching also the same chapter.

Three tools were prepared for the study. 1) Mental Imagery 2) Creative Thinking 3) Standard Reference Academic Achievement

The results of the study revealed that statistically correlation coefficient was found at the significance level ($\alpha = 0.01$) between the post-test (Mental Imagery and Academic Achievement, Creative Thinking and Academic Achievement, Mental Imagery and Creative Thinking) in physics.

33 Beverly Colleene Galyean - Guided Imagery in the Curriculum

Cognitive Imagery -Memorizing definitions, to learn and to refine psychomotor skills, improvement in the handwriting, drawing ability, creative thinking

Affective Imagery- enables students to develop healthy self-concepts by owning their own power, recognizing latent capabilities and enlarging those that are already working for them. Student also learn to become comfortable with introspection and self-disclosure, two essentials of healthy self –determined concepts. The ability to look within and tell the truth of innermost stories has been cited by some psychologists as a major constituent of mental health.

Guided Transpersonal Imagery- Use of this imagery is to promote transpersonal awareness and growth.

Results from the early projects are encouraging. The current interest in guided imagery as a powerful agent for affecting physical and emotional health, as well

as intellectual insight, is sufficient testimony to the validity of imagery as a major curricular intervention in education.

Further research is needed to refine current uses of imagery.

2.16 Researches related to Imagery and Sports

34 Tracy C. Ekeocha (2015) - The Effects of Visualization & Guided Imagery in Sports Performance.

Target group- N= 46

Objective of the study-

- To demonstrate how the use of guided imagery could produce a positive correlation with better-quality performance.
- To show the effectiveness of both physical practice and guided imagery when implemented together.

The intervention phase consisted of each subject's practicing (on their own time) for five consecutive days. This should take 5-15 minutes depending on which practice group they were assigned to. The 3 practice groups (a) the free throw practice only group, (b) guided imagery only group, and (c) the free throw practice & guided imagery group.

(a) The free throw practice only group was instructed to shoot 25 free throws a day for 5 consecutive days.

(b) The guided imagery group was provided with, step by step, guided 23 imagery/visualization techniques that were implemented for 5 consecutive days.

(c) The free throw and guided imagery group shot 25 free throws a day and implemented guided imagery/visualization technique for 5 consecutive days.

The post intervention phase required all participants to reshoot 25 free throws at the exact court and goal they shot their baseline free throws.

In the **guided imagery group**, of the 25 subjects, 14 (56%) showed improvements in their free throw percentage, 6 (24%) showed a decrease in their free throw

percentage, and 5 (20%) remained the same. In the **free throw group**, of the 21 subjects, 9 (43%) showed improvements in their free throw percentage, 12 (57%) showed a decrease in their free throw percentage, and 0 (0%) remained the same. Lastly, in the **guided imagery and free throw groups**, of the 21 subjects, 11 (52%) showed improvements in their free throw percentage, 8 (38%) showed a decrease in their free throw percentage, and 2 (10%) remained the same.

Recommendations- Of all three groups, the guided imagery group had the best results with an average of a 4.8 free throw percentage increase, but not enough to reach significance. Though this study had various limitations, it can still be used as a learning tool to provide more valid results in future research. More reliable and valid results will then be able to help more athletes, trainers, and coaches to have more effective results from their training sessions.

35 Vincent Parnabas (2015)-The Effect of Imagery on Sports Performance among Track and Field Athletes.

Target group- above 18years, N= 133

Objective of the study- The main aim of this study was to correlate the usage of imagery and sports performance among Track and Field Athletes.

Results- The result showed that Track and Field athletes represented university exhibited lower level of imagery usage than athletes from district, whereas national and state athletes showed the highest levels of imagery usage.

The result of this research showed that there is a positive correlation between internal and external imagery with sports performance among Track and Field athletes.

Recommendations- The usage of all the sensory experiences like visual, kinesthetic, auditory and olfactory using both internal (first person) and external (third person) imagery perspectives to view the images that enhanced sports performance. Many sports such as Track and Field athletes, not only require physical skills, but also a strong mental game as well.

This study has given a better understanding to the coaches and athletes that mental imagery enhances sport performance of Track and Field athletes. Sport psychologists and coaches should use the present findings to recommend imagery strategies to universities and district ranking athletes to increase their level of performance.

2.17 Researches related to Emotion Regulation and Academics

- 36 Nur Hafizah bt. Abd Halim Hafiz International Islamic University Malaysia, Malaysia-**Emotion Regulation and Academic Performance Among IIUM Students: A Preliminary Study. Jurnal Psikologi Malaysia 29 (2) (2015): 81-92 ISSN-2289-8174.

Target group- age group of 21 to 25 years old, N=127

Objective of the study- A study to investigate the relationship between emotion regulations strategies, namely cognitive reappraisal and expressive suppression, and academic performance was carried out.

Results revealed that there are different findings between the two emotion regulation strategies. This study found there is a significant relationship between Expressive Suppression and CGPA; however, no significant relationship existed between Cognitive reappraisal and CGPA. Regression model revealed that both cognitive reappraisal and expressive suppression did not predict students' academic performance.

- 37 Shokooh Shahidi, Hossein Akbari¹ , Fatemeh Zargar – (2017)** Effectiveness of mindfulness-based stress reduction on emotion regulation and test anxiety in female high school students.

Target group- 14 to 16 years N= 50

Objective of the study- this research aimed to examine the effectiveness of a mindfulness-based stress reduction (MBSR) therapy on emotion regulation and

test anxiety of students and test the remaining effect of this treatment after 3 month.

Conclusion and Recommendation- The study results indicated that the effects of MBSR lasted through the follow-up, for both of these variables. Using the results of this study may be proposed school counselors use mindfulness to reduce the anxiety of their pupils.

2.18 Researches related to Emotion Regulation and Sports

38 Marc Jones (2003) - Controlling Emotions in Sports

This is a theoretical study.

The present paper summarizes a number of strategies based on Lazarus' cognitive-motivational- relational theory of emotion. These strategies aim to change cognitions, resulting in either more appropriate emotional response or the suppression of the expression of emotion and any maladaptive behavioral response. These techniques consist of self-statement modification, imagery, Socratic dialogue, corrective experiences, self-analysis, didactic approach, storytelling metaphors and poetry, and use of problem solving skills.

Objective of the study- This paper aims at reviewing range of psychological strategies that could be used by athletes to enhance their emotional control, resulting in improved performance levels.

The paper is divided into four sections.

- The first discusses how emotions arise, along with the characteristics of an emotional response.
- The second section describes how emotions may impact sport performance , and
- the third drafts a number of psychological strategies that could be used by athletes to enhance emotional control.
- The fourth section contains concluding remarks incorporating some areas of future research interest.

39 Matthew J. Stevens Andrew M. Lane- Mood-Regulating Strategies Used By Athletes

Target group- 107 athletes (mean age 19.6 years)

Objective of the study- This study examined strategies used to self-regulate mood dimensions assessed by the Profile of Mood States (McNair, Lorr, & Droppleman, 1971) in athletes.

The survey was conducted with representing range of different sports.

The Self-Regulating Strategies of Mood Questionnaire was the 29-strategies identified by Thayer et al. (1994). Participants were first asked if they thought it possible to change a mood state. If they believed it was possible to change mood, they were asked to nominate strategies from the list of 29 items. These items include: 'Analyze the situation', 'Avoid the cause', 'Call, talk to, or be with someone', 'Change location', 'Control thoughts', 'Drink alcohol', 'Drink coffee or other caffeinated beverage', 'Eat something' Engage in emotional activity', 'Engage in a hobby', 'Engage in pleasant activities', 'Engage in self-gratification', 'Engage in stress management', 'Exercise', 'Go shopping', 'Listen to music', 'Put feelings in perspective', 'Rest', 'take a nap, sleep', 'Take a shower, bath, or splash water on face', 'Try to be alone', 'Use humor', 'Use relaxation techniques', and 'Watch TV'.

The present study has found that the main strategies used by the athletic population to regulate negative moods were to 'listen to music', 'change location', and to 'exercise'. 'Call, talk to, or be with someone' was also cited as a strategy for regulating certain mood states. Findings lend support to the proposal that negative mood should be conceptualized through a number of different constructs.

2.19 Researches related to Cognitive and Somatic Anxiety and Its Effect on Competitive Performance

40 Vincent A. Parnabas et al (2013) -The Relationship between Cognitive and Somatic Anxiety on Performance of Student-Athletes of University Malaysia Perlis (UNIMAP)

Target group- 112 athletes

Objective of the study- To determine the level of somatic and cognitive anxiety between different categories of athletes, which consists national, state, district and university level athletes.

Competitive State Anxiety Inventory-2 (CSAI-2) measure somatic anxiety (9 items), cognitive anxiety (9 items) and self-confidence (9 items), Sport Performance Questionnaire, (SPQ) which contain 15 items evaluated athletes' performance based on their confident, satisfaction, enjoyment and concentration level. The data was collected during competition.

The result revealed there exists of negative correlation between cognitive anxiety and sport performance. Similar result also detected between somatic anxiety and sport performance. The results showed that elite or national athletes exhibited lower levels of somatic and cognitive anxiety than non-elite athletes.

41 Ashley Bridges and Brandon Knight (2005)-The Role of Cognitive and Somatic Anxiety in Athletic Performance.

Target group- Twenty three starting collegiate athletes

Objective of the study- This study investigates whether findings are able to predict athletic performance.

Twenty three starting collegiate athletes from Division III football, women's basketball and men's basketball teams were tested for somatic anxiety (measured blood pressure and heart rates) and cognitive anxiety (self-report questionnaire) during leisure time and 10 to 45 minutes prior to a collegiate competition.

Athletic performance was assessed by the appropriate coaching staff. Linear regression analysis was used to determine that there is actually a significant positive linear relationship between cognitive anxiety and performance for basketball players, while no other significant findings were determined across sport or type of anxiety. This research may benefit the field of sport psychology,

contributing both to players and coaches, by suggesting effective stress management strategies.

In conclusion, although the results did not support the hypotheses that there is an Inverted U relationship between somatic anxiety and athletic performance or a negative linear correlation between cognitive anxiety and performance, the results did indicate that there is a positive linear correlation between cognitive anxiety and athletic performance for basketball players. Results were supported by the findings of Hardy et al. (1988, 1990, and 1991) that were stated in the catastrophe theory. Implications of this study consists of refuting the findings Yerkes and Dodson (1908), and Martens et al. (1990) in that their findings do not apply to athletic performance. As cognitive anxiety was found to have a positive correlation with performance, it indicates that better performance can be predicted by increasing cognitive anxiety.

2.20 Researches related to Competitive State Anxiety Inventory -2

- 42 S. Rokka, G. Mavridis, E. Bebetos, K. Mavridis** - Competitive State Anxiety among Junior Handball Players.

Target group- 14- 16 years (N= 115)

The purpose of the present study was to evaluate the levels of intensity and direction of the competitive state anxiety in junior handball players prior to a competition and to investigate any possible differences between male and female players, as well as in relation to their athletic experience.

The tool used was the Competitive State Anxiety Inventory-II (CSAI-II, Martens, Burton, Vealey, Bump and Smith, 1983; Martens et al., 1990; Jones & Swain, 1992), which was modified for the Greek population by Stavrou, Zervas, Kakkos & Phychoudaki (1998).

The results

- Male junior handball players reported lower scores of cognitive anxiety, which was facilitative to performance.

- Females displayed a higher score in cognitive anxiety, which was rather debilitating to performance.
- Furthermore, junior male handball players displayed higher self-confidence, with positive effects on their performance, while females stated lower self-confidence, which was neither facilitative nor debilitating to performance.
- In relation to years of experience, the results revealed that players with 4 to 6 years of experience showed higher self-confidence with facilitating direction, while players with less years of experience displayed lower self-confidence, with neither facilitative nor debilitating effects on their performance.

These results are consistent with the findings of similar studies (Scanlan et al., 1979; Wark et al., 1979) which indicates that male athletes typically display lower levels of anxiety and higher self-confidence than female athletes. The more experienced player will show lower levels of cognitive and somatic anxiety than the less experienced player.

In conclusion, the psychological preparation of junior handball players must be taken into serious consideration.

2.21 Researches related to Anxiety/Stress Management Techniques Anxiety in adolescent Students

43 Oakland Unified School has suggested few stress free activities for their students.

This is a theoretical study.

Students' stress is usually related to everyday experiences, worries and challenges at school, home, in the community and within their peer group. For example, young people may experience stress resulting from bullying, name calling, social isolation, not getting what they want, body image, academic difficulties, and unsafe neighborhoods. While each student will respond to and resolve stress differently, the impact of ongoing and/or unresolved stress can lead to feelings of anxiety, depression, irritability, poor concentration, aggression, physical illness,

fatigue, sleep disturbance and poor coping skills such as tobacco, drug and/or alcohol use.

Therefore, young people, like adults, can benefit from learning and practicing stress management skills. Students who develop stress reduction skills learn how to feel and cope better without hurting themselves or others. Identifying and acknowledging the causes of stress and expressing feelings about them are usually the most effective tools students have to reduce stress, in addition to learning practical stress reduction skills.

These activities may be used to address a stressful situation. It is important to practice these skills prior to the onset of a stressful event (for example: incorporate as part of health lessons).

When introducing the concept of stress management to students, it is useful to review the following general behaviors and techniques that will help students manage stress.

- Eat healthy meals with plenty of fruits and vegetables
- Maintain daily routine and schedule
- Exercise regularly
- Avoid caffeine (can increase feelings of anxiety and agitation)
- Do things you enjoy (for example: art, listening to music, being outdoors, dancing, writing poetry, reading, etc.)
- Get good amounts of rest and sleep
- Avoid alcohol, tobacco and drugs
- State feelings in a clear way (for example: “I feel angry when you yell at me.”)
- Decrease negative self-talk (for example: transform “My grades will never get any
- better.” to “I may not be doing to well now, but my grades can improve if I get extra help and I do all my homework.”)
- Be with friends who help you cope in a positive way
- Learn relaxation techniques (such as: deep breathing, muscle relaxation, meditation)

- Talk to caring adults
- Humor/laughter

44 Lindsay Gasparovich writes in her article ‘Positive Behavior Support: Learning to Prevent or Manage Anxiety in the School Setting’ some guidelines to prevent stress in school environment.

This article educates students, parents, teachers and educationists about –How to prevent and reduce anxiety in students, what is positive behavior support, Anxiety, types of anxiety, Strategies to prevent and manage anxiety in the classroom.

- Talk and praise students for their use of positive
 - Educate students about anxiety
 - Provide an open-communication classroom
 - Teach and discuss positive coping skills with students
 - Allow students opportunities to practice and apply coping strategies.
 - For example, allow students to listen to soothing music while taking exams. Establishing and using positive coping skills may reduce tension and anxiety.
 - Positive self-talk and praise students for their use of positive coping skills
 - Teach students to visualize success through mental rehearsals
 - Teach students to focus their attention on a specific object
- This has been shown to lessen anxiety as well.

2.22 Researches related to Yoga and Anxiety

45 Sy Atezaz Saeed, Md; Diana J. Antonacci, Md; And Richard M. Bloch - Exercise, Yoga, and Meditation for Depressive and Anxiety Disorders. Complementary and Alternative Medicine. April 15, 2010, Volume 81, Number 8.

Anxiety and depression are among the most common conditions cited by those seeking treatment with complementary and alternative therapies, such as exercise,

meditation, tai chi, qigong, and yoga. This article summarizes the available evidence on the effectiveness of these approaches for treating clinical anxiety and depression. High-energy exercise (i.e., weekly expenditure of at least 17.5 kcal per kg) and frequent aerobic exercise (i.e., at least three to five times per week) reduce symptoms of depression more than less frequent or lower energy exercise. Mindful meditation and exercise have positive effects as adjunctive treatments for depressive disorders, although some studies show multiple methodological weaknesses. For anxiety disorders, exercise and yoga have also shown positive effects, but there are far less data on the effects of exercise on anxiety than for exercise on depression. Tai chi, qigong, and meditation have not shown effectiveness as alternative treatments for depression and anxiety.

- 46 G Kirkwood, H Rampes, V Tuffrey, J Richardson, K Pilkington-**Yoga for anxiety: A Systematic Review of The Research Evidence. *British Journal of Sports Medicine*. 2005; 39 (12):884–891.

The aim of this study was to evaluate the evidence from a range of sources of the effectiveness of yoga for the treatment of anxiety and anxiety disorders.

A systematic review of the research evidence was conducted between March and June 2004. Eight studies were reviewed. They reported positive results, although there were many methodological inadequacies. Owing to the diversity of conditions treated and poor quality of most of the studies, it is not possible to say that yoga is effective in treating anxiety or anxiety disorders in general. However, there are encouraging results, particularly with obsessive compulsive disorder. Further well conducted research is necessary which may be most productive if focused on specific anxiety disorders.

TABLE OF REVIEW OF PSYCHOLOGICAL SKILL TRAINING

Following observations were made while studying different psychological training programs.

Table 2.2 TABLE OF REVIEW OF PSYCHOLOGICAL SKILL TRAINING

S. N.	Title of the Study-year	Author	Year	Research Method	Tools	Important Conclusions
1	The Effects Of Stress Management Training On Collegiate Football Athletes' Anxiety, Self-Esteem, Self-Efficacy, Motivation, Academic Performance And Coping Skills	Maria Lucille Sepulveda	2008	Experimental pre-test/post-test design.	Sport Anxiety Scale-2	No statistically significant results in anxiety, self-esteem, self-efficacy, motivation, academic performance, and coping skills
2	Effects Of 6 Weeks Psychological Skill Training On Team Cohesion, Self-Confidence & Anxiety: A Case Of Youth Basketball Players	Bülent Okan Miçooğullari	2013	Experimental design	Group Environment Questionnaire Trait Sport-Confidence Inventory, STAI	No statistical significant reduction in Anxiety score
3	Evaluation of comprehensive PST for collegiate tennis players	Jessica Daw and Burton	1994	Descriptive paper	Trait Sport-Confidence Inventory, State Sport-Confidence Inventory, SCAT	
4	"The role of emotion regulation in children's early The role of emotion regulation in children's early academic success"	Paulo A. Graziano et al	2006	Survey	Emotion regulation checklist, Academic competence, Intelligence	"Better emotion regulation skills also facilitate children's ability to independently attend to and learn new information presented by their teachers"

S. N.	Title of the Study-year	Author	Year	Research Method	Tools	Important Conclusions
5	A Comparison Of Mental Strategies During A Comparison Of Mental Strategies During Athletic Skills Performance	Eugenio A. Peluso	2005	Survey	Sport Imagery Questionnaire , Self-efficacy Questionnaire	"enhanced performance on a golf putting task when compared to participants in a control condition. Overall, both self-talk and imagery conditions were found to significantly increase putting performance."
6	Planning and Integration of Mental Training Program	Tim Bacon	2001	Conceptual Study		Skill approach to mental training, Individualized mental training, Organizing annual training plan, Periodization of mental training, evaluation strategies.
7	"The Road to the Olympic Games: A Four-Year Psychological Preparation Program The Road to the Olympic Games: A Four-Year Psychological Preparation Program "	Boris Blumenstein	2007	Descriptive paper		“ the Five-Step Approach, Specific Psychological Training Program, and Response Training Program
8	Effects of Mental-Skills Training On the Performance of Table-Tennis Players of National Institute for Sport, Lagos	Mayowa Adeyeye,	2013	Experimental study	TOPS,SCAT	majority of table-tennis players under the study had an increase in each of the mental-skills as well as the anxiety measures and overall performance. The skills looked at were goal setting, self-talk, visualization and confidence.

S. N.	Title of the Study-year	Author	Year	Research Method	Tools	Important Conclusions
9	"Mental Techniques and Preparation Strategies Used By Olympic Gold Medalists Mental Techniques and Preparation Strategies Used By Olympic Gold Medalists"	Vanessa R. Shannon	2012			Analyses revealed that all athletes in the current study utilized strategies and techniques previously identified in the literature. Specifically, analyses revealed four major themes: process focus, imagery, self-talk, and goal-setting
10	The Role of Cognitive and Somatic Anxiety in Athletic Performance	Ashley Bridges and Brandon Knight	2005	Survey	Self report Questionnaire, Blood pressure, heart rate	Linear regression analysis was used to determine that there is actually a significant positive linear relationship between cognitive anxiety and performance for basketball players, while no other significant findings were determined across sport or type of anxiety.
11	The Relationship between Cognitive and Somatic Anxiety on Performance of Student-Athletes of University Malaysia Perlis	Vincent A. Parnabas	2013	Survey	CSAI-2	National level athletes exhibited lower levels of somatic and cognitive anxiety than non-elite athletes.

S. N.	Title of the Study-year	Author	Year	Research Method	Tools	Important Conclusions
12	Mental Toughness and Athletes' use of Psychological Strategies	Kayvon Azadi		Survey	MTQ48,TOPS	Results of Pearson correlations and linear regression analyses revealed that self-talk, emotional control and relaxation strategies were significantly and positively related to mental toughness in both practice and competition.
13	Patterning of Cognitive and Somatic Processes in the Self-Regulation of Anxiety: Effects of Meditation versus Exercise	Gary E. Schwartz et al	1978	Retrospective study	CSAQ	The regular practice of physical exercise, a somatic relaxer, was associated with less somatic and more cognitive anxiety than the regular practice of meditation
14	The Use of the Person-Centered Approach for the Reduction of the State-Trait Anxiety in Volleyball Players	A. Patsiaouras	2008	Experimental study	STAI 1 STAI 2	The results indicate that the person - centered method positively influences the athletes who participate in team sports reducing their state and trait anxiety.
15	The Effect of Mental-Imagery Training on performance enhancement with 7-10 year old children	Zhang Li Wei et al	1992	Experimental Study	Accuracy in forehand attack, Rating on Technical Quality	Mental imagery training combined with video taped images and relaxation is promising for children
16	Psychological Skills Training in Golf- The role of Individual Differences in cognitive preferences	Patric Thomas	1997	Experimental study	Golf Performance Survey, Negative emotions and cognitions, S IM Q	Imagery and self talk training benefits did not link to participants cognitive preferences.

2.23 Gaps in the previous researches

- Studies related to anxiety management training have been conducted mostly abroad in countries like USA, UK, European countries, Malaysia etc. No studies related to anxiety management, cognitive somatic anxiety has taken place in India especially in Maharashtra.
- All studies related to academic anxiety have been with survey research design. None of the studies are found where experiment is conducted to reduce academic anxiety.
- Studies related to cognitive and somatic anxiety are with survey research design.
- Duration of the experimental studies which were reviewed earlier is found to be insufficient. For eg. Imagery skill is taught to students for a week and later, researcher studies its effectivity on the skill learning.
- The experimental studies aimed at implementing anxiety management training are integrating one or two psychological skills only and not found to approach the subject in a holistic manner.
- No study was found to understand cognitive and somatic aspects of academic anxiety.
- No study was found where performing Yoga is incorporated in reducing somatic aspect of academic anxiety and sport related anxiety.

2.24 Contribution of the present study

Present study contributes in reducing cognitive and somatic anxiety of adolescents in academics and sport as well.

- Sport and academic anxiety is a broad area. Present study mainly aims at designing, implementing and evaluating anxiety management training program.
- No study is found in India, Maharashtra studying adolescent anxiety in academics and sport. This research aims at studying cognitive and somatic

anxiety of adolescent athletes from Pimpri-Chinchwad Municipal Corporation, a suburb in Pune.

- Present study focuses mainly on dependent variables like cognitive and somatic anxiety.
- Duration of the study conducted was extensive, consisting of 41 sessions of 40 minutes each, thrice a week.
- Design of the experimental study. Anxiety management training is designed with a theoretical base. It comprises of three important phases of learning psychological skill. They are as follows:
 - Education Phase
 - Skill acquisition Phase
 - Skill practice phase
- Even though learning psychological skills is a serious activity, it had many interesting activities incorporated especially for adolescents.
- Cohesive approach was adopted while integrating various psychological skills in the anxiety management training program, for eg. Goal Setting, Positive self-talk, imagery, concentration and emotion regulation.
- This research aims at studying cognitive and somatic aspect of academic anxiety. This study also aims at conducting experiments to reduce cognitive and somatic aspect of academic anxiety.
- Special feature of this study is inclusion of Yogasanas to reduce somatic anxiety.

Based on the experience gained, the researcher has formulated suitable methodology to be adopted in this research, which is presented in chapter-III.

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CHAPTER 3

METHODOLOGY

3.1 Introduction

In the first chapter of this research report, Researcher has elaborated about the forethought of the research study. Background of the research, need and importance of the research, objectives and hypotheses of the research has been discussed.

In the second Chapter of this research study, review has been taken regarding conceptual and related literature.

3.2 Organization of the Chapter

While reading the review of Anxiety related literature, the researcher decided the methodology and research design of the research study. The present chapter describes the methodology of the research study. As per the objective of the study, the researcher planned appropriate research design. To achieve the purpose of the study, the research design has been systematically presented and exhibited in this chapter under the following headings:

- a) Method of the study
- b) Design of the study
- c) Population and Sample
- d) Tools used for the study
- e) Data collection procedure
- f) Procedure of the Experiment
- g) Method of Analysis of data
- h) Time schedule of the study.

Hereafter, researcher has explained each heading with adequate information.

3.3 Method of the Study

As stated in Chapter 1, the objectives of the present research are as follows-

- 1) To study the status of cognitive and somatic anxiety among adolescent competitive athletes in P.C.M.C area.

- 2) To design anxiety management training program as an intervention to enhance competitive performance of athletes.
- 3) To test the effectiveness of anxiety management training program as an intervention to enhance competitive performance of athletes.
- 4) To understand the effect of anxiety management training on the academic performance of athletes.

The present research study is a twofold study.

In Objective One, researcher wanted to understand status of cognitive and somatic anxiety among adolescent athletes in P.C.M.C area. Therefore, researcher chose Survey method. Survey methods describe, compare, contrast, classify, analyze and interpret the events that constitute various fields of inquiry. Typically, surveys gather data at a particular point in time with the intention of describing the nature of existing conditions, or identifying standards against which existing conditions can be compared, or determining the relationships that exist between specific events. In survey method, the objective of describing and understanding intensity of cognitive and somatic anxiety was fulfilled.

To fulfill Objective Two, researcher designed ‘Anxiety Management Training Program’. Planning and implementation report as elaborated in Chapter 4.

To fulfill Objective Three, researcher decided on experimental method of study. As, experimental method allows researcher to deliberately control and manipulate the control and manipulate the conditions which determines the outcome in which the researcher is interested in. An experiment involves making a change in the value of one variable – called the independent variable – and observing the effect of that change on another variable – called the dependent variable. Using a fixed design, experimental research can be confirmatory, seeking to support or not to support a null hypothesis, or exploratory, discovering the effects of certain variables. An independent variable is the input variable, whereas the dependent variable is the outcome variable – the result. (Cohen pg 272)

In the present research study, ‘**Anxiety Management Training Program**’ is considered as an **independent variable** as this training program is supposed to be

responsible for bringing about change. ‘**Cognitive and somatic anxiety level of adolescent athletes, competitive performance of adolescent athletes and academic performance**’ are considered as **dependent variables** as it is the outcome of the change brought about by introduction of an independent variable. Details of the variables tested in this study are mentioned in Chapter one.

Method of the study is elaborated with appropriate research design.

3.4 Design of the study

The design of the present research study was **Pre test post test control and experimental group design** and was planned for three phases. The detailed plan of experiment is given in Chapter 4.

- Pre test for Experimental group as well as control group
- Anxiety Management Training for Experimental group conducted for forty one (41) sessions.
- Post Test for Experimental group as well as control group

The following table demonstrates the research design.

Table 3.1 Pre test post test control group design

Research Group	Pretest	Experiment	Posttest
Experimental Group	O ₁	X ₁	O ₂
Control Group	O ₃		O ₄

To implement this research design, a suitable population and sampling information is put hereafter.

3.5 Population and Sample

3.5.1 Population and Sample for Survey

P.C.M.C area is a suburb of Pune. It is consisting of total 650 government aided and non aided schools which are affiliated to State Board of Secondary School of Maharashtra.

To conduct survey, researcher listed out schools where adolescent athletes are encouraged to participate in the sports activities, sufficient time and infrastructure is available for the adolescent athletes and students have secured state and national level sport participation and medals. Researcher approached these schools. In six schools researcher was allowed to conduct survey.

Population of this research study was adolescent athletes. According to World Health Organization, adolescent age is considered as 10 to 19 years. Athlete at the age of 10, is in the initial years of sport training and hence (many times) not part of sport competition. Researcher wanted to include adolescent athletes, who are practicing sport for more than 3 years. In school set up, by 15 years of age students complete their Std 10 examinations and leave school. Therefore, researcher decided to include adolescent athletes of 13 years to 15 years in the research study. For survey, researcher used Purposive sampling method. All adolescent athletes from the age group of 13 to 15 years were part of the survey. Total 327 adolescents participated in the survey.

3.5.2 Population and Sample for Experimental study

Population of the experimental study was adolescent athletes.

Out of six schools where survey was conducted, ‘Jnana Prabodhini Navnagar Vidyalaya’ school agreed to conduct experimental study. Researcher listed out all adolescent athletes (13-15 years) from this school, and randomly selected 70 adolescent athletes from the list. These adolescent athletes were randomly divided into experimental and control group.

Table 3.2 Table of Subject Distribution for experimental study

Groups	No of Students
Experimental	35
Control	35
Total	70

As none of the subject had any health related complaints, all of them were assumed to be clinically fit.

So far, Researcher elaborated about method, design, population and sample of the research study. Appropriate tools to collect data helped the researcher achieve the objectives.

3.6 Tools

3.6.1 Tool used for Survey

To conduct survey, the following tool was used. This is a Standardised test. 'Competitive State Anxiety Inventory-2 (CSAI-2)' by R.Martens et al, 1990.

3.6.2 Rationale for the selection of CSAI-2

Researcher reviewed seven questionnaires testing 'Anxiety'. Their brief description is as follows.

- **Hamilton Anxiety Rating Scale (HAM-A).** This test has been constructed to assess the severity of symptoms of anxiety. It measures psychic anxiety (mental agitation and psychological distress) and somatic anxiety (physical complaints related to anxiety). This test is mostly used in clinical trials.
- **State Trait Anxiety Inventory (STAI, Spielberger, 1983).** STAI has been extensively used in research and clinical practice. It comprises separate self report scales for measuring state and trait anxiety. The S (state) anxiety scale consists of twenty statements that evaluates how respondents feel 'right now' at that moment. The T (trait) anxiety scale consists of twenty statements that assess how people generally feel.
- **Beck Anxiety Scale by Aaron Beck.** This test measures anxiety with focus on somatic symptoms of anxiety. This inventory was developed to discriminate between anxiety and depression.
- **Sport Competition Anxiety Test (SCAT) by Rainer Martens, 1977.** SCAT measures competitive trait anxiety. The child and adult norms of the test are available. With help of results it is possible to determine and understand level of anxiety.
- **Physical Activity and Sport Anxiety Scale (PASAS) by Norton P.S and et al.** This test is designed to measure social anxiety in physical activity and sport. This test was developed to integrate measures of social anxiety and avoidance into assessment of physical activity and sport.
- **CSAQ- (Competition State Anxiety Questionnaire by Schwartz et al, 1978).** This test assesses cognitive and somatic components of trait anxiety separately. There are no psychometric evidences that CSAQ effectively differentiates between cognitive and somatic components of trait anxiety.

- **FSAQ (Four Systems Anxiety Questionnaire).** This sixty items self report questionnaire assesses anxiety on four components; they are somatic, cognitive, behavioural and feeling. Scores on the FSAQ will enable to better understand how one experience anxiety in general setting.
- **CSAI-2 (Competitive State Anxiety Inventory -2) by Rainer Martens, 1990.** Details of this test are mentioned in 3.6.3.

Researcher went through few inventories which measures Anxiety. As mentioned in Introduction Chapter, the researcher wanted to study state anxiety and not trait anxiety of adolescent athletes. Further the researcher also was interested in studying cognitive and somatic anxiety. The examination of above tests from this point of view is indication of following table.

Table No- 3.3 Comparative table measuring various aspects of Anxiety Inventory

No	Name of the Test	Aspect of Anxiety		Related to Sport/Academic /Clinical
		State/Trait	Cognitive/Somatic	
1	Hamilton Anxiety Rating Scale	NA	Only Somatic	Clinical purpose
2	State Trait Anxiety Inventory	State and Trait	NA	Clinical purpose
3	Beck Anxiety Scale	NA	Only Somatic	Clinical purpose
4	Sport Competition Anxiety Test (SCAT)	Trait	NA	Sports Specific
5	Physical Activity and Sport Anxiety Scale (PASAS)	Not Specific	Not Specific	Sports Specific
6	CSAQ- (Competition State Anxiety Questionnaire	Trait	Cognitive and Somatic	Sports Specific
7	FSAQ (Four Systems Anxiety Questionnaire)	NA	Cognitive and Somatic	NA
8	CSAI-2 (Competitive State Anxiety Inventory -2)	State	Cognitive and Somatic	Sports Specific

Above table indicates that only CSAI-2 measures Cognitive and Somatic Anxiety therefore this test was selected.

3.6.3 Tools used for Experiment

- To test cognitive and somatic anxiety, ‘Competitive State Anxiety Inventory-2 (CSAI-2) by R.Martens et al, 1990’ was used.
- To test academic performance
 1. For pre test scores –marks of unit test and
 2. For post test scores- marks of terminal examinations were gathered from their respective teachers.

Details of the tools are as follows.

3.6.4 Description of the ‘Competitive State Anxiety Inventory-2 (CSAI-2)’ by R.Martens et al, 1990

In order to assess the multidimensional aspects of anxiety, Martens et al. (1990b) developed the Competitive State Anxiety Inventory-2 (CSAI-2). This 27- item measure has three subscales: cognitive anxiety, somatic anxiety, and self-confidence. Athletes are asked to indicate “how you feel right now” for each item on a 4-point Likert scale ranging from “not at all” to “very much so.” Examples of the cognitive anxiety items include “I am concerned about this competition,” and “I am concerned about choking under pressure.” These items differ from the somatic anxiety statements such as “I feel nervous” or “I feel tense in my stomach.” The self-confidence subscale includes items such as “I feel at ease,” and “I’m confident I can meet the challenge.” Each of the three subscales has 9 items, which are summed to get a score representing the level of intensity the athlete is feeling for each component of anxiety, and for self-confidence about performing.

Before allowing subjects to begin completing CSAI-2, make sure that the instructions are completely understood and particularly that responses should be based on how the respondent feels at the moment.

• Scoring of CSAI-2

The CSAI-2 is scored by computing a separate total for each of the three subscales, with scores ranging from a low of 9 to a high of 36. The higher the score, the greater the cognitive or somatic state anxiety or greater the state self-confidence. No total score for the inventory is computed.

The cognitive state subscale is scored by totaling the responses for the following 9 items: 1,4,7,10,13,16,19,22, and 25. The somatic state subscale is scored by adding the responses to the following 9 items: 2,5,8,11,14R,17,20,23 and 26. Scoring for item 14 must be reversed in calculating the score for the somatic state subscale as indicated below:

1=4

2=3

3=2

4=1

The state self-confidence subscale is scored by adding the following items: 3,6,9,12,15,18,21,24 and 27.

Inventories that are missing no more than one response per subscale can still be scored, but any inventory in which two or more items from any one subscale are omitted should be invalidated.

- **CSAI-2 Norms**

Normative information for each of the three subscales of the CSAI-2 is provided for male and female high school, college and elite athletes as well as for the sports of basketball, cycling, golf, swimming, track and field and wrestling. Over half the data used in computation of these norms were obtained from colleagues who have conducted independent competitive anxiety research with the above mentioned games.

Percentile ranks and standard scores are provided for each norm group. The percentile rank of an individual's score indicates the percentage of individuals in the norm group who scored lower on each CSAI-2 subscale. Thus, a percentile rank of 63 indicates that 63% of the respondents in the norm group had lower scores on that csai-2 subscale.

Standard scores are also provided because percentile ranks represent measurement on an ordinal scale only, whereas standard scores are expressed on an interval scale.

- **Reliability of CSAI-2**

Test-retest reliability is inappropriate for state scales, so the only method of estimating reliability for the CSAI-2 was by examining the internal consistency of the scale.

Internal consistency measures the degree to which items in the same subscales are homogeneous. Cronbach's alpha coefficient was computed to assess the internal consistency of the CSAI-2 on three samples. Sample 1 was comprised of 35 male college track athletes and 22 elite high school wrestlers. Sample 2 consisted of 40 elite male high school wrestlers and women collegiate volleyball players. Sample 3 contained 54 elite high school wrestlers. As shown in the table below, alpha coefficients ranged from .79 to .90, demonstrating a sufficiently high degree of internal consistency for each of the CSAI-2 subscales.

Table3.4 Internal Consistency of CSAI-2 Subscales

Sample	N	CSAI-2 cog	CSAI-2 som	CSAI-2 sc
1	57	.79	.82	.88
2	40	.83	.82	.87
3	54	.81	.83	.90

- **Concurrent Validity**

The American Psychological Association's (1974) Standards for Educational and Psychological Tests recommends that self-report inventories be first validated by demonstrating concurrent validity with previously validated scales. Thus, concurrent validity is inferred when a new inventory is congruent with or divergent from theoretically predicted relationships using previously validated scales.

The concurrent validity of the csai-2 was examined by investigating the relationships between each of the CSAI-2 subscales and eight selected A-state and A-trait inventories. The same three samples of athletes that were used to evaluate the CSAI-2's internal consistency also were tested for part of the new inventory's concurrent validation. Athletes in all samples completed SCAT and a second A-trait inventory and CSAI-2 and a second A-state inventory within 1 hour of when they actually competed.

3.6.5 Results of the Unit test and Term examinations

To understand effect of Anxiety Management Training Program on Academic performance, results of Unit test and Terminal examinations were gathered by the researcher. Both the unit test and terminal examinations question paper were prepared by subject teachers. Researcher collected mark sheet of the sample athletes from

respective subject teachers. Test results were considered as pre test scores and terminal examinations results were considered as post test scores.

3.7 Data Collection Procedures

Researcher discusses about process of data collection.

3.7.1 Data Collection procedure for Survey:

The researcher started the data collection process by visiting the selected schools and explained the purpose of the study to the school Principal. After seeking the permission of the Principal, the respective teachers of the class were contacted to decide upon the time schedule for administering the survey Inventory.

The tools were administered to the selected adolescent athletes in the regular classroom atmosphere after the class teacher introduced the researcher to students in the class and researcher explained the purpose of the research study to the adolescent athletes. It was made sure by the researcher that everyone understood all the instructions prior to the solving the inventory. Researcher also ensured that students did not discuss with each other and responded to all the items provided in the inventory.

3.7.2 Similar procedure was carried out for collecting data for experimental study.

3.8 Procedure of the Experiment

In this section, researcher explains process of experiment conducted step wise.

- **Pre Test**

Pre test (CSAI-2) was conducted with experimental as well as with control group.

Academic performance record (unit test marks) was collected from the class teachers.

Later, all adolescent athletes were randomly divided into experimental and control group.

- **Experiment:**

Experimental group received intervention of Anxiety Management Training Program (AMTP)

No intervention was planned for the control group.

- **Post Test**

After completing the intervention, post test (CSAI-2) was conducted for experimental and control group.

Academic performance record (Terminal examination marks) was collected from the class teachers.

3.9 Method of Analysis of Data

3.9.1 Data Analysis for Survey:

After completing data collection, the data was coded using the tool manual. The responses of the adolescent athletes were scored according to criterion specified in the tool manual. The MS excel – computer statistical package was used to analyze the data, in accordance with the research objectives. The Analysis techniques involved both descriptive and inferential statistics. As required, graphical presentation of the data was also prepared for better interpretation of data. School wise, gender wise data sheet was prepared. Mean, standard deviation was calculated.

3.9.2 Data Analysis for experimental study:

To test formulated hypotheses in the present study, statistical methods were adopted to analyze the data. The ‘t’ statistics was used to determine if there was any significant difference in the pre test and post test scores of cognitive and somatic anxiety and to determine significant difference in the post test scores in the academic performance of the experimental group.

3.10 Time Schedule of the study

While conducting the test, researcher needs to limit herself with time schedule. It helps researcher to complete her work within that time frame.

Table no 3.5 Time line of the research study

No	Tasks	Months & Year
1	Proposal Writing, Review of Literature	June, July, August 2013
2	Review of Literature	August, September, October 2013
3	Tool Construction	September, October 2013
4	Data Collection - Survey	October, November, 2013
5	Data Collection - Survey	December 2013 , January 2014
6	Coding	February 2014
7	Data Analysis	March 2014
8	Planning Intervention Program	January - March 2014
9.	Intervention Program-changes if needed	April, May 2014
10	Intervention –Anxiety Management Training	June 2015 to November 2015(6months)
11	Post –testing Data Collection	December 2015
12	Coding , Data Analysis	January 2016 to June 2016
13	Report Writing	July 2016 to March 2017

3.11 Summary

This chapter has highlighted the methodology adopted for the present study.

Survey research design and Pretest - Posttest control group design was found relevant as it enables the researcher to assess variables as they were. The sample size of the study for survey was 370 adolescent athletes from six schools from P.C.M.C area.

Purposive sampling method was used to select the respondents. The study used a standardized tool to collect data: Competitive State Anxiety Inventory -2and academic examinations conducted in the school.

-X-X-X

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CHAPTER 4

DESIGN AND IMPLEMENTATION OF THE EXPERIMENTAL STUDY

4.1 Introduction

In Chapter one, Researcher discussed about the research problem. In Chapter two, Researcher shared about different literature reviewed. In Chapter three, methodology of the present research was discussed.

In this chapter researcher is elaborating about the experiment ‘Anxiety Management Training Program’ conducted. This chapter contains design and planning of the experimental study. This chapter also contains session wise report of intervention conducted with experimental group. This will give lot of clarity about the experiment conducted with the experimental group.

As researcher wanted to understand effect of dependent variable that is ‘Anxiety Management Training Program’ on dependent variable that is ‘Cognitive and Somatic Anxiety’ of adolescent athletes/ athletes , this training program was designed.

While conducting survey, Researcher realized that there is very little awareness of being anxious during pre-examination and pre-competition time. Coaches, teachers and parents too are not aware of scientific methods to help their students/ athletes to reduce their anxiety. Researcher decided to conduct Anxiety Management Training Program only with students / athletes because of time constraints.

4.2 Organization of the chapter is as follows:

- Brief description of theoretical base of ‘Anxiety Management Training Program’
- Description of the steps followed for the development of Anxiety Management Training

4.3 Brief description of theoretical base of ‘Anxiety Management Training Program’ (AMTP)

Anxiety Management Training Program was designed to reduce cognitive and somatic anxiety of adolescent athletes/ athletes.

After reviewing literature related to the Anxiety Management Training Program, researcher decided to conduct the experimental study into three phases- Educational Phase, Acquisition Phase and Practice Phase.

- **Educational Phase** - The first phase of **AMTP** program is **educational** phase because many sport participants are unfamiliar with theoretical part of the psychological skills and how psychological skill can enhance learning and performance (Weinberg & Gould, 2007). The education phase assists an athlete to identify basic psychological skills/methods, and recognize their own personal use or patterns regarding each skill/method (Vealey, 1988). The important part of the education phase involves increasing athletes’ awareness of the role that psychological skills play in performance and personal growth (Ravizza, 2001). In the education phase participants recognize the importance of learning the psychological skills and how the skills affect sportive performance.

In this time period Researcher should explain the importance of developing psychological skills. For example, while teaching the skill “team cohesion”, Researcher needs to explain benefits of team cohesion and the relationship between team cohesion and personal & performance excellence. Researcher needs to teach principles of team cohesion and evaluate current case of team cohesion. Learning the importance of team cohesion is crucial and Researcher can give examples.

- **Acquisition Phase**- Second phase of the **AMTP** is **acquisition** phase that focuses on strategies and techniques for learning the various psychological skills (Weinberg & Gould, 2007). During the acquisition phase, the athlete enhances existing skills / methods or develops new skills / methods through a combination of practice, monitoring and reinforcement (Vealey, 1988). In this phase, athletes learn how to use **AMTP** methods and how best to implement them. Formal sessions with Researcher are used to teach the athlete the relevant methods that they require, and then they should practice them by themselves, until they are competent in those methods (Weinberg & Gould, 2007).

- **Practice Phase** - Third phase of **AMTP** is **practice** phase means that athlete devotes time and effort to psychological skills and complete training in both competition and practice (Horn, 2002). In the practice phase, the athlete performs the skills / methods systematically in order to integrate them into his / her practice and competition routines (Vealey, 1988).

The Practice Phase is the longest phase of the three phases. This phase is when the athlete just practices the methods that are relevant to them, until they have accomplished the three primary objectives of this stage.

The three primary objectives of the practice phase are:

1. To automate psychological skills through over learning – i.e. practicing PST methods every day until the skills that the athlete wants become automatic;
2. To teach the athlete to systematically integrate psychological skills into their competitive situations – i.e. using mental imagery before a competition to decrease anxiety level;
3. To simulate the psychological skills that athlete needs in competition – i.e. using self-talk to increase self-confidence (Weinberg & Gould, 2007).

4.4 Description of steps followed for the development of Anxiety Management Training

A series of fifteen booklets is developed by ‘Yashwantrao Chavan Maharashtra Open University (YCMOU) for research purpose. Researcher referred booklet (No.15) which depicts about construction of research tool in thirteen steps. This was very helpful as it gave clarity to the researcher about entire process of designing, executing and evaluating research tool. Fifteen Steps of the construction of research tool are as follows.

4.4.1 Step 1-Role of research tool in the present research.

Research tool in this research is ‘Anxiety Management Training Program’. This training program is used as an intervention for Experimental group for helping them to manage their anxiety.

4.4.2 Step 2- Specific Objectives of the research tool.

Overall objective of this training program was to develop skills of anxiety management among adolescent athletes. To elaborate this step, researcher has mentioned session wise objectives of the Anxiety Management Training Program.

Session wise Objectives of the Anxiety Management Training Program

There are total Forty one (41) sessions planned in the experimental study. Following are the objectives of each session.

Session 1: To measure state of Cognitive and Somatic Anxiety (CSAI-2) of participants of experimental and control group. (n=70)

Session 2: To introduce the relation between Competition, Examination and Anxiety

Session 3: To develop awareness about effects of anxiety on mind (thinking process) and body

Education Phase

Session 4: To help adolescent athletes understand meaning of Goal Setting and importance of goals

Session 5, 6: To help adolescent athletes understand meaning of goals, SMARTER goals

Session 7: To make adolescent athletes understand types of goals-Process, performance goals

Session 8, 9: To help adolescent athletes understand meaning of Concentration with reference to academics and sports

Session 10: To help adolescent athletes understand meaning of Distraction and learn concentration technique (zones of concentration)

Session 11: To help adolescent athletes learn various exercises to improve concentration

Session 12: To assist adolescent athletes to understand meaning of Positive Self talk and understand different examples of self talk in varied situations

Session 13: To help adolescent athletes understand techniques of identifying self talk, types of self talk

Session 14: To help adolescent athletes understand meaning of Negative self talk and its ill effects on body and mind

Session 15: To assist adolescent athletes to understand various uses of positive self talk

Session 16: To help adolescent athletes understand meaning of Mental Imagery and various examples of imagery in everyday life

Session 17: To help adolescent athletes understand the process of using Imagery

Session 18: To help adolescent athletes understand different types of Imagery

Session 19: To help adolescent athletes understand process of using five senses while practicing Imagery

Session 20: To help adolescent athletes understand meaning of emotion, primary and secondary emotions, emotions experienced during examination and competition time

Session 21: To develop insight among adolescent athletes to understand meaning, need and advantages of emotion regulation

Session 22: To help adolescent athletes understand types of emotions and techniques of emotion regulation

Session 23: To help adolescent athletes understand different tracks of emotion

Acquisition and Practice Phase

Session 24, 25, 26: To help adolescent athletes prepare yearly, monthly, weekly and daily goals in sports and academics

Session 27, 28, 29: To help adolescent athletes to practice techniques of concentration

Session 30, 31, 32: To help adolescent athletes convert negative self talk to positive self talk

Session 33, 34, 35: To help adolescent athletes understand to use imagery techniques during classroom and sport situation

Session 36, 37, 38: To help adolescent athletes to revise concept of track of emotions and helping them to remain in 'tolerable' track of emotions

Session 39, 40: To motivate adolescent athletes to write their feedback regarding anxiety management training program

Session 41: To measure state of cognitive and somatic anxiety on CSAI-2 (n=70) of experimental and control group

4.4.3 Step 3-Nature and Planning of the research tool

Researcher wanted to enhance capacity of Anxiety reduction of adolescent athletes, so researcher developed this training program. This training program consists of series of techniques such as Goal setting, Concentration, Positive Self talk, Imagery, Emotion Regulation, Relaxation techniques and Yoga practice.

Duration of the complete training program was for three and half months. Each session was conducted for thirty five minutes and for alternate days. School allotted time to conduct training was 9.30 am to 10.15 am in the morning. Researcher herself conducted this training program. Researcher practices Iyengar yoga since last twelve years, so she herself instructed and helped participants to learn and practice yoga asanas. School allotted their training hall to conduct this training program.

4.4.4 Step 4- Construction of the research tool

Initially, while designing and constructing Anxiety Management Training Program, researcher pursued following process.

- Since researcher is involved in training of adolescent athletes from last twelve years, referring previous case studies helped researcher to short list topics, activities of training program
- Referencing from Sport Psychology books, Anxiety Management training program manual, going through various training programs from internet

- Discussion- As the training program was in process discussion with experts from the field of Psychology, Physical Education, Life skill Training Educators
- Listing down activities to be conducted before, during and for practicing mental technique
- Total training program was categorized in three phases as per experts suggestions
- Care was taken to make training program more participatory to avoid monotony of facilitator
- Experts' suggestions helped researcher to plan the order of mental techniques (From simple mental techniques like Goal setting to complex mental techniques like Emotion Regulation)

4.4.5 Step 5- Description of the research tool

Table No 4.1 Outline of Anxiety Management Training Program

Session No	Introductory Activity	Content of the session (Cognitive Anxiety)	Somatic Anxiety
Duration	5 minutes	20 minutes	10 minutes
1 <u>Pretesting</u>		Pre-test of Competitive State Anxiety Inventory-2 (n=70)	
2		Introduction of the research topic (What is difference between play, game and competition? Expectations from competition, difference in competition and practice, what is anxiety)	Relaxation
3	Experience Of a player	How anxiety affects us— Mind body coordination, thought process and our body, How to manage this anxiety, let us learn some methods of Anxiety Management	Asanas
4 <u>Education Phase</u>	Game of dots	Goal Setting- what are goals, (difference in goals and priorities) what do you mean by goal setting, Importance of Goals (football example –what if there are no goal posts),	Relaxation
5		Why set goals, SMARTER goals, set your goals	Asanas
6		SMARTER goals continued	Relaxation
7		Types of goals- Duration wise - long term and short term Content wise - outcome goals, process/performance goals	Asanas

Session No	Introductory Activity	Content of the session (Cognitive Anxiety)	Somatic Anxiety
Duration	5 minutes	20 minutes	10 minutes
8	Game	Concentration- Explanation of concentration with help of worksheet(four components)	Relaxation
9		What is concentration, synonyms of this term (attention, focus) Definition in relation with sports (discuss 4 parts with examples)	Asanas
10		What is distraction, discuss external and internal distracters, how to identify our own distracters Learning concentration techniques – zones of concentration	Relaxation
11		Exercises to improve concentration, summing up the topic	Relaxation
12		Positive Self-Talk What is self talk; examples of self talk in different situations	Asanas
13		Types of self talk -3 types, Identifying type of self talk	Relaxation
14		Ill effects of negative self talk, emotional impact of positive and negative self talk on academic and sports performance	Asanas
15		Uses of positive self talk, techniques to improve self talk Exercises for changing negative self talk to positive self talk	Relaxation
16		Mental Imagery What is meant by Imagery, examples of imagery, need to learn mental Imagery, How imagery works	Asanas

Session No	Introductory Activity	Content of the session (Cognitive Anxiety)	Somatic Anxiety
Duration	5 minutes	20 minutes	10 minutes
17		How Imagery can improve performance Tips to learn and use of Imagery Cognitive and motivational functions of Imagery	Relaxation
18		Types of Imagery(external and internal) Specific factors to consider in relation to Imagery Benefits of using Imagery. Using five senses while doing imagery, functions of Imagery in sport, uses of imagery, tips to learn and use Imagery	Asanas
19		Experiencing various sport/academic situations to the participants through imagery. Revision of the concept, experiencing mental imagery using five senses, practicing imagery to learn particular sport skill, to gain confidence, to rehearse sport skill etc.	Relaxation
20		Emotion Regulation Meaning of emotions Primary and secondary emotions Concept of frequency-intensity and duration of emotion emotions experienced in sports, while studying, effect of pre-competitive/exam emotions on performance during competition and exam, strategies of emotion regulation	Asanas

Session No	Introductory Activity	Content of the session (Cognitive Anxiety)	Somatic Anxiety
Duration	5 minutes	20 minutes	10 minutes
21		The emotion regulation topic continued in this session. What is emotion regulation? Need of emotion regulation Advantages of emotion regulation	Asanas
22		Emotions expressed during exam time or sport competition time (This time is divided into three phases for convenience- pre exam/competition, actual exam/competition and post exam/competition) Emotions expressed during these three phases Effect of these emotions on our thoughts and behavior Types of emotions- not positive and negative but helpful and harmful Strategies of emotion regulation	Asanas
23		Emotions are classified into four categories. They are as follows: - Intolerable, tolerable, well tolerable, very well tolerable. It is important to remain in the track of well tolerable emotions. Examples were given to explain the concept	Asanas
24,25,26 <u>Acquisition and Practice Phase</u>		Goal setting- Participants prepared worksheets to refer to their monthly, weekly and daily goals. Feedback discussion was carried out to understand participants' difficulties to achieve their goals. Alternative program was suggested with help of group discussion.	Asanas

Session No	Introductory Activity	Content of the session (Cognitive Anxiety)	Somatic Anxiety
Duration	5 minutes	20 minutes	10 minutes
27,28,29		Concentration- Researcher revised the concept of concentration to the participants. Different exercises to improve ‘Concentration’ were taught to the participants in the ‘Education phase’. Researcher prepared worksheet for the participants, in which schedule of these techniques was mentioned.	Asanas
30,31,32		Positive Self talk- The concept of self talk was revised for the participants. Participants were instructed to note down few ‘self talks’ they talk during their classroom academic sessions and sport training sessions. Later, they exchanged their write-ups with their friends. Then they were asked to categorize these self talks into three categories that is – positive (motivational), Negative (destructive) and instructional. Participants later calculated them into percentages. Next step was, participants were asked to convert negative self talk into positive one. This activity was conducted as a group activity.	Asanas

Session No	Introductory Activity	Content of the session (Cognitive Anxiety)	Somatic Anxiety
Duration	5 minutes	20 minutes	10 minutes
33,34,35		Imagery- The concept of Imagery was revised for the participants. This method was applied to the other parts of their training regime. Participants started using imagery technique before their practice sessions. They experienced feeling of self control, confidence and practice without fear and anxiety.	Asanas
36,37,38		Emotion Regulation- The concept of Emotion Regulation was revised for the participants. As it was discussed in the education phase, that to regularize emotions it is important to remain in the track of well tolerable emotions (satisfaction, happiness, enthusiasm and confidence).	Asanas
39,40		Researcher asked all the participants of the experimental group to respond to the mental training sessions conducted so far. Participants talked about the mental skills training program	Asanas
41		Post testing was conducted using CSAI-2 questionnaire (n=70)	

4.4.6 Step 6- Pilot testing of the research tool

Pilot study of the tool-

Before conducting actual experimental study, pilot study was conducted with the group of thirty five (35) Lawn Tennis players. Fifteen (15) sessions were conducted with this sample group. According to the feedback received by the participants of pilot study, further changes were made in the actual experimental study.

4.4.7 Step 7- Validity and reliability of the research tool.

Training program was discussed with experts and it was ensured that this training program will develop the positive effects of anxiety management among adolescent athletes.

4.4.8 Step 8-Necessary changes in the research tool according to the feedback from participants during the pilot study.

According to the feedback received by the participants in the pilot study, researcher made following changes.

- Theme related activities were planned before starting sessions during the Educational phase.
- More number of sessions was planned for learning various techniques of skills in the acquisition and practice phase

4.4.9 Step 9- Pre testing and final research tool.

With the help of review of related literature and feedback received from pilot study; final version of design of anxiety management training program was prepared.

4.4.10 Step 10- Actual Implementation of the training Program

- **Orientation to the Participants**

Researcher obtained written permission from the school Principal to conduct experiment that is 'Anxiety Management Training Program'. Parents of the athlete students were requested to sign the consent paper. To make the athlete students familiar

to the training program an orientation class was arranged. Student athletes, their parents and respective coaches attended the orientation session. The researcher explained the purpose of the study to the athlete students and their role in the study. Orientation session was conducted for one clock hour. As athletes were randomly divided into experimental as well as control group, all athletes listened to this session wholeheartedly. Some doubts were asked by parents and coaches, which were answered by the end of the orientation session.

- **Session-wise execution and Report of the ‘Anxiety Management Training Program’**

Session No – 1

The objective of this session was pre testing of CSAI-2. Forty five student athletes participated in the pre testing session. This test measures anxiety during competition time. At the time of the pre-testing there were no sports competition scheduled, so researcher created simulated environment of sports competition. Student athletes could visualize their past experiences of sports competition and examination. Student athletes discussed their memorable sports competition and exam time experiences with the researcher. This pre testing discussion helped student athletes to imagine their experiences related to anxiety.

Student athletes were asked to mark their answers on the questionnaires. Since, the language of the test is simple; student athletes could easily answer the test questions.

Pre-testing continued for 35 to 40 minutes.

Session No -2

In this session researcher discussed research topic with the experimental group.

Researcher elaborated about the various concepts regarding play, game and competition. Distinct difference about play, game and sport was highlighted. Student athletes enthusiastically participated in this discussion. This discussion made athletes realize special needs of sports competition and examination.

Later, interaction took place with help of some of these questions. For e.g., why do we feel anxious? How our body reacts when we feel anxious? What is our thought process

when we are anxious? How anxiety affects our mind? Generally how do we manage our anxiety?

This was followed by asana practice for 10 minutes.

Session No-3

Researcher tried to understand nature of anxiety during sports competition and examination from the student athletes; student athletes found lot of similarities between these two anxieties. Researcher elaborated on how anxiety affects us and how scientifically we can manage our anxiety.

This was followed by asana practice for 10 minutes.

Session No 4

Goal Setting-1

Researcher started her training sessions with topic 'Goal-setting'.

Researcher started her session with a story of a football ground and football players. Football players are supposed to play football with opposite team, using their best technical skills but without a 'goal post'. So what will be players' reaction for this change? They have to play, but they will not know where to take their ball. And there will be lot of chaos. Football cannot be enjoyed. It was concluded that without a goal post, it is impossible to play foot ball. Story tells us importance of goals in our lives.

Following activity was conducted with the participants.

Step One: Participants were asked to draw dots on one plain sheet of paper, but before actually drawing the dots, they were asked to note down the estimated number of dots they will draw in one minute.

Step Two: All the participants noted down the number, later researcher marked the time and participants began to draw the dots

Step Three: Participants counted the dots.

Step four: They noted difference in estimated number and actually drawn number

Step Five: Now again note down the estimated number of dots, and start drawing the dots.

Step Six: Count the number of dots

Step Seven: Find out difference in the estimated number of dots and actual dots

Later, during the discussion session some of the following points were discussed.

- Goals should be decided according to one's capability
- One must never underestimate oneself
- Goals increases effectiveness of the task to be performed
- What are the reasons for difference in estimated number and actual number

This was followed by asana practice for 10 minutes.

Session No 5

Goal Setting -2

Theoretical part of Goal Setting was discussed in this session.

Goals need to be 'SMARTER'. Here SMARTER word is an acronym which stands for :

S- Specific, M- Measurable, A – Attainable, R- Relevant, Realistic, T- Time Phased, E- Exciting, R- Recorded.

The above mentioned concept was explained with example in academics. Researcher explained the concept with an example, later participants were asked to write one example.

This was followed by asana practice for 10 minutes.

Session No 6

Goal Setting -3

SMARTER goal setting was continued with discussion of example in sports. Researcher explained the concept with an example in sport of skill training, later participants were asked to write one example. At this point, participants needed help of researcher to write down an example.

Examples which were written down were discussed in the session. Participants were encouraged to write appropriate examples.

This was followed by asana practice for 10 minutes.

Session No 7

Goal Setting -4

Goals have two important aspects i.e., Process goals and Performance goals.

Process goals are focused more on efforts, physical movements and game strategies.

Athletes and students have high degree of control over these goals.

Whereas, Performance goals focused on end results, finishing places or medals.

Athletes and students have very little control over the results of competition or examination.

Activity was conducted to get the better understanding of this topic. Four groups were made and they were asked to write Process and Performance goals for the following topics. 1) By-hearting (Memorizing) the poem, 2) By-hearting the tables, 3) teaching specific sports skill and 4) By-hearting spellings.

Participants were made aware of long term and short term goals with appropriate examples.

After discussing in the group, participants presented their write ups, which was quite satisfactory.

This was followed by asana practice for 10 minutes.

Session No 8

Concentration -1

Activity was conducted to introduce new topic-Concentration.

Four rubber balls of different sizes were collected; some were flashy, colorful, soft, hard, throwing LED light. All the participants stood in big circle. Four participants were asked to play with all four balls, participants standing in the circle were asked to concentrate only on the ball which was throwing flash light. To distract participants loud music was played. Researcher also moved in and out of the circle.

Later, while discussing participants shared their views that since there were four balls it was difficult for them to concentrate only on one single ball. They even mentioned there were many distracters in and around. Some are within and some are outside i.e.; in our surroundings. They are named as internal and external distracters.

This was followed by asana practice for 10 minutes.

Session No 9

Concentration -2

While understanding definition of concentration, participants were made aware of two aspects of definition of concentration i.e.; selective attention and maintaining that attention. This concept was explained with various examples related to sports and academics.

Two activities were conducted. One paper containing different letters was given, participants were asked to strike off letter 'R' only in one minute. Then participants counted how many 'R' they could strike off and how many still remained.

Topic distracter was discussed. Meaning distracter was discussed. Another activity was conducted: List of distracters was provided to the participants. They were asked to name which distracter they find as internal and external, and were asked to mention it.

Later, participants discussed which distracters are actually applicable to them.

Participants became reflective after this session.

This was followed by asana practice for 10 minutes.

Session No 10

Concentration -3

This session was focused at learning techniques to improve concentration.

‘Zones of Concentration’ is a technique where you start focusing from periphery to the core of the concept. In this technique each zone color symbolize some meaning. For example, green zone symbolizes that since now your exams are one week ahead you must think only related to your studies, you may remember your last year’s exams, and you may plan for your next year’s exam. If you are in green zone, all your thoughts should be related to studies only. If you are in the yellow zone, only plan what I am going to do TODAY. All the thoughts should be about – what is my study plan for only TODAY. And so on with red and golden zone.

Researcher explained the above concept with the help of examples. Later, participants were asked to write with their own examples.

This was followed by asana practice for 10 minutes.

Session No 11

Concentration -4

Few more techniques to improve concentration were explained to the participants in this session.

- Learning to maintain focus- Choose any one object from the surrounding and focus on it as long as you can.
- Close your eyes, bring one sport related object into your mind, now observe that object (in your mind) as long as you can.
- Park your disturbing thoughts- Many times disturbing thoughts may distract you. So just before going for an examination or sport competition, write down all your thoughts on a paper, put that paper in some box. Tell yourself that you will deal with those problems later when you will come back from exam or competition.

After these activities lot of interaction took place between the participants and researcher.

This was followed by asana practice for 10 minutes

Session No 12

Self Talk -1

Worksheet was provided to the participants and they were asked to complete the worksheet. Two activities were conducted in this session.

Activity One - six different situations were categorized; incomplete sentences were written down based on those situations and participants were asked to complete the sentences. For example- ‘When my friends ignore me I feel.....’, ‘I get bored in my science class, when our science teacher enters in our class I feel....’

Activity Two – Four situations were selected for the role play by the researcher. The situations were related to adolescent athletes’ everyday situation either on the play ground or in the classroom. Later, participants were divided into four groups, each group was given one situation, they got enough time to discuss about –how the role play should be performed.

Participants enjoyed both the activities, while giving feedback some of them responded that these activities made them reflect about how they think while playing or studying.

This was followed by asana practice for 10 minutes.

Session No 13

Self Talk -2

Theoretical information about self talk was imparted to the participants. The following are some of the important points.

- What is self talk?-(self talk is our thought)
- Three types of self talk (Positive-motivational, instructional, negative-destructive)
- Examples of the above three types were discussed with help of a worksheet- participants were encouraged to identify the type of self talk

This was followed by asana practice for 10 minutes.

Session No 14

Self Talk -3

The following important points were discussed in this session with help of the worksheet.

- Bad effects of negative self talk (on academics and sports performance)
- What is the emotional impact of any kind of self talk? (positive self talk gives positive emotions, negative self talk give negative emotions)
- How to transform negative self talk into positive self talk

This was followed by asana practice for 10 minutes.

Session No 15

Self Talk -4

The following important points were discussed in this session with help of activities and examples.

- Why positive self talk is important?
- What are the uses of positive self talk?
- Researcher came out with a negative self talk and each participant was given opportunity to change that sentence into positive self talk

Participants later discussed that, prior to exams or sports competitions, they tend to think in a negative mode. They realized that it resulted into awful performance in the academics as well as in the sport competition.

This was followed by asana practice for 10 minutes.

Session No 16

Imagery -1

This session started with theory of Imagery.

This session started with an activity. Researcher gave some instructions and participants with closed eyes imagined those instructions. For example :- “Imagine you are entering one vacant room, there in only one small wooden table in the corner of the room, you enter the room, you get the damp smell as the room was closed for many days, you walk towards the windows and open two closed windows, windows are sliding glass windows, they are making sound as windows were closed for many days, suddenly cool breeze starts coming in, you can feel the cool breeze to your cheeks and face. You feel refreshed. Now you go towards the table, one glass plate is there on the table, one lemon is kept on the plate, and you cut this lemon and squeeze it on your tongue. ”

With these instructions researcher tried to give experience of all the senses as far as possible. (Sense of touch, sound, smell, vision and taste)

Researcher explained the following points of Imagery-

- Meaning of Imagery, Some examples of how psychologists define imagery
- Process of Imagery

This was followed by asana practice for 10 minutes.

Session No 17

Imagery -2

Theoretical section of Imagery continued in this session, the following points of Imagery were discussed with appropriate examples.

- How Imagery can improve performance
- Tips to learn and use of Imagery
- Cognitive and motivational functions of Imagery

This was followed by asana practice for 10 minutes.

Session No 18

Imagery -3

Theoretical section of Imagery continued in this session, the following points of Imagery were discussed with appropriate examples.

- Types of Imagery
- Specific factors to consider in relation to Imagery
- Benefits of using Imagery

This was followed by asana practice for 10 minutes.

Session No 19

Imagery -4

In this session researcher tried to experience various situations to the participants through imagery. These situations varied from simple examples like- Imagining tying a knot with a nylon wire, filling grains in the jar, wandering on the sea shore, making a cup of tea, travelling on the motorbike (experiencing pits, speed breakers etc), classroom situations like by hearting poem, observing world map etc.

Researcher demonstrated with help of one runner, runner explained how she takes this stance near starting point in verbatim step by step. Now other participants were asked to sit quietly and researcher read out these instructions (stance at the start of the running race) and participants were asked to create these images in front of their eyes.

Participants in the experimental group were from mixed sports i.e., some were from team games like Kabaddi, and some were from individual games like athletics, yoga, mallakhamb, wrestling.

Participants were motivated to write down instructions of their sport. Later, they were asked to create imagery of their sport, and while doing imagery they were asked to note down which skills they lack.

This was followed by asana practice for 10 minutes.

Session No 20

Emotion Regulation-1

Activity- One worksheet was provided to the participants, wherein one paragraph consisted of emotionality was penned down. After reading this paragraph participants were asked to note down the emotions they pointed out in the paragraph. Here participants could write down very basic emotions like 'happiness, anger, sad, fear' but they could not notice subtle emotions like 'anxiety, concern, complacency, regret etc'

Later, theoretical knowledge was imparted to the participants regarding 'Emotions'. The following points were discussed in this session

- Meaning of emotions
- Primary and secondary emotions
- Concept of frequency-intensity and duration of emotion

This was followed by asana practice for 10 minutes.

Session No 21

Emotion Regulation-2

The following points were discussed in this session

- The emotion regulation topic continued in this session.
- What is emotion regulation?
- Need of emotion regulation
- Advantages of emotion regulation

This was followed by asana practice for 10 minutes.

Session No 22

Emotion Regulation-3

The following points were discussed in this session

- Emotions expressed during exam time or sport competition time (This time is divided into three phases for convenience- pre exam/competition, actual exam/competition and post exam/competition)

- Emotions expressed during these three phases
- Effect of these emotions on our thoughts and behavior
- Types of emotions- not positive and negative but helpful and harmful
- Strategies of emotion regulation

Asana practice was followed for 10 minutes after the session.

Session No 23

Emotion Regulation-4

In the process of emotion regulation, the emotions are classified into four categories. They are as follows: - Intolerable, tolerable, well tolerable, very well tolerable.

The emotions considered in the category of Intolerable are – Anger, depression, regret, guilt, and anxiety

The emotions considered in the category of tolerable are- irritation, concern and sadness

The emotions considered in the category of well tolerable are- satisfaction, happiness, enthusiasm and confidence

The emotions considered in the category of very well tolerable are- laziness, complacency, arrogance and over confidence

It is important to remain in the track of well tolerable emotions. Examples were given to explain the concept.

Acquisition and Practice Phase

Session 24, 25, 26

Goal Setting –

Concept goal setting was revised. Participants referred to the previous notes. SMARTER goals, outcome and process goals were set with the reference to academics and sports too. For academic goals, subject wise goals were set; and with reference to sports - physical fitness, technical skills, psychological skills goals were set. With reference to the duration monthly, weekly and daily goals were set.

Participants prepared worksheets to refer to their monthly, weekly and daily goals. Feedback discussion was carried out to understand participants' difficulties to achieve their goals. Alternative program was suggested with help of group discussion.

Teachers and coaches were also oriented with these psychological skills. Their suggestions and guidance was very valuable for the researcher as well as the participants.

Asana practice was carried out for 10 minutes after every session.

Session 27, 28, 29

Concentration

Researcher revised the concept of concentration to the participants. Some techniques to improve concentration were demonstrated during the initial phase that is in the 'Education Phase' of the experiment.

'Zones of Concentration' is an important technique to improve concentration. Red zone and Golden zone helps athlete to be focused on the ground. To achieve this level of concentration, Researcher accompanied the participants on the play ground too. Athlete was supposed to mention – 'His/her practice schedule for next 20 minutes'. To achieve Golden zone of concentration- athlete is supposed to focus on 'one action at a time'. So, while practicing any technical skill, athlete used to speak loudly on –what action he/she is performing and on what he/she is focusing. This activity helped athlete to focus completely on their present task.

Different exercises to improve 'Concentration' were taught to the participants in the 'Education phase'. Researcher prepared worksheet for the participants, in which schedule of these techniques was mentioned. For example: - Choosing one object from the surrounding and focusing on that single object. Parking the thoughts-Writing down disturbing thoughts on a paper and putting them in a box. This activity was conducted before going for a training session or classroom teaching. Participants mentioned Name of the technique used, duration of the technique and feedback about –How they felt while using that technique.

Asana practice was carried out for 10 minutes after every session.

Session 30, 31, 32

Self Talk

The concept of self talk was revised for the participants.

Participants were instructed to note down few 'self talks' they talk during their classroom academic sessions and sport training sessions. Later, they exchanged their write-ups with their friends. Then they were asked to categorize these self talks into three categories that is – positive (motivational), Negative (destructive) and instructional. Participants later calculated them into percentages. Next step was, they were asked to convert negative self talk into positive one. This activity was conducted as a group activity. Researcher loudly read out negative self talk statements and asked the group 'what will be appropriate positive /motivational statement would be. This group activity helped the participants to reflect to their thinking process. Later participants came out with better positive/motivational self talk statements.

Participants were instructed to make their own 'positive self talk program' where they wrote self talk statements to be revised just before their practice sessions. Two mental training sessions were conducted on the play ground; here participants revised their 'self talk program'. Participants were encouraged to practice this 'self talk program'. After practicing this 'self talk program' participants realized the effectiveness of positive self talk.

Asana practice was carried out for 10 minutes after every session.

Session 33, 34, 35

Imagery

The concept of Imagery was revised for the participants.

Participants were asked to collect images of their sport. For example: - High jump player gathered images of his game skill, in the high jump skill his first step is getting ready to run, high jumper observes the image of a high jumper (position of his hands, legs etc), the next step is high jumper starts running towards high jump bar (exact steps are counted), later he gives jerk to his body and jumps high above the bar and with proper technique tries to make arch of his back and lands slowly on the mat.

When high jumpers in the experimental group, conducted imagery of high jump they realized at what point they make mistakes. Now the task was to carry out imagery of only that part of the skill where participant finds some problem. When participants did this exercise and later actually performed high jump physically, they found that their high jump has been improved.

This method was applied to the other parts of their training regime. Participants started using imagery technique before their practice sessions. They experienced feeling of self control, confidence and practice without fear and anxiety.

Asana practice was carried out for 10 minutes after every session.

Session 36, 37, 38

Emotion Regulation

The concept of Emotion Regulation was revised for the participants.

As it was discussed in the education phase, that to regularize emotions it is important to remain in the track of well tolerable emotions (satisfaction, happiness, enthusiasm and confidence).

Researcher conducted this activity with the help of self talk statements. Any self talk percolates some emotion. To continue with this exercise researcher encouraged participants to write a statement which expresses a particular emotion. For example- participants were asked to write statements which expresses anger, regret, sadness, irritation, arrogance, laziness, satisfaction, happiness etc.

Now participants worked in the group. They were supposed to write set of self talk statements. The initial emotion will be guilt and concluding emotion will be confidence. Researcher demonstrated one set of self talk statements. Each group was allotted pair of emotion that is initial emotion and concluding emotion. Here researcher was careful that initial emotion was from intolerable, tolerable and very well tolerable tracks and concluding emotion was from well tolerable track.

Later, researcher wrote down many pairs of emotion on the black board and participants chose any pair of emotions and noted down set of self talk statements.

Soon after, this activity was continued on the play ground too. Participants just before their performance expressed their initial emotion (for example anxiety) and now with the help of self talk they have to come on the track of confidence. Participants expressed their set of self talk statements outwardly in front of only researcher. This helped not to react to any kind of adverse situation. They started responding to the situation which helped them to regularize their harmful emotions.

Asana practice was carried out for 10 minutes after every session.

Session 39, 40

Feedback Session

Researcher asked all the participants of the experimental group to respond to the mental training sessions conducted so far. Participants talked about the mental skills training program which was found to be very significant and benefitted them as a students and as an athlete too.

These feedback reports are analyzed in the data analyses.

Session 41

Post testing session

Post testing was conducted using CSAI-2 questionnaire. Forty five student athletes from experimental group and student athletes from control group participated in the post testing session

4.4.11 Step 11- Relation between objectives and outcome

The analysis of relation between objectives and outcome is mentioned in detail in Chapter 5-Data Analysis and Data Interpretation.

4.4.12 Step 12- Conclusions and Suggestions

Conclusions and Suggestions regarding this research tool are mentioned in Chapter 6.15 and 6.18.

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CHAPTER 5

DATA ANALYSIS & DATA INTERPRETATION

5.1 Introduction

As the research topic and research hypotheses are decided, the researcher starts working on assessing the research hypotheses. Researcher has to use some statistical processes for quantitative research. A Pre-test of pre-competitive anxiety was conducted on both experimental as well as control group. Experimental group received Anxiety Management Program. At the end of the program, a Post-test of competitive anxiety was conducted on both experimental as well as control group. The results for the Pre Test and Post Test were recorded as data.

After the stimulating activity of experimentation and generation of data comes a further equally important part of the research and that is to analyze the data collected and interpret it. The success and failure of the experiment will only be completely understood after methodical statistical analysis. Certain areas of the subject studied which are not evident also are revealed during the analysis. It is the most satisfying step of the research where the researcher gets to know the worth of the research work conducted by her. The analysis also clarifies newer paths for the researcher to study further after the execution of the present task.

Adolescent Anxiety is a very vast subject and is explored by many researchers but still there are many avenues that remains untouched. The hypotheses of the research thesis also will be evaluated during the analysis. This is the most important part of the research.

Data analysis and interpretation consists of raw data structured in tabular form. The raw data is the answer sheets given by the students during the pre test and post test. Raw data also is the form of answer sheets. This raw data is categorized, classified, summarized into various tables, graphs and calculations in this report. The aim of these activities is to reveal the appropriate information for confirmation or negation of the hypotheses.

So the analysis considered in this research is a quantitative Analysis.

The data collected in this research were quantitative as well as qualitative. So the analysis considered in this research is in both ways.

The data generated during the experimentation will be evaluated based on the statistical methods of evaluation. Quantification is defined as a numerical method of describing observations of the data collected and its characteristics. When a defined portion of the data or the characteristic is used as a standard for measuring any sample, a valid and precise method of data description is provided.

Quantitative analysis can only be applied for some aspects of the observations which are mainly in form of a database.

5.2 Organization of Chapter

The present chapter is organized in the following categories

- A) Survey data analysis
- B) Anxiety related Hypotheses analysis
- C) Graphical presentation of Hypotheses testing
- D) Academics related Hypotheses testing
- E) Findings of the Statistical Treatment
- F) Qualitative Analysis
- G) Conclusion
- H) Discussion of the Results

All the raw scores are given in Appendix B & C.

5.3 Research Hypotheses

1. There will be significant difference in pre test and post test scores of Somatic anxiety level in the experimental group.
2. There will be significant difference in pre test and post test scores of Cognitive anxiety level in the experimental group.
3. There will be significant reduction in post test scores of Somatic anxiety level in experimental group than the control group as compared to the pre-test score.
4. There will be significant reduction in post test scores of Cognitive anxiety level in experimental group than the control group as compared to the pre-test score.
5. There will be significant difference in the difference of pre test and post test scores of total anxiety level of the Experimental group and the Control Group.

6. There will be significant difference in the difference of pre test and post test scores of Somatic anxiety level of the Experimental group and the Control Group.
7. There will be significant difference in the difference of pre test and post test scores of Cognitive anxiety level of the Experimental group and the Control Group.
8. There will be significant difference in the post test scores in the academic performance of the experimental group than the control group as compared to the pre-test scores.

5.4 Survey Data Analysis

To understand the intensity of the cognitive and somatic anxiety, survey was conducted (N=327).

Following is the analysis of the survey.

Table 5.4.1 Level of Cognitive and Somatic Anxiety found in the survey

	n (sample Size)	Cognitive Anxiety			Somatic Anxiety		
		Mean	Median	S.D	Mean	Median	S.D
Total	327	18.03	17	4.33	18.84	18	5.04

From **Table 5.4.1**, it can be stated that, the value of Mean of Cognitive anxiety of Total survey sample is 18.3 and value of Mean of Somatic anxiety of Total survey sample is 18.84. Median score of Cognitive anxiety of Total survey sample is 17 and median of Somatic anxiety of Total survey sample is 18. Mean and median values of Cognitive and Somatic Anxiety of Total survey sample correspond with each other positively.

Table 5.4.2 Highest and Lowest score of Cognitive and Somatic Anxiety found in the survey

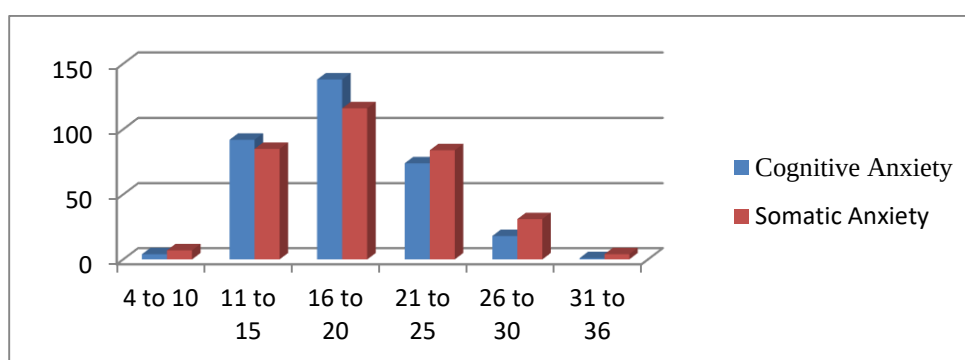
N=327	Cognitive Anxiety	Somatic Anxiety
Highest Score	31	32
Lowest Score	10	9

According to the manual of CSAI-2 Inventory, lowest score of Cognitive Anxiety and Somatic Anxiety is 4 and Highest Score of Cognitive Anxiety and Somatic Anxiety is 36, from **Table 5.4.2**. Thus it can be affirmed that, the sample group demonstrates highest score of cognitive anxiety as 31 and lowest score as 10 and the sample group demonstrates highest score of somatic anxiety as 32 and lowest score as 9.

Table 5.4.3 Range wise number of students athletes found in Cognitive and Somatic Anxiety scores

Range	Cognitive Anxiety	Somatic Anxiety
4 to 10	4	7
11 to 15	92	85
16 to 20	138	116
21 to 25	74	84
26 to 30	18	31
31 to 36	1	4

Graph 5.4.1: Graph showing range of Cognitive and Somatic Anxiety scores



Graph 5.4.1 is a positively skewed graph. It shows that in the range of **16 to 20 raw score**, **42%** students are found in **Cognitive anxiety** and in **Somatic Anxiety** factor **35%** are found. This graph also demonstrates that, that in the range of **21 to 25 raw score**, **23%** of student athletes are found in **Cognitive anxiety** and in **Somatic Anxiety** factor **26%** of student athletes are found. In the range of **26 to 36 raw score**, only **6%** of student athletes are found in **Cognitive anxiety** and in **Somatic Anxiety** factor only **11%** of student athletes are found.

This graph clearly displays that maximum number of participants from survey sample are found in the Average Range of Scores (Average range 16-20 score- Cognitive Anxiety 42%, Somatic Anxiety 35%). We can conclude that, this sample group does not exhibit high level of Cognitive and Somatic anxiety. Only 6% and 11% of survey sample are found in high range of **Cognitive anxiety** and **Somatic Anxiety** respectively. These students will avail necessary guidance to manage their anxiety.

5.5 Normality Testing of Pre Testing Scores of Data

It is necessary to check normality of the data before analyzing data statistically. This can be done in three ways

- 1) By Kolmogorov-Smirnov test
- 2) By plotting graphs
- 3) By Skewness and Kurtosis

1) Kolmogorov-Smirnov Test-

Kolmogorov-Smirnov test is a non-parametric test used to determine normality of data.

To test

Ho: The distribution is not normal.

H1: The distribution is normal.

Test Criteria,

If value of test statistics $KS \leq \text{Table Value}$, We reject Ho; accept otherwise.

Table 5.5.1 Values of KS test of Pre test scores of Experimental and Control group

	Mean	SD	Value of Test Statistics KS	Table value	Conclusion
Pre Cognitive Experimental Group	19.37	5.34	0.09	0.27	Normal
Pre Somatic Experimental Group	19.26	4.22	0.08	0.27	Normal
Pre Cognitive Control Group	18.49	2.9	0.14	0.27	Normal
Pre Somatic Control Group	15.69	4.16	0.09	0.27	Normal

According to the above mentioned Table 5.5.1, value of Kolmogorov-Smirnov test is less than table value; we reject the null hypothesis (H_0). Alternative hypothesis is accepted. This means the distribution is normal.

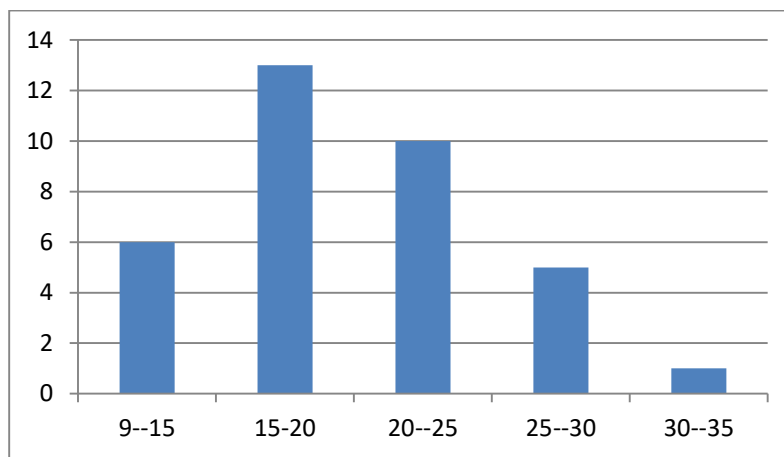
2) By Plotting graphs

To plot graph, one needs to create frequency distribution for the data.

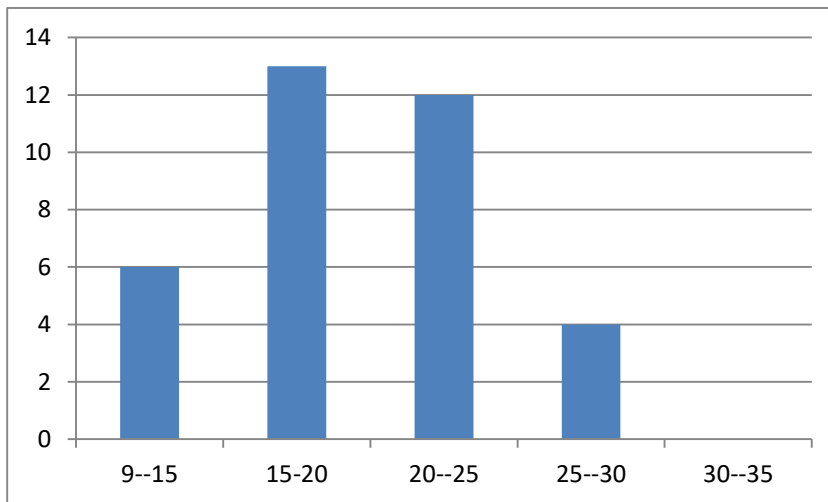
Table 5.5.2 Frequency Distribution of the data for normality testing

Group		9-15	15-20	20-25	25-30	30-35	Total
Experimental	Pretest Scores of Cognitive Anxiety	9	13	10	5	1	35
Experimental	Pretest Scores of Somatic Anxiety	6	13	12	4	0	35
Control	Pretest Scores of Cognitive Anxiety	1	21	13	0	0	35
Control	Pretest Scores of Somatic Anxiety	14	15	4	2	0	35

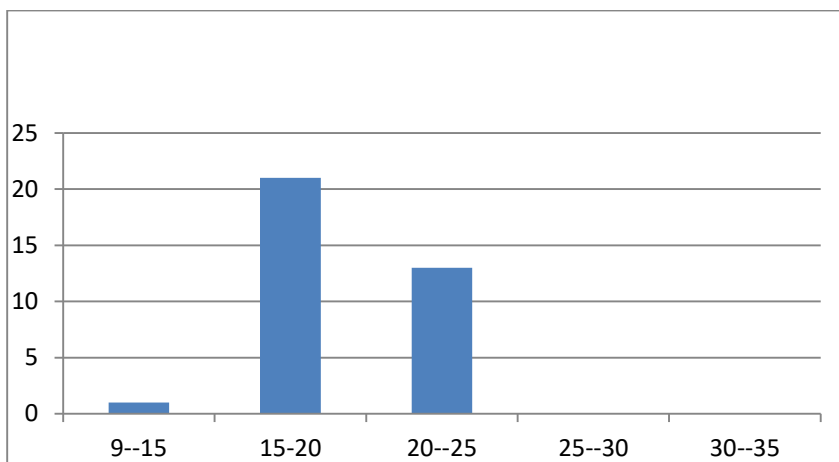
Graph 5.5.1 Pretest Scores of Cognitive Anxiety of Experimental Group



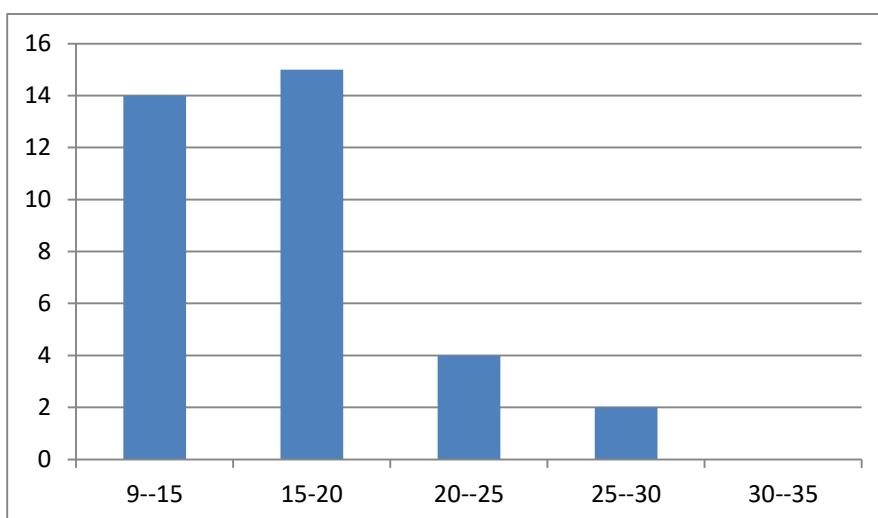
Graph 5.5.2 Pretest Scores of Somatic Anxiety Experimental Group



Graph 5.5.3 Pretest Scores of Cognitive Anxiety Control Group



Graph 5.5.4 Pretest Scores of Somatic Anxiety Control Group



From the above mentioned graphs, it can be stated that the scores of pre test of Experimental and Control group is normal.

3) Skewness and Kurtosis:

Table 5.5.3 Skewness and Kurtosis of pre test scores of Experimental and Control Group

	Experimental Group	Experimental Group	Control Group	Control Group
	Pre test scores of Cognitive Anxiety	Pre test scores of Somatic Anxiety	Pre test scores of Cognitive Anxiety	Pre test scores of Somatic Anxiety
Skewness	0.69	0.019	0.28	0.61
	Positively Skewed	Positively Skewed	Positively Skewed	Positively Skewed
Kurtosis	0.16	-0.82	-1.22	-0.009
	Lepto kurtic	Platy kurtic	Platy kurtic	Platy kurtic

The above mentioned table portray that, pre test scores of Experimental and control group are Positively skewed. Pre test scores Cognitive Anxiety of Experimental group are Lepto kurtic. Pre test scores Somatic Anxiety of Experimental group and Pre test scores of Cognitive and Somatic Anxiety are Platy kurtic.

5.6 Anxiety Related Hypotheses Testing

5.6.1 Testing the Hypothesis 1

Research Hypothesis 1 (H)

There will be significant difference in pre test and post test scores of Somatic anxiety level in the experimental group.

Null Hypothesis (H₀)

There will be no significant difference in pre test and post test scores of Somatic anxiety level in the experimental group.

Alternative Hypothesis (H₁)

Post test scores of Somatic anxiety will be less than the pre test scores in the experimental group.

One tailed t test was used for the statistical analysis with confidence level 0.05%

Table: 5.6.1 “t” statistics for Hypothesis 1

	Pre test	Post test
Mean	19.26	18.40
Standard Deviation(SD)	4.22	4.50
Sample Size (n)	35	35
t calculated	0.82	
Table value at 5%	1.99	
Result at 1%	Accept H ₀	
Result at 5%	Accept H ₀	

Statistical calculation is done by MS Excel software.

Hence, there is no significant difference in pre test and post test scores of Somatic anxiety level in the experimental group.

Testing the Hypothesis 2

5.6.2 Research Hypothesis 2 (H)

There will be significant difference in pre test and post test scores of Cognitive anxiety level in the experimental group.

Null Hypothesis (H_0)

There will be no significant difference in pre test and post test scores of Cognitive anxiety level in the experimental group.

Alternative Hypothesis (H_1)

Post test scores of Cognitive anxiety will be less than the pre test scores in the experimental group.

One tailed t test was used for the statistical analysis with confidence level 0.05%

Table: 5.6.2 “t” statistics for Hypothesis 2

	Pre test	Post test
Mean	19.37	19.23
Standard Deviation(SD)	5.34	4.83
Sample Size (n)	35	35
t calculated	0.12	
Table value at 5%	1.99	
Result at 1%	Accept H_0	
Result at 5%	Accept H_0	

As t value is less than table value at both significance levels we accept null hypothesis. Hence, there is no significant difference in pre test and post test scores of Cognitive anxiety level in the experimental group.

5.6.3 Testing the Hypothesis 3

Research Hypothesis (H)

There will be significant reduction in post test scores of Somatic anxiety level in experimental group than the control group as compared to the pre-test score.

Null Hypothesis (H₀)

There will be no significant reduction in post test scores of Somatic anxiety level in experimental group than the control group as compared to the pre-test score.

Alternative Hypothesis (H₁)

There will be significant reduction in post test scores of Somatic anxiety level in experimental group than the control group as compared to the pre-test score.

One tailed t test was used for the statistical analysis with confidence level 0.05%

Table: 5.6.3 “t” statistics for Hypothesis 3

	Experimental Group	Control Group
Mean	0.86	1.11
Standard Deviation(SD)	3.29	3.31
Sample Size (n)	35	35
t calculated	0.33	
Table value at 5%	1.99	
Result at 1%	Accept H ₀	
Result at 5%	Accept H ₀	

As t value is less than table value at both significance levels, we accept null hypothesis. Hence, there is no significant reduction difference in post test scores of Somatic anxiety level in the experimental group.

5.6.4 Testing the Hypothesis 4

Research Hypothesis 4 (H)

There will be significant reduction in post test scores of Cognitive anxiety level in experimental group than the control group as compared to the pre-test score.

Null Hypothesis (H₀)

There will be no significant reduction in post test scores of Cognitive anxiety level in experimental group than the control group as compared to the pre-test score.

Alternative Hypothesis (H₁)

There will be significant reduction in post test scores of Cognitive anxiety level in experimental group than the control group as compared to the pre-test score.

One tailed t test was used for the statistical analysis with confidence level 0.05%

Table: 5.6.4 “t” statistics for Hypothesis 4

	Experimental Group	Control Group
Mean	0.14	3.31
Standard Deviation(SD)	4.06	3.17
Sample Size (n)	35	35
t calculated	3.64	
Table value at 5%	1.99	
Result at 1%	Reject Ho	
Result at 5%	Reject Ho	

As t value is greater than table value at both significance levels, we **Reject** null hypothesis. Hence, there is significant reduction in the post test scores of Cognitive anxiety level in the experimental group.

5.6.5 Testing the Hypothesis 5

Research Hypothesis 5 (H)

There will be significant difference in the difference of pre test and post test scores of total anxiety level of the Experimental group and the Control Group.

Table: 5.6.5 Difference in Post test and Pre test (Total Anxiety)
Means of Experimental and Control Group

Total Anxiety	Experimental Group	Control Group
Mean	1.00	4.43

There is significant difference in difference of Total anxiety level in the experimental group as well as Control Group. But difference in Control Group is more significant than Experimental group. Hence, t test was not applied. This issue is further discussed in Discussion 5.11

5.6.6 Testing the Hypothesis 6

Research Hypothesis 6 (H)

There will be significant difference in the difference of pre test and post test scores of Somatic anxiety level of the Experimental group and the Control Group.

Table: 5.6.6 Difference in Post test and Pre test (Somatic Anxiety)
Means of Experimental and Control Group of Somatic Anxiety

Somatic Anxiety	Experimental Group	Control Group
Mean	0.86	1.11

There is significant difference in difference of Somatic anxiety level in the experimental group as well as Control Group. But difference in Control Group is more significant than Experimental group. Hence, t test was not applied.

5.6.7 Testing the Hypothesis 7

Research Hypothesis 7 (H)

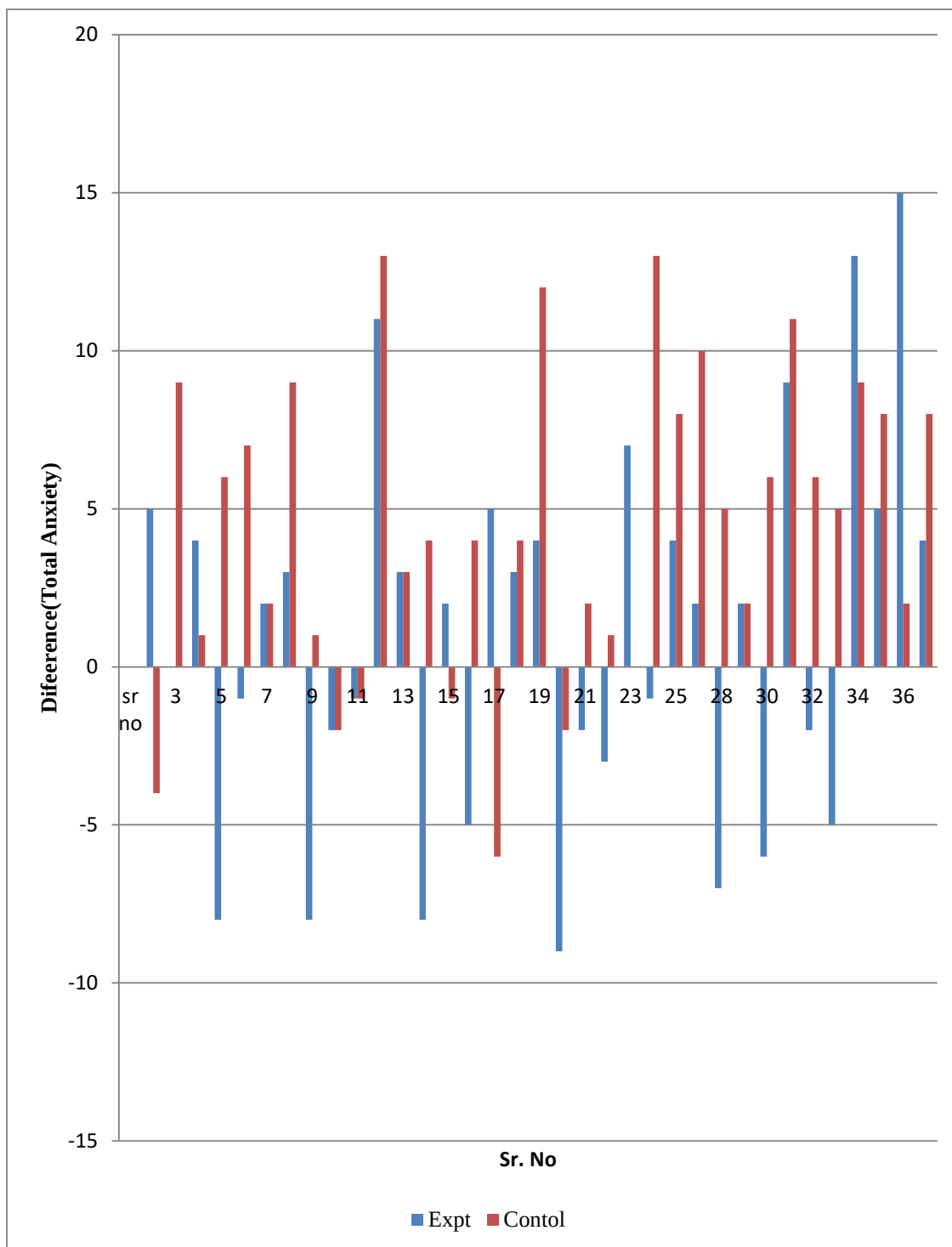
There will be significant difference in the difference of pre test and post test scores of Cognitive anxiety level of the Experimental group and the Control Group.

Table: 5.6.7 Difference in Post test and Pre test (Cognitive Anxiety)
Means of Experimental and Control Group

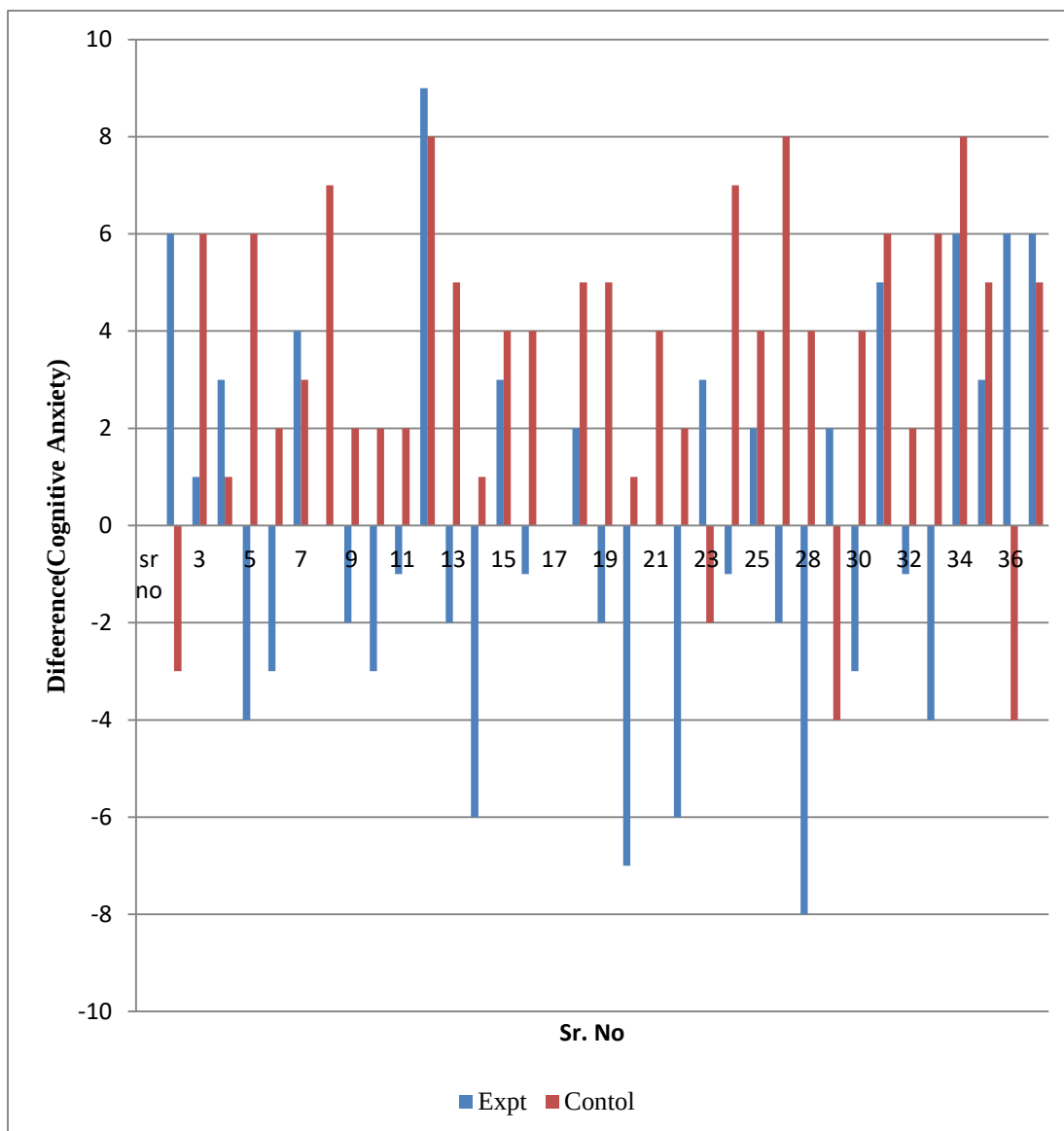
Cognitive Anxiety	Experimental Group	Control Group
Mean	0.14	3.31

There is significant difference in difference of Cognitive anxiety level in the experimental group as well as Control Group. But difference in Control Group is more significant than Experimental group. Hence, t test was not applied.

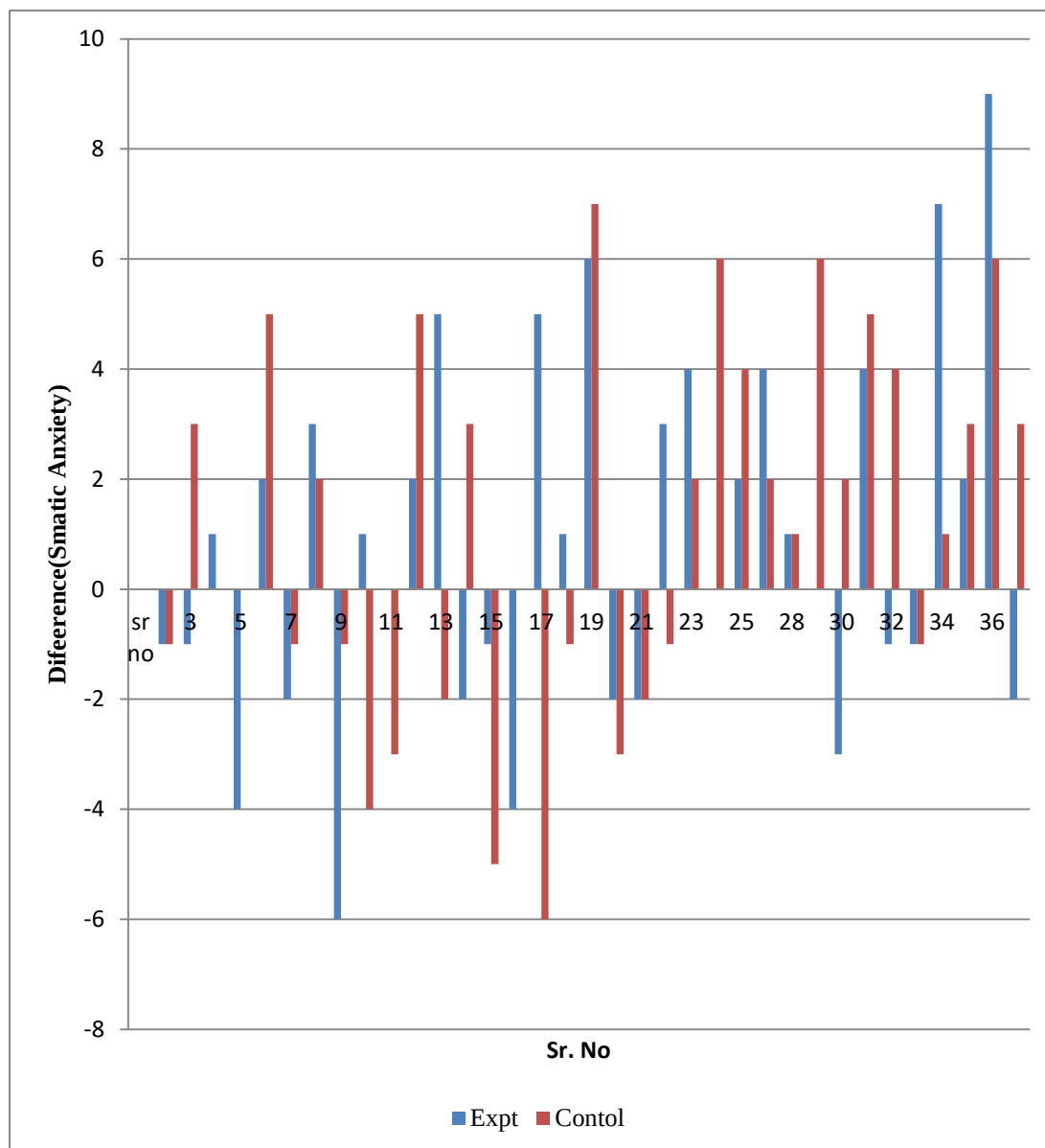
Graph 5.6.1: Comparison between Experimental and Control Group with respect to difference in the score of Total Anxiety



Graph: 5.6.2 Comparison between Experimental and Control Group with respect to difference in the score of Cognitive Anxiety



Graph: 5.6.3 Comparison between Experimental and Control Group with respect to difference in the score of Somatic Anxiety



5.7 Graphical Analysis of the Anxiety Scores

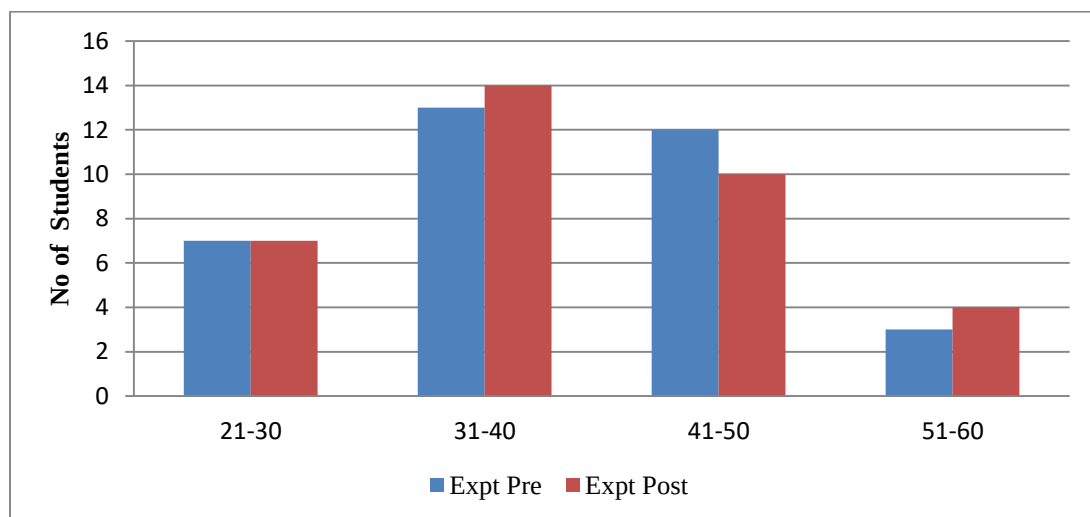
5.7.1 Discussion about Total Anxiety Scores of Experimental Group

After completing analysis for mentioned hypotheses researcher carried out few more steps of analysis more specifically, steps with respect to pictorial representation. Researcher got some optimistic results which are presented henceforth.

Table: 5.7.1 Frequency Distribution of Total Anxiety scores of Experimental Group

	Total Anxiety Score			
	21-30	31-40	41-50	51-60
Experimental group Pre Test	7	13	12	3
Experimental group PostTest	7	14	10	4

Graph 5.7.1 : Graph showing comparison between Total Anxiety Score of Pre test and Post test of Experimental Group



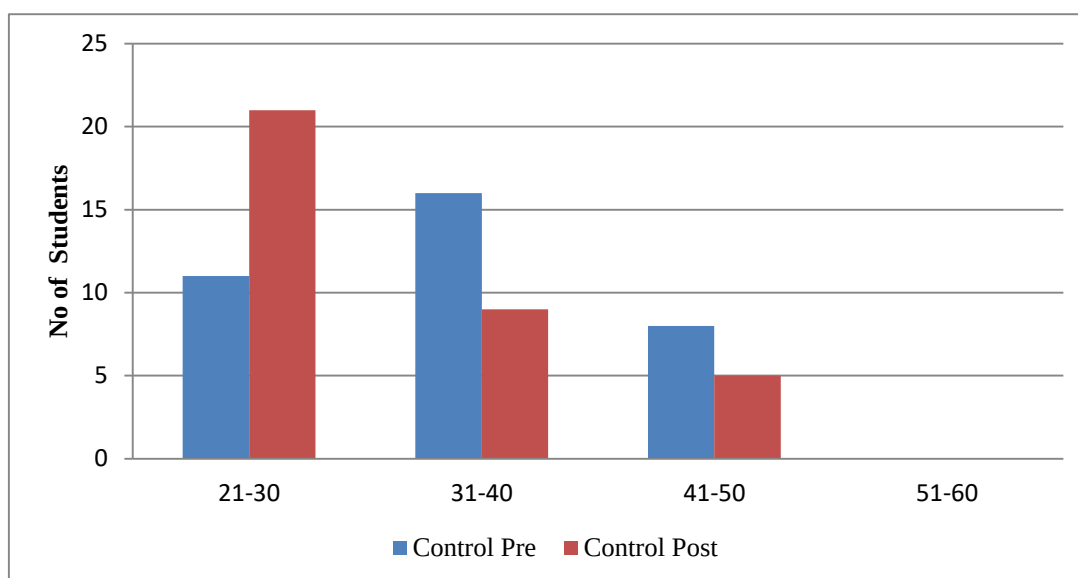
From Graph 5.7.1, It can be seen that number of students in lower anxiety group are more than that of higher anxiety group. Though there is reduction in the number of students in post test scores (Please refer to range 41-50), Anxiety Management Training Program is found to be effective for some participants.

5.7.2 Discussion about Total Anxiety Scores of Control Group

Table: 5.7.2 Frequency Distribution of Total Anxiety scores of Control Group

	Total Anxiety Score			
	21-30	31-40	41-50	51-60
Control group Pre Test	11	16	8	0
Control group Post Test	21	9	5	0

Graph: 5.7.2 Graph showing comparison between Total Anxiety Score of Pretest and post test of Control Group



From Graph 5.7.2 , It can be seen that number of students in lower anxiety group are more than that of higher anxiety group.

There is reduction in the number of students in the post test scores (Please refer to range 31-40 and 41-50), even though no Anxiety Management Training Program was conducted.

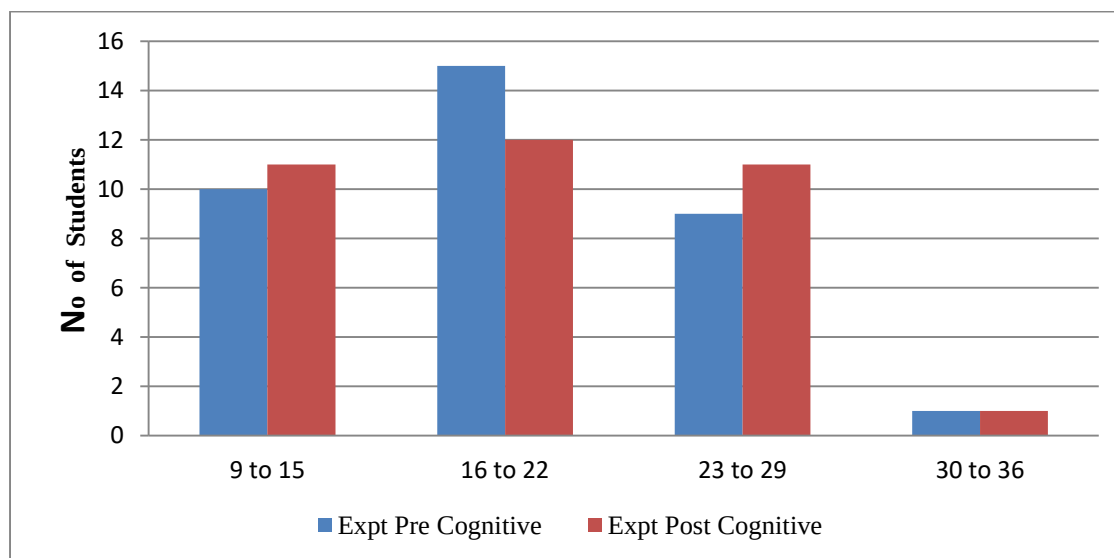
Researcher needs to find out reasons for the same.

5.7.3 Discussion about frequency distribution of Cognitive Anxiety Scores of Experimental and Control Group

Table: 5.7.3 Frequency Distribution of Cognitive Anxiety scores

	Cognitive Anxiety Score			
	9-15	16-22	23-29	30-36
Experimental group Pre Test	10	15	9	1
Experimental group Post Test	11	12	11	1
Control group Pre Test	7	25	3	0
Control group Post Test	19	14	2	0

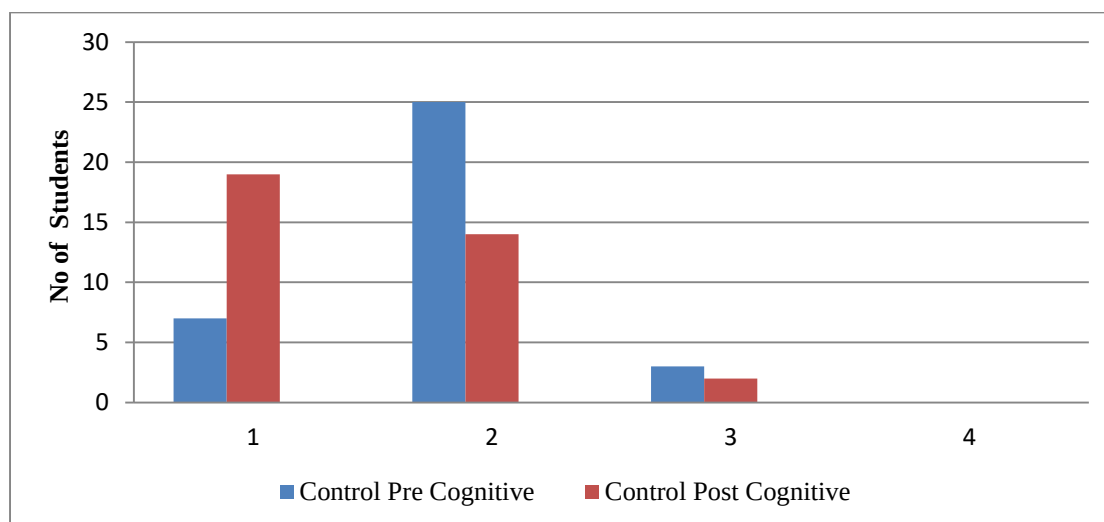
Graph: 5.7.3 Graph showing comparison between Cognitive Anxiety Score of Pre test and Post test of Experimental Group



From Graph 5.7.3, it can be observed that, there is reduction in the number of students (Anxiety Score range 16-22) in the post test scores, but there is increase in the number of students (Anxiety Score range 23-29) in the post test scores.

5.7.4 Discussion about frequency distribution of Cognitive Anxiety Scores of Experimental and Control Group

Graph: 5.7.4 Graph showing comparison between Cognitive Anxiety Score of Pre test and Post test of Control Group



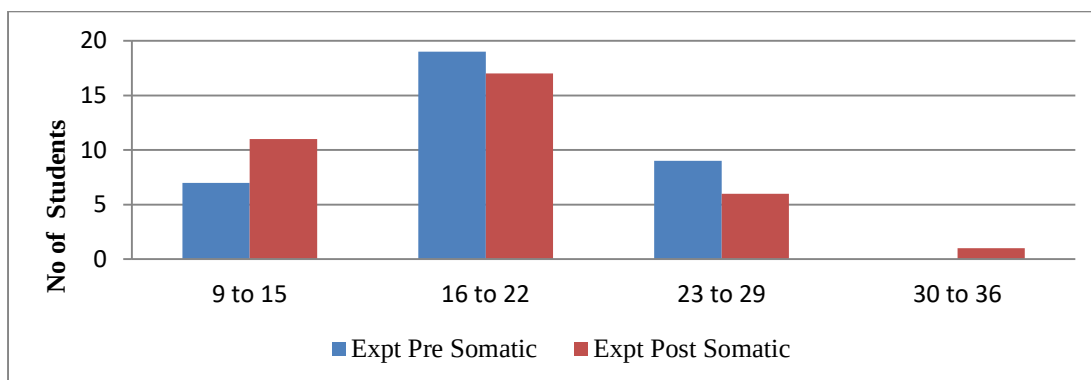
Graph 5.7.4 clearly shows that Control Group participants' post test Cognitive Anxiety has reduced specially in the anxiety score range of 16-22.

Table: 5.7.4 Frequency Distribution of Somatic Anxiety scores

	Somatic Anxiety Score Range			
	9-15	16-22	23-29	30-36
Experimental group Pre Test	7	19	9	0
Experimental group Post Test	11	17	6	1
Control group Pre Test	17	15	3	0
Control group Post Test	25	8	2	0

5.7.5 Graph showing comparison between Somatic Anxiety Score of Pre test and Post test of Experimental Group

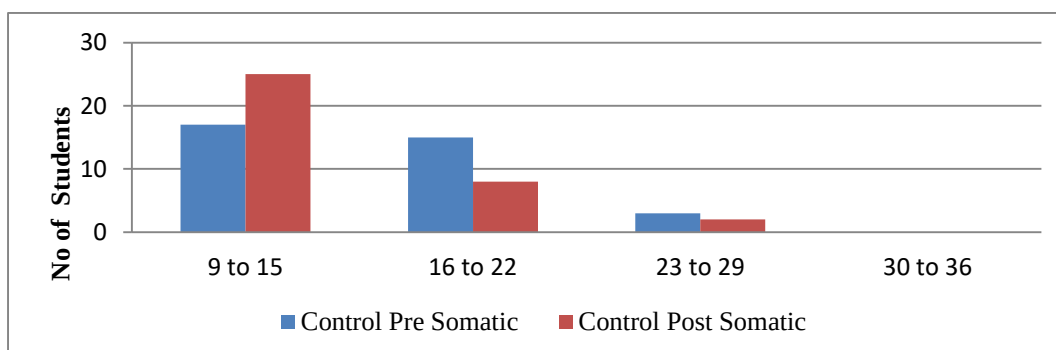
Graph : 5.7.5 Graph showing comparison between Somatic Anxiety Score of Pre test and Post test of Experimental Group



From Graph 5.7.5 , It can be stated that, In the Experimental group, there is a reduction in the number of participants (In the score range of 16-22 and 23-29) in the post test scores as compared to the pre test scores. But there is an increase in the number of students in the 9-15 range.

5.7.6 Graph showing comparison between Somatic Anxiety Score of Pre test and Post test of Control Group

Graph: 5.7.6 Graph showing comparison between Somatic Anxiety Score of Pre test and Post test of Control Group



Graph 5.7.6 states that- In the Control group, there is a reduction in the number of participants (In the score range of 16-22) in the post test scores as compared to the pre test scores. But there is an increase in the number of students in the 9-15 range.

5.8 Academics Related Hypothesis Testing

Testing the Hypothesis 8

Research Hypothesis 8 (H)

There will be significant difference in the pre test and post test scores in the academic performance of the experimental group than the control group.

Null Hypothesis (H₀)

There will be no significant difference in the pre test and post test scores in the academic performance of the experimental group than the control group.

Alternative Hypothesis (H₁)

There will be significant difference in the pre test and post test scores in the academic performance of the experimental group than the control group.

One tailed t test was used for the statistical analysis with confidence level 0.05%

Table: 5.8.1 “t” statistics for Hypothesis 8

	Experimental Group	Control Group
Mean	0.29	5.97
Standard Deviation(SD)	7.58	7.33
Sample Size (n)	35	35
t calculated	3.18	
Table value at 5%	1.99	
Result at 1%	Reject Ho	
Result at 5%	Reject Ho	

As t value is greater than table value at both significance levels, we **Reject Null Hypothesis**. Hence, there is significant difference in the pre test and post test scores in the academic performance of the experimental group than the control group.

5.9 Findings of the Statistical Treatment

Following are the findings of the statistical treatment

- 1) The survey sample shows that, out of total survey population (N=327), there are 160 adolescent athletes above median (median- 17) in Cognitive Anxiety factor and there are 161 adolescent athletes above median (median -18) in Somatic Anxiety factor.
- 2) There is no significant difference in pre test and post test scores of Somatic anxiety level in the experimental group.
- 3) There is no significant difference in pre test and post test scores of Cognitive anxiety level in the experimental group.
- 4) There is no significant reduction in the post test scores of Somatic Anxiety level in the experimental group than the control group as compared to the pre test scores.
- 5) There is no significant reduction in the post test scores of Cognitive Anxiety level in the experimental group than the control group as compared to the pre test scores.
- 6) There is no significant difference in the difference of pre test and post test scores of total anxiety level of the Experimental group and the Control Group.
- 7) There is no significant difference in the difference of pre test and post test scores of Somatic anxiety level of the Experimental group and the Control Group.
- 8) There is no significant difference in the difference of pre test and post test scores of Cognitive anxiety level of the Experimental group and the Control Group.
- 9) There is significant difference in the pre test and post test scores in the academic performance of the experimental group than the control group.

Table: 5.9 “t” scores Overview

Test Criterion	Degrees of Freedom	“t” value	“t” value as per 0.05%
Pre and Post test of Somatic Anxiety	35+35-2=68	0.82	1.99
Pre and Post test of Cognitive Anxiety	68	0.12	1.99
Reduction in Post test scores of Somatic Anxiety	68	0.33	1.99
Reduction in Post test scores of Somatic Anxiety	68	3.64	1.99
Significant Difference in the difference of Pre test Post test score of Total Anxiety	68	For Exp Grp-2.43 For Contr.Grp-11.99	2.03
Significant Difference in the difference of Pre test Post test score of Somatic Anxiety	68	For Exp Grp-2.80 For Contr.Grp-3.62	2.03
Significant Difference in the difference of Pre test Post test score of Cognitive Anxiety	68	For Exp Grp-0.042 For Contr.Grp-11.01	2.03
Academic Performance	68	3.18	1.99

5.10 Qualitative Analysis

After the completion of Post test athletes from experimental group were asked to write feedback regarding Anxiety Management Training Program. Some important points are mentioned in the following paragraph.

Anxiety Management Training Program helped –

- To set and focus on our own goals
- To reduce fear of competition and examination
- To concentrate on daily practice, while playing competitions and appearing for exams without confused mind.
- To focus more on performance during competition and exam than on competitors performance
- To Use cognitive skills taught during Anxiety Management Training Program while playing games and appearing for exams
- To develop Positive Thinking. Now athletes became aware of their negative thoughts, were able to change negative thoughts into positive thoughts up to certain extent
- Positive self talk helped me to keep myself motivated throughout competition time
- To Practice Imagery which helps to concentrate on game skills
- To Learn to keep negative emotions aside
- Athletes are now able to analyse outcome of the competition, to be more precise if they lose the competition
- Self talk technique helped me to change my negative thoughts into positive thoughts.
- Some athletes expressed feeling that they have some special qualities to excel in the competition and exam as well.
- To gain confidence and motivation

5.11 Conclusion

After the data analyses process researches has made some conclusions

1. The analysis of the data for the survey reveals that Cognitive and Somatic Anxiety is part of adolescent children's lives.
2. The analysis of the data for difference between pre test and post test scores of Anxiety does not reveal significant difference for experimental group. This is because anxiety management program is not adequate enough to reduce cognitive and somatic anxiety of adolescent athletes.
3. Hypothesis which states that showing significant difference in pre and post test scores in the academic performance of the experimental group has been accepted as there is significant difference in the pre test and post test scores in the academic performance of the experimental group. The anxiety management training program is found to be effective in this case.
4. According to the feedback forms of the participants of experimental group, it can be concluded that the Anxiety Management Training Program has definitely helped them to improve their motivation and confidence level which will result in improving their performance in competition and examinations too.
5. All athletes have different strategies to combat their competitive anxiety. These individual strategies may or may not be effective enough. Hence there should be one standardized Anxiety Management Training Program which will help them to deal with their anxiety. This program will help them to excel in sports and academics as well.

5.12 Discussion Of Results:

5.12.1 Reasons for significant reduction in Anxiety score found in Control Group

- 1) Researcher might have failed to consider some confounding variables such as; control group may have knowingly or unknowingly received some kind of Anxiety management training, or advice which has acted as a mediator variable influencing both the independent variable and dependent variable. Being unaware of or failing to control for confounding variables may cause the researcher to analyze the results incorrectly.
- 2) Interaction between the experimental group and control group must have taken place. Since, Experimental and Control group belong to same school campus, some kind of interaction must have taken place regarding the anxiety management training. This might have resulted in reduction of the Anxiety scores of control group in the post testing.
- 3) The type of Sport of the Experimental and Control groups is totally different. In Experimental group (Team game: n=6, Individual game: n=29), whereas, in Control group (Two teams from Cricket and Volleyball) were there. This also could be reason for reduction of the Anxiety scores of control group in the post testing. As study reveals, athletes from team game experience less anxiety than athletes from individual games
- 4) Regression (Statistical Regression) — A class that scores particularly low can be expected to score slightly higher just by chance. Likewise, a class that scores particularly high, will have a tendency to score slightly lower by chance. The change in these scores may have nothing to do with the treatment.
- 5) Placebo treatment was necessary. In this experimental study, no treatment was given to the Control group. Researcher could have given some kind of Placebo treatment to them. For e.g., reading motivational stories or gathering post competition or post examination feedback from control group.
- 6) As Anxiety Management Training Program was conducted with Experimental group, they were inclined towards giving objective answers; whereas Control group may not answer in objective manner.
- 7) Matched pair sample. Researcher could have matched pairs of samples from Experimental and Control group by matching their profiles such as, age, intellectual ability, game type, and academic performance.

- 8) John Henry Effect- A tendency for members of the control group in certain experiments to adopt a competitive attitude towards the experimental group, thereby negating their status as controls. It could have happened that, since athletes from experimental and control group were from similar school, control group athletes might have tried to express that their competitive and academic anxiety has been reduced with their own efforts.

5.12.2 Reasons for Non-Significant difference found Experimental Group in the post test.

After the completion of Anxiety Management Training Program, the Anxiety level of adolescent athletes from experimental group should have been reduced, but in contrast, Anxiety level of adolescent athletes from control group was reduced. From the above data analysis, researcher has come to the conclusion that some reasons for these results might be:

- Duration of the experiment - Actual experiment was concluded in 41 sessions, 30 minutes per session, three days a week. Twenty three sessions were for learning new concepts of Anxiety management and only 18 sessions were for practicing Anxiety Management skills. Researcher might have to deploy more number of sessions for practice.
- Practicing Anxiety Management skills in actual Anxiety causing Situations: After learning Anxiety Management skills, researcher might have created competition/exam like situations where adolescent athletes could practice Anxiety Management skills
- Researcher conducted the experiment of training the athletes in the month of June-July. The athletes competed in the zonal and district level competitions in August-September. The state and National level competitions were held in the month of October and November. The academic midterm examinations were also held in October. By this time, the lessons learnt from the training on anxiety management could have faded in the minds of the athletes. Researcher could have conducted a refresher training program just before the state and national level competitions.
- Influence of the coach and subject teachers – Researcher coached the athletes for 3 hours per week. As against this, the coach and subject teachers coached the athletes for 5 hours each per day. This disparity in time spent by the athletes with the researcher and the coach and subject teacher is very obvious. This could have

resulted in the athletes giving more prominence to the physical part of the game and academic studies as compared to the psychological aspect. Ideally the athletes should have spent equal time in practicing the psychological and the physical aspects of the game and also the academic studies.

- Generally, there is a tendency, even among adults, to be languid in their approach to preventive measures. Training given to the adolescent athletes was to prevent the onset of anxiety before competitions and examinations. Athletes who had already experienced anxiety and its ill effects, paid more attention and thus benefitted from this training. Inexperienced athletes probably did not appreciate the advantage that this training could have given them and did not make the most of it.
- The skill of managing anxiety in a manner which enables a person to combat anxiety successfully in a challenging situation is not an easy task. It takes time, maturity and practice. Applying these skills in multiple anxiety causing situations results in increasing ability to master anxiety in challenging situations. In the case of the researcher and her adolescent athletes, this was just an initial step in the journey of anxiety management.
- In a competition environment, where anxiety levels are high, peers and fellow competitors are always at hand. They can pitch in to support each other. This could be a very valuable resource which could have been tapped. This aspect was not taken into account by the researcher and was thus not included in the training program. This would be a valuable addition to future training regimens in anxiety management.

From the above learning's, it will be possible to make the training program in anxiety management more effective and lead to better results. This insight has been a valuable learning for the researcher.

-X-X-X-

CHAPTER 5 – REFERENCES

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CHAPTER 6

SUMMARY OF RESEARCH WORK

6.1 Introduction

This chapter gives a brief summary of complete research study.

In today's competitive world, a lot of pressure is placed on athletes and students to perform at the excellence level. Anxiety, as a negative emotion affects perceptions in sport competitions, where a large majority of athletes consider anxiety to be debilitating towards performance, which may result in decreases in performance (Weinberg & Gould, 2011; Raglin & Hanin, 2000). Many researches showed that winning in a competition depend on how an athlete can control their anxiety level (Humara, 2001).⁴

Utilizing Anxiety Management techniques help adolescent athletes as well as students acquire coping skills needed to manage anxiety. This will help them to negotiate many challenges they face as students and athletes. Thus, one would hope their athletic performance, as well as academic performance would be enhanced.

6.2 Organization of the chapter

Entire research study has been summarized in this chapter under the following titles:

- Review of related literature
 - Importance of Anxiety Management Training Program for Adolescents
 - Phases of Anxiety Management Training Program
 - When to implement Anxiety Management Training Program
- Need and Significance of the Present Study
- Statement of the Problem
- Important Definitions utilized In the research
- Research objectives
- Scope of the study
- Limitations of the study
- Methodology of the research

- Brief Description of the Experimental study- Anxiety Management Training Program
- Data Analysis
- Findings of Statistical Treatment
- Qualitative Analysis – Excerpts from feedback forms
- Conclusion
- Discussion of Results
- Educational Implications of the study
- Suggestions for the Further research

6.3 Review of related literature

The researcher visited a range of websites and libraries of Institutions to explore literature or thesis in the field of Adolescent Anxiety Management Training Program. The Researcher could find variety of such literature. The Researcher could meet many experts who are working in the field of Adolescent Anxiety Management Training Program. A detailed reading of this literature gave an idea about different facets of Adolescent Anxiety Management Training Program.

As a researcher, it was indeed great learning while reading review of literature. There is a momentum gained in last ten years to help adolescent students to manage their academic and career related anxiety. Many questionnaires are helpful to understand the problem area. Psychologists and School personnel are designing and implementing Anxiety management program for adolescents, their parents and teachers too. But still lot of work is still remaining.

6.3.1 Importance of Anxiety Management Training Program for Adolescents

The current study investigated the effects of anxiety management training designed to develop coping skills needed to reduce sport and the academic anxiety. The long-range goal was to provide the environment for successful outcomes in both athletic and academic performance.

Recent evidence suggests that athletes and students may experience greater levels of stress or anxiety due to the dual demands of athletics and academics placed on them.

In the next paragraph, researcher elaborates about Anxiety Management Training Program (AMTP) and its three important execution phases.

6.3.2 Phases of Anxiety Management Training Program (AMTP) ⁵

Anxiety Management Training Program consists of three important phases.

- **Educational Phase** - The first phase of **AMTP** program is **educational** phase. Many sport participants are unfamiliar with theoretical part of the psychological skills and how psychological skill can enhance learning and performance (Weinberg & Gould, 2007). The education phase assists the athlete in identifying basic psychological skills/methods, and recognizing their own personal use or patterns regarding each skill/method (Vealey, 1988). The important part of the education phase involves increasing athletes' awareness of the role that psychological skills play in performance and personal growth (Ravizza, 2001). In the education phase participants recognize the importance of learning the psychological skills and how the skills affect sportive and academic performance. In this time period Researcher should explain the importance of developing psychological skills. For example, while teaching the skill "team cohesion", Researcher needs to explain benefits of team cohesion and the relationship between team cohesion and personal & performance excellence. Researcher needs to teach principles of team cohesion and evaluate current case of the team cohesion. Learning the importance of team cohesion is crucial and Researcher can give examples.
- **Acquisition Phase** - Second phase of the **AMTP** is **acquisition** phase. This phase focuses on strategies and techniques for learning the various psychological skills (Weinberg & Gould, 2007). During the acquisition phase, the athlete enhances existing skills / methods or develops new skills / methods through a combination of practice, monitoring and reinforcement (Vealey, 1988). In this phase, athletes learn how to use **AMTP** methods and how best to implement them. Formal sessions with Researcher are used to teach the athlete the relevant methods that they require, and then they should practice them by themselves, until they are competent in those methods (Weinberg & Gould, 2007).

- **Practice Phase**-Third phase of **AMTP** is **practice** phase. This means that athlete devotes time and effort to psychological skills and complete training in both competition and practice (Horn, 2002). In the practice phase, the athlete performs the skills / methods systematically in order to integrate them into his / her practice and competition routines (Vealey, 1988).

The Practice Phase is the longest phase of the three phases. This phase is when the athlete just practices the methods that are relevant to them, until they have accomplished the three primary objectives of this stage.

The three primary objectives of the practice phase are:

1. To automate psychological skills through over learning – i.e. practicing PST methods every day until the skills that the athlete wants become automatic.
2. To teach the athlete to systematically integrate psychological skills into their competitive situations – i.e. using mental imagery before a competition to decrease anxiety level.
3. To simulate the psychological skills that athlete needs in competition – i.e. using self-talk to increase self-confidence (Weinberg & Gould, 2007).

Appropriate time for the execution of such Anxiety Management Training Program is discussed further ahead.

6.3.3 When to implement ‘Anxiety Management Training Program’⁴

It is best to initiate Anxiety Management Training Program during the off-season or pre-season of sport competitions or examinations. This is the period when there is more time to learn new skills and adolescent athletes are not pressured about winning and excelling in examinations. Mental training is an ongoing process that needs to be integrated with physical practice over time. It is recommended not to start ‘Anxiety Management Training Program’ in the middle of the sport competition or examination time. Sometimes coaches or teachers are desperate to find solution, but mental training in such situation is rarely effective. Adolescent Athletes cannot expect to learn new psychological skill overnight.

6.4 Need and Significance of the Present Study

6.4.1 Need of the Study: Anxiety is a fundamental part of sport as well as examination experience. It remains a challenge because, despite impressive advances in conceptual understanding, there exists a gap between knowledge assembled from research and delivery of treatment to anxious adolescent students as well as athletes. Cognitive and Somatic anxieties are facets of anxiety as a whole. The treatment of Cognitive anxiety and the treatment of Somatic anxiety are two distinct treatments and must be recognized as such. Adolescence is a vulnerable age and becoming a victim of anxiety is very common. As such there is a need for adolescents to get an opportunity to learn and become aware of Anxiety Management Training. In a wider context, anxiety and stress also affect many students, performing artists and competitive athletes. So, there is a need of holistic view to design Anxiety Management Training Programs for adolescents.

6.4.2 Significance of the Study: In the course of this study the readers will be able to know the effects of Anxiety Management Training Program on competitive athletes. The contents of the training program of this study may be very helpful to athletes from various sports background, coaches, and psychological personnel helping athletes to manage their competitive anxiety, and teachers who help their students to deal with their examination anxiety. In this way athletes and students will be able to cope with circumstances which lead to the occurrence of anxiety. Similarly, through this study, the coach, psychological personnel and players will be able to educate the inexperienced players with special reference to anxiety in sports. Moreover the recommendations of the study will be helpful to achieve better results in sports.

From the above theoretical background statement of the problem can be formalized.

6.5 Statement of the Problem

- Conducting a Survey of Cognitive and Somatic Anxiety among adolescent competitive athletes in Pimpri Chinchwad Municipal Corporation, a suburb of Pune.
- Developing Anxiety Management Training Program for Adolescent Athletes and testing its effectiveness.

6.6 Definitions

Some important conceptual and operational definitions are elaborated further.

6.6.1 Conceptual Definitions

The terms defined conceptually and their conceptual definitions are given below.

- **Adolescent:** Girls and boys between age group of 13 to 18 years of age are considered to be adolescents. According to Cambridge Advanced Learner's Dictionary, "Adolescent is a young person who is developing into an adult".
- **Athlete:** A person who is proficient in sports and other forms of physical exercise. According to Cambridge Advanced Learner's Dictionary, "Athlete is a person who is very good at sports or physical exercise, especially one who competes in organized events".
- **Anxiety:** The Dictionary of the Sport and Exercise Sciences (Anshel, Freedson et al, 1991) defines anxiety as a "Subjective feeling of apprehension or perceived threat, sometimes accompanied by heightened physiological arousal".
- **Academic Performance:** According to www.researchgate.net, Academic Performance of athletes is basically an achievement of what has been learnt in learning institution. Academic Performance is measured by the evaluation of how much has been achieved over a certain period of time.
- **Cognitive Anxiety:** Negative expectations and cognitive concerns about oneself, the situation at hand and potential consequences. (Morris, Davis and Hutchings, 1981)

- **Sport-** According to oxford Dictionary, Sport is an activity involving physical exertion and skill in which an individual or team competes against another or others for entertainment.
- **Somatic Anxiety:** The physiological and affective elements of anxiety. It is reflected in rapid heart rate, clammy hands, and tense muscles.

6.6.2 Operational Definitions

The terms defined operationally and their operational definitions are given below.

- **Adolescent-** An athlete or student (boy or a girl) of an age group of 13 to 15 years of age.
- **Sport-** Sport is an activity involving physical exertion and skill. In this research ‘sport’ means athletics, Kabaddi, wrestling, mallakhamb, yoga.
- **Athlete-** An adolescent boy or a girl practicing or performing sporting activity
- **Anxiety-** Scores of Cognitive and Somatic Anxiety acquired by CSAI-2
- **Anxiety Management Training Program:** A training program developed and executed by researcher in which, set of skills are taught to help adolescent athletes to manage their competitive and academic anxiety.
- **Cognitive Anxiety-** Cognitive Anxiety is that anxiety which is measured by test CSAI-2.
- **Somatic Anxiety-** Somatic Anxiety is that anxiety which is measured by test CSAI-2
- **Academic Performance-** Academic Performance is the performance of athletes which is measured by continuous unit tests and evaluated by respective subject teachers.

6.7 Research Objectives

Research objectives of the present study are as follows-

- 1) To study the status of cognitive and somatic anxiety among adolescent competitive athletes in P.C.M.C area.
- 2) To design anxiety management training program for adolescent athletes.
- 3) To test the effectiveness of anxiety management training program for adolescent athletes.
- 4) To understand the effect of anxiety management training on the academic performance of adolescent athletes.

6.8 Scope of the Study

The scope of this study is as follows:

- P.C.M.C area is a suburb of Pune. It is consisting of a total of 650 government aided and non-aided schools which are affiliated to State Board of Secondary School of Maharashtra. Researcher approached some of these schools. In six schools, researcher was allowed to conduct survey. For experiment purpose, this study was limited only to Kridakul project run by Jnana Prabhodini, Nigdi, Pune.
- This study was limited only to adolescents (13 to 15 years) of Jnana Prabhodini, Nigdi, Pune
- This study was limited to the academic period from 2013 to 2015
- This study is limited with independent variable “Anxiety Management Training Program” and dependent variable “Cognitive and Somatic Anxiety and Academic Performance of adolescents”
- This study was limited to Cognitive and Somatic Anxiety. Cognitive and Somatic Anxiety score indicated by Competitive State Anxiety Inventory – 2 by Martens R. (1997)

The Anxiety Management Training Program was designed to help athlete students to manage their anxiety. This program was designed looking at only the psychological aspects. Lifestyle management aspects was not included in this training program.

6.9 Limitations of the Study

Only adolescent athletes were involved in this study as it was not feasible to involve parents, coaches and teachers of the sample group.

Socio economic background of the athlete students was not taken into consideration while selecting the sample. Education of the parents of the athlete students was not taken into consideration.

Eating habits, diet, choice of game, parenting styles of the parents were not considered while selecting the sample. Researcher feels that these are some of the limitations of this research study.

6.10 Research Methodology

- The study followed Survey and Experimental method of research.
- In the survey, intensity of Cognitive and Somatic Anxiety of adolescent athletes was studied
- Sample for survey was 327 adolescent athletes from P.C.M.C area.
- The tool used for survey was - CSAI-2 (Inventory to test Competitive sport Anxiety)³
- The effectiveness of the Anxiety Management Training Program on sport competitive and examination anxiety of the adolescent students was studied.
- The research design for the study was Pre test – Post test Experimental and Control group design.
- A sample of 70 adolescent students of Jnana Prabodhini Navanagar Vidyalaya, Nigdi was chosen for the study.
- The Tools used for the experimental study for pre testing and post testing purpose are
 - i. CSAI-2 (Inventory to test Competitive sport Anxiety)
 - ii. Academic records of adolescent athletes

6.11 Anxiety Management Training Program

The study of related literature and researches helped the researcher to develop the idea of preparing a training program based on the Anxiety Management Training Program for adolescent students.

As mentioned earlier, the researcher had decided to study **Somatic Anxiety** and **Cognitive Anxiety** of adolescent athletes.

It was necessary to know the level of Somatic and Cognitive Anxiety. Hence, a survey was conducted. Since the Standardized Test is available to understand Somatic and Cognitive Anxiety, it was used by the researcher.

A training program consisting of Forty one (41) training sessions of 30 minutes each was prepared and executed by the researcher. The experimental group underwent the training program. They enthusiastically participated in the various activities, theory and practical sessions during the period of training program. The use of teaching aids, interactive discussions, worksheets helped every participant to understand various concepts taught in the training program. This made the entire program appealing to the participants.

The value addition to this training program was yoga sessions that were conducted at the end of every psychological skill theory class. Each Yogasana was demonstrated to the participants by researcher herself and later participants were encouraged to perform the yogasanas. By end of the session Shavasana(relaxation) was performed by the participants.

The Post test was conducted based on similar guidelines as followed in the Pre test. Post test was implemented on the same set of participants who attended the Anxiety Management Training Program.

6.12 Data Analysis

Statistical methods used for the data analyses are as follows-

- Mean of the Pre test and Post test scores
- Standard Deviation values of Pre test and Post test scores
- 't' test

6.13 Findings of the Statistical Treatment

Following are the findings of the statistical treatment

Table 6.1 Findings of Data Analysis

Sr. No	Hypothesis	't' value	Findings
1	There will be significant difference in pre test and post test scores of Somatic anxiety level in the experimental group.	0.82	There is no significant difference in pre test and post test scores of Somatic anxiety level in the experimental group.
2	There will be significant difference in pre test and post test scores of Cognitive anxiety level in the experimental group.	0.12	There is no significant difference in pre test and post test scores of Cognitive anxiety level in the experimental group.
3	There will be significant reduction in post test scores of Somatic anxiety level in experimental group than the control group as compared to the pre-test score	0.33	There is no significant reduction in pre test and post test scores of Somatic anxiety level in the experimental group.
4	There will be significant reduction in post test scores of Cognitive anxiety level in experimental group than the control group as compared to the pre-test score.	3.64	There is significant reduction in pre test and post test scores of Cognitive anxiety level in the experimental group.
5	There will be significant difference in the difference of pre test and post test scores of total anxiety level of the experimental group and the control group.	N A	There is significant difference in the difference of total anxiety level in the experimental group, but difference in control group is more than experimental group.
6	There will be significant difference in the difference of pre test and post test scores of Somatic anxiety level of the experimental group and the control group.	N A	There is significant difference in the difference of Somatic anxiety level in the experimental group, but difference in control group is more than experimental group
7	There will be significant difference in the difference of pre test and post test scores of Cognitive anxiety level of the experimental group and the control group.	N A	There is significant difference in the difference of Cognitive anxiety level in the experimental group, but difference in control group is more than experimental group

Sr. No	Hypothesis	‘t’ value	Findings
8	There will be significant difference in the pre test and post test scores in the academic performance of the Experimental group than the Control group	3.18	There is significant difference in the pre test and post test scores in the academic performance of the Experimental group than the Control group

Following are the findings of the statistical treatment

- 1) The survey sample shows that, out of total survey population (N=327), there are 160 adolescent athletes above median (median- 17) in Cognitive Anxiety factor and there are 161 adolescent athletes above median (median -18) in Somatic Anxiety factor.
- 2) There is no significant difference in pre test and post test scores of Somatic anxiety level in the experimental group.
- 3) There is no significant difference in pre test and post test scores of Cognitive anxiety level in the experimental group.
- 4) There is no significant reduction in the post test scores of Somatic Anxiety level in the experimental group than the control group as compared to the pre test scores.
- 5) There is no significant reduction in the post test scores of Cognitive Anxiety level in the experimental group than the control group as compared to the pre test scores.
- 6) There is no significant difference in the difference of pre test and post test scores of total anxiety level of the Experimental group and the Control Group.
- 7) There is no significant difference in the difference of pre test and post test scores of Somatic anxiety level of the Experimental group and the Control Group.
- 8) There is no significant difference in the difference of pre test and post test scores of Cognitive anxiety level of the Experimental group and the Control Group.
- 9) There is significant difference in the pre test and post test scores in the academic performance of the experimental group than the control group.

6.14 Qualitative Analysis

6.14.1 Excerpts from feedback forms

After the completion of Post test, athletes from experimental group were asked to write feedback regarding Anxiety Management Training Program. Some important points are mentioned below.

Anxiety Management Training Program helped athletes in the following manner:

Table 6.2 – Feedback from Adolescent Athletes of Experimental Group

Name of the Technique	The Representative Feedback
Goal Setting Technique	To set and focus on our own goals To reduce fear of competition and examination
Concentration Technique	To concentrate on daily practice, while playing competitions and appearing for exams without a confused mind. To focus more on self-performance during competition and exam than on competitor's performance
Positive Self Talk Technique	To Use cognitive skills taught during Anxiety Management Training Program while playing games and appearing for exams To develop Positive Thinking. Now athletes became aware of their negative thoughts, were able to change negative thoughts into positive thoughts up to certain extent Positive self talk helped me to keep myself motivated throughout competition time Self talk technique helped me to change my negative thoughts into positive thoughts.
Imagery Technique	To Practice Imagery which helps to concentrate on game skills
Emotion Regulation Technique	To Learn to keep negative emotions aside
Relaxation and Yoga Practice Technique	To relax and energize
Overall Anxiety Management Training Technique	Athletes are now able to analyze outcome of the competition, to be more precise if they lose the competition. Some athletes expressed feeling that they have some special qualities to excel in the competition and exam as well. To gain confidence and motivation

6.14.2 Analysis of feedback forms

Though Anxiety Management Training Program (AMTP) is not significant, feedback forms collected by the participants of experimental group shows some significant results. Qualitative feedback supports the following facts.

- Goal setting technique helped adolescent athletes to set their goals without any expert's help
- Concentration technique helped adolescent athletes to concentrate on daily practice without confused mind, and focus on our own performance during competition and examination
- Positive Self-talk technique facilitated adolescent athletes to use various cognitive skills while confronting in difficult situations during sport competitions and examinations. Participants have reported in their feedback that 'more alert during competition time and try to change their naive self talk to positive self talk'
- Technique like 'emotion regulation' helped adolescent athletes to keep away negative, harmful emotions away at least during sport competitions and examinations.
- Adolescent athletes understood importance of Relaxation and Yoga practice for relaxing energizing themselves.
- Overall, adolescent athletes are now able to analyze outcome of sport competition and examination, This training program was very motivating and helped them to gain confidence

6.14.3 Discussion of findings of Qualitative Analysis in the context of selected variables

In the present research study, Anxiety Management Training Program is considered as Independent variable and Cognitive and Somatic Anxiety is considered as dependent variable. The above table (Table 6.2) elaborates about some important findings regarding feedback forms received from participants from the experimental group. During the training program, Researcher taught the above mentioned techniques to the participants with more explanation and examples from academics and sporting

performance. From the feedback forms, researcher understood that participants are able to implement these techniques in academics too. Participants experienced that compared to ‘emotion regulation’ ‘goal setting’ technique is easier. About 90% of the participants have started setting goals for their examinations and sport competitions. Considering their adolescent age, concentrating for longer time is more difficult. Researcher feels that, follow-up sessions are very important in training programs especially for techniques like –Imagery, positive self-talk. Though, researcher was not able to reduce cognitive and somatic anxiety of participants, but she was successful in bringing out awareness regarding importance of mental techniques to improve academic and sporting performance.

6.15 Conclusions

After the data analyses process, researcher has arrived at the following conclusions

1. The analysis of the data for the survey reveals that Cognitive and Somatic Anxiety is part of adolescent children lives.
2. The analysis of the data for difference between pre test and post test scores of Anxiety does not reveal significant difference for experimental group. This is because anxiety management program is not adequate enough to reduce cognitive and somatic anxiety of adolescent athletes.
3. Hypothesis which states that showing significant difference in pre and post test scores in the academic performance of the experimental group has been accepted as there is significant difference in the pre test and post test scores in the academic performance of the experimental group. The anxiety management training program is found to be effective in this case.
4. According to the feedback forms of the participants of experimental group, it can be concluded the Anxiety Management Training Program has definitely helped them to improve their motivation and confidence level which will result in improving their performance in competition and examinations too.
5. All athletes have different strategies to combat their competitive anxiety. These individual strategies may or may not be effective enough. Hence there should be one standardized Anxiety Management Training Program which will help them to deal with their anxiety. This program will help them to excel in sports and academics as well.

6.16 Discussion of Results

6.16.1 Reasons for significant reduction in Anxiety score found in Control Group

1. Researcher might have failed to consider some confounding variables such as; control group may have knowingly or unknowingly received some kind of Anxiety management training, or advice which has acted as a mediator variable influencing both the independent variable and dependent variable. Being unaware of or failing to control the confounding variables may cause the researcher to analyze the results incorrectly.
2. Interaction between the experimental group and control group must have taken place. Since, Experimental and Control group belong to same school campus, some kind of interaction must have taken place regarding the anxiety management training. This might have resulted in reduction of the Anxiety scores of control group in the post testing.
3. The type of Sport of the Experimental and Control groups is totally different. In Experimental group (Team game: n=6, Individual game: n=29), whereas, in Control group (Two teams from Cricket and Volleyball) were there. This also could be reason for reduction of the Anxiety scores of control group in the post testing. As study reveals, athletes from team game experience less anxiety than athletes from individual games
4. Regression (Statistical Regression) —Statistical regression is a phenomenon that sometimes operates when subjects are selected on the basis of extremely high or extremely low pretest scores. Subjects who score very high on a pretest will most likely score lower (near the mean) on a subsequent testing. The researcher should be aware that this phenomenon occurs only when subjects are selected as a group because of their extreme scores and that the regression referred to is for the group as a whole, not for all individuals.¹

A class that scores particularly low can be expected to score slightly higher just by chance. Likewise, a class that scores particularly high, will have a tendency to score slightly lower by chance. The change in these scores may have nothing to do with the treatment.
5. Placebo treatment was necessary. In this experimental study, no treatment was given to the Control group. Researcher could have given some kind of Placebo

treatment to them. For e.g., reading motivational stories or gathering post competition or post examination feedback from control group.

6. As Anxiety Management Training Program was conducted with Experimental group, they were inclined towards giving objective answers; whereas Control group may not answer in objective manner.
7. Matched pair sample. Researcher could have matched pairs of samples from Experimental and Control group by matching their profiles such as, age, intellectual ability, game type, and academic performance.
8. John Henry Effect²- A tendency for members of the control group in certain experiments to adopt a competitive attitude towards the experimental group, thereby negating their status as controls. It could have happened that, since athletes from experimental and control group were from similar school, control group athletes might have tried to express that their competitive and academic anxiety has been reduced with their own efforts.

6.16.2 Reasons for non -significant difference found in the Experimental Group in the post test.

After the completion of Anxiety Management Training Program, the Anxiety level of adolescent athletes from experimental group should have been reduced, but in contrast, Anxiety level of adolescent athletes from control group was reduced. From the above data analysis, researcher has come to the conclusion that some reasons for these results might be:

- Duration of the experiment - Actual experiment was concluded in 41 sessions, 30 minutes per session, three days a week. Twenty three sessions were for learning new concepts of Anxiety management and only 18 sessions were for practicing Anxiety Management skills. Researcher might have to deploy more number of sessions for practice.
- Practicing Anxiety Management skills in actual Anxiety causing Situations: After learning Anxiety Management skills, researcher might have created competition/exam like situations where adolescent athletes could practice Anxiety Management skills
- Researcher conducted the experiment of training the athletes in the month of June-July. The athletes competed in the zonal and district level competitions in August-

September. The state and National level competitions were held in the month of October and November. The academic midterm examinations were also held in October. By this time, the lessons learnt from the training on anxiety management could have faded in the minds of the athletes. Researcher could have conducted a refresher training program just before the state and national level competitions.

- Influence of the coach and subject teachers – Researcher coached the athletes for 3 hours per week. As against this, the coach and subject teachers coached the athletes for 5 hours each per day. This disparity in time spent by the athletes with the researcher and the coach and subject teacher is very obvious. This could have resulted in the athletes giving more prominence to the physical part of the game and academic studies as compared to the psychological aspect. Ideally the athletes should have spent equal time in practicing the psychological and the physical aspects of the game and also the academic studies.
- Generally, there is a tendency, even among adults, to be languid in their approach to preventive measures. Training given to the adolescent athletes was to prevent the onset of anxiety before competitions and examinations. Athletes who had already experienced anxiety and its ill effects, paid more attention and thus benefitted from this training. Inexperienced athletes probably did not appreciate the advantage that this training could have given them and did not make the most of it.
- The skill of managing anxiety in a manner which enables a person to combat anxiety successfully in a challenging situation is not an easy task. It takes time, maturity and practice. Applying these skills in multiple anxiety causing situations results in increasing ability to master anxiety in challenging situations. In the case of the researcher and her adolescent athletes, this was just an initial step in the journey of anxiety management.
- In a competition environment, where anxiety levels are high, peers and fellow competitors are always at hand. They can pitch in to support each other. This could be a very valuable resource which could have been tapped. This aspect was not taken into account by the researcher and was thus not included in the training program. This would be a valuable addition to future training regimens in anxiety management.

6.16.3 Rationale of improvement in academic performance

Researcher while conducting training sessions was always elaborating with various examples regarding mental techniques in academics too.

- 1) Goal setting technique regarding academics. Participants were helped by researcher to set goals in terms of marks and time allotted to studies on monthly, weekly and daily basis.
 - 2) While discussing about concentration technique, researcher discussed about various internal and external distracters to be eliminated while studying and appearing for examinations.
 - 3) Techniques like ‘positive self talk’ and emotional regulation helps to confront with stressful situation like examination and last minute revision.
 - 4) Relaxation techniques and daily yoga practice helps to relax and energize one.
- Researcher feels the above mentioned could be the reasons of improvement in the academic performance of participants of experimental group.

From the above learning’s, it will be possible to make the training program in anxiety management more effective and lead to better results. This insight has been a valuable learning for the researcher.

6.17 Educational Implications of the Study

Anxiety is a fundamental part of the academics as well as sport competition. It is considered as an unpleasant emotional state consisting of apprehension, tension, worry and nervousness. Research shows that cognitive and somatic anxieties are likely to vary. Many situations extract both cognitive and somatic elements of anxiety. An adolescent may exhibit conditioned somatic response to a particular environment such as on the previous day of the board exam, or an important sport event. The conditioned somatic response may then trigger an adolescent to start worrying. These situations are very common, but adolescents are significantly affected. Now question arises- ‘What role does school play in this context? Yes, schools are viewed as a promising avenue for providing mental health services to children and adolescents. Schools are already the main point-of-entry into the mental health service system for youth. School-based

treatments are particularly appropriate for anxiety disorders as schools provide unique opportunities for identification of anxious adolescents and treatment for the same.

If Anxiety Management Training Program is introduced in the school infrastructure, students will get abundant opportunities to educate themselves about anxiety. This can be treated as preventive as well as remedial treatment to deal with anxiety.

While studying for the preparation of the Anxiety Management Training Program, the researcher came to know various interesting facets of Anxiety.

It was a challenging task to make the entire training program interesting, innovative as well as educative. Plenty of examples, stories, activities and worksheets made adolescents to actively participate in the sessions.

Learning Anxiety Management techniques does not have age limit. It can be taught at school level too, with easy and activity-based training sessions.

Parents, teachers, coaches and close family members should have good communication practices so as to prevent the psychological damage caused by anxiety.

6.18 Suggestions for Further Research

Research is an ongoing process. After undergoing the entire research procedure; researcher has come up with following suggestions for future research study.

- Conducting similar Anxiety Management Training Program with more duration, with more number of activities and testing its effectivity.
- A study of effectiveness of Anxiety Management Training Program in different school set up.
- A study of effectiveness of Anxiety Management Training Program on rural as well as urban area.
- A study of effectiveness of Anxiety Management Training Program for teachers , parents of adolescents and sports coaches to create awareness about hazards of anxiety and how to identify them
- Preparation of training program for adolescents students ‘Self help manual to manage my Anxiety’

- Content wise improvement in the ‘Anxiety Management Training Program’. For example-adding topics like time management, career guidance, listening to the interviews of successful people.
- Conducting survey to understand various determinants of anxiety of adolescents

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