A STUDY OF HEALTH OUTCOMES, ACADEMIC STRESS COPING AND SELF-EFFICACY OF PHYSICAL EDUCATION STUDENTS

Synopsis submitted to Swami Ramanand Teerth Marathwada University, Nanded
For the award of Degree of Doctor of Philosophy in the faculty of Physical Education

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INTRODUCTION

Origin of the Problem

Physical education trends have developed recently (Sinku 2008) to incorporate a greater variety of activities besides typical sports. Introducing students to activities like bowling, walking/hiking, or Frisbee at an early age can help students develop good activity habits that will carry over into adulthood. Studies have shown that physical activities enhance muscular strength and endurance, cardiovascular endurance, and provides many other physical benefits. It also provides psychological benefits such as improving general mental health, concentration, awareness and positive mood. It can be taught to any age student with little or no equipment making it ideal for mixed ability and age classes. Physical activity easily be incorporated into a holistic learning body and mind unit. Teaching non-traditional sports to students may also provide the necessary motivation for students to increase their activity, and can help students learn about different cultures. Physical education students provides a great opportunity to integrate academic concepts from other subjects as well (social studies from the example above), which may now be required of many P.E. teachers.

The four aspects of P.E. are physical, mental, social, and emotional.

Another trend is the incorporation of health and nutrition to the physical education curriculum. The Child Nutrition and WIC Reauthorization Act of 2004 required that all school districts with a federally funded school meal program develop wellness policies that address nutrition and physical activity. While teaching students sports and movement skills, P.E. teachers are now incorporating short health and nutrition lessons into the curriculum. This is more prevalent at the elementary school level, where students do not have a specific Health class. Recently most elementary schools have specific health classes for students as well as physical education class. With the recent outbreaks of diseases such as swine flu, school districts are making it mandatory for students to learn about practicing good hygiene along with other health topics. Today many states require Physical Education teachers to be certified to teach...
Health courses. Many colleges and Universities offer both Physical Education and Health as one certification. This push towards health education is beginning in the intermediate level, including lessons on bullying, self-esteem and stress and anger management.

Incorporating local indigenous knowledge into physical education can lead to many meaningful experiences and a way of learning about other cultures. For example by incorporating traditional knowledge from varying indigenous groups from across Canada students can be exposed to a many concepts such as holistic learning and the medicine wheel. A unit could be focused on connecting to a place or feeling while outdoors, participating in traditional games, or outdoor environmental education. These types of lesson can easily be integrated into other parts of the curriculum and give Aboriginal students a chance to incorporate their culture in the local school community. Studies have been done in how physical education can help improve sports performance related physical fitness.

**Academic stress**

Academic stress among college students has been a topic of interest for many years. College students experience high stress at predictable times each semester due to Academic commitments, financial pressures, and lack of time management skills. It is well recognized that the Health of students is affected by the stresses of Academic life. These stressors may affect their learning ability, Academic performance and Health. Several international studies have revealed high rates of Health problems in undergraduate medical and non-medical students as a result of their studies. (Brazelton, Sinku 2015, Supe 1998, Shaikh, 2004. Zaid & Chan 2007. Misra & McKean 2000. Sax 1997. Guthrie et.al.1998, Dyrbye 2007. Bramness, 2013). Research study conducted in the USA has reported a nationwide increase in stress among undergraduate college students in various fields of study. (Misra & McKean 2000, Sax 1997.) Medical students in particular, and from different countries, have been found at risk of psychological stress, mental disorders and decreased life satisfaction. (Guthrie et.al.1998). A high prevalence of emotional disorders among medical students was reported at a Malaysian private medical school (Supe 1998, Zaid & Chan 2007). Studies in the literature have reported that some of the challenges faced by students include managing the psychosocial environment and financial problems, accompanied
by Academic pressures. (Sinku, 2016; Chan Koh, 2007; Omigbodun et al., 2006). Academic demands and the quality of the study environment may vary in different fields of education and different colleges and consequently result in different student life-styles and Health effects.

When stress is perceived negatively or becomes excessive, it can affect both Health and Academic performance (Campbell & Jarvis, 1992; Butterfield, 1998; Cameron et al., 2009; Campbell & Jarvis, 1992; Carlson et al., 2006; Chan & Koh, 2007; Chandrashekhar, 1980; Chandrashekhar et al., 2007; Chang, 2005; Chen, 2009; Clark & Rieker, 1986). University students often attempt to control and reduce their stress through avoidance, religious and social support, or positive reappraisal (Mattlin, Wethington, & Kessler, 1990; Blake & Vandiver, 1988; Edwards et al., 2003; El-Gilany, 2008; Elliot & Witty, Essandoh, 1995; Finkelstein & Lan). Student Academic stress is also reduced and controlled through effective time management and study techniques (Brown, 1992). Macan (1990) found that student who perceived themselves in control of their time reported greater work and life satisfactions and fewer job-induced and somatic tensions. Academic stress is a consequence of or a general response to an action or situation that places special physical or psychological demands, or both, on a person. As such, stress involves an interaction of the person and the environment. The physical or psychological demands from the environment that cause stress are called stressors. Stressors can take various forms, but all stressors have one thing in common; in both situations it depends on the individual perception level.

A place in medical school in many countries is very highly expressively difficult. Therefore, admission to final professional exam in medical school life is quite stressful (Niaura et al., 1991). It is not clear whether medical education is particularly more stressful than other higher education (Firth-Cozens, 2001). Furthermore, university life is much different especially medical school than high school. As students need to live alone and less supported condition, and coping with the high pressure of study demands of the programme is often tough for young folks (Barikani, 2008; Wolf, 1994). Medical students are predominantly suffers from stress during their undergraduate course as because of Academic pressure, classicist criteria and tough nature of medical practice which requires involvement with human suffering, death, sexuality and fear (Sinku, 2015; Shah and Trivedi, 2009; Takeichi and Sato,
2000; Abdulghani et al., 2011; Rosalet al., 1997; Stewart et al., 1999; Singh et al., 2004; Weinmanet al., 2006; Styles, 1993; Vitaliano et al., 1984).

Self-efficacy
Self-efficacy has been associated frequently with stress in students and is defined by Bandura (1986) as a belief in one's capability or skill to attain a particular goal or execute a particular behaviour. Bandura proposed that self-efficacy can explain, not only the choice or level at which an activity is pursued, but as well, the likelihood of successful completion of the activity. Self-efficacy has been found to have a significant negative correlation to level of stress (Hackett, Betz, Casas, & Rocha-Singh, 1992; Newby-Fraser & Schlebusch, 1997), suggesting that those who have a higher self-efficacy also report a lower level of stress. Therefore, it would appear that higher self-efficacy may act as a moderator of stress for students. Although it is helpful to understand cognitive correlates (self-efficacy) of stress, it is also necessary to examine behavioural responses or the coping strategies that students use to deal with their stress.

Coping
Coping strategies can be defined as types of conscious adaptive responses consistently applied to a broad range of stressful events (Kohn, Hay & Legere, 1994). Three general strategies or styles of coping with stressful situations have been identified by Kohn et al. (1994): (a) problem-focused coping, directed at remedying a threatening or harmful external situation; (b) emotion-focused coping including ventilating, managing, or relieving one's emotional response to such a situation; and (c) avoidance-focused coping involving attempts to remove oneself mentally or even physically from threatening or damaging situations. Research by Kohn et al. (1994) found that both problem-focused and emotion-focused coping were significantly related to positive adaptation to stress, while avoidance-focused coping was related to both positive and negative adaptation to stress. Other researchers (Bowman & Stern, 1995; Dunkley et al., 2000; Oakland & Ostell, 1996) have found a strong positive correlation between number of hassles and avoidant coping. However, all types of coping strategies have been found to moderate stressful experiences.
The scarcity of research on Health outcomes, Academic stress Coping and self-Efficacy of physical Education students, so the research scholar has taken this study.

**Statement of the problem:**

The investigators become interested in determining the effectiveness of Health outcomes, Academic stress Coping and self-Efficacy of physical Education students. The problem was stated as “A study of Health outcomes, Academic stress Coping and self-Efficacy of physical Education students.” taken up to assess the level of familiarity of these subjects among physical education students.

**Objectives of the study:**

1. The objectives of the study were to comprised and determine the Health outcomes among physical education students.

2. The objectives of the study were to comprised and determine the Academic stress among physical education students.

3. The objectives of the study were to comprised and determine the Coping among physical education students.

The objectives of the study were to comprised and determine the Self-efficacy among physical education students.

**Hypothesis:**

The following hypothesis were formulated for this study:

1. It is hypothesized that “there would be no significant difference of health outcomes between physical and non-physical education.”

2. It is hypothesized that “there would be no significant difference of Academic stress between physical and non-physical education.”

3. It is hypothesized that “there would be no significant difference of coping between...
physical and non-physical education.

4. It is hypothesized that “there would be no significant difference of self-efficacy between physical and non-physical education.

**Delimitations**

1. The study was restricted to 300 physical and 300 hundred other students.
2. The age of the selected subjects ranged from 18 to 28 years and all of them were healthy and normal.

**Limitations**

1. Certain factors like rational habits like life style, daily routine, diet and climatic condition were not taken into account in this study.
2. The uncontrollable changes in the climatic conditions such as atmospheric temperature, humidity, etc., during pre and post test period were considered as limitations.
3. The subjects economic situation was not taken into consideration.

**Definition and explanation of terms used**

**Academic Stress:**

Academic stress is negative mental and emotional pressure, Tension due to Academic curricula, or Stress that occurs due to the Academic load during college life.

**Academic Self-Efficacy:**

Academic self-efficacy is a positive psychological state may be defined as ones perceived capability to efficiently perform their Academic tasks at desired levels.

**Coping:**
Coping is expending conscious effort to solve personal and interpersonal problems, and seeking to master, minimize or tolerate stress or conflict.

Health outcomes:
Health outcomes are changes in Health status that result from measures or specific Health care investments or interventions.

CHAPTER 2

REVIEW OF RELATED LITERATURE

The Following Review of related literature has been selected for the study

Butik and David conducted a study to examine the relationship between physical activity and multidimensional self concept among adolescents with various levels of psychological and behavioral problems. Adolescents from public schools (n=114) and psychological treatment centers (n=112) completed that Multi dimenisional Self-concept Scale (MSCS), which measures physical, affective, social, competence, familial, academic and global domains of self-concept; the Seven-

Lion and Yann examined to determine the relationships between gender and sport participation on the physical self-concept of Taiwanese undergraduate students. The sample for the study consisted of 600 Taiwanese undergraduate students who attended classes at six Taiwanese public and private universities and colleges, during the full 2000 semester. Before distributing the instrument to the six selected institutions, a pilot instrument was examined by 160 Taiwanese undergraduate students who were selected randomly. Finally, a 27-item survey that was derived from prior multi-dimension self-perception was developed to examine six specific physical components. The instrument’s co-efficient alpha was between 0.78 and 0.86 and each
value of factor loading was above 60. A general linear model, with one way and two way multivariate analysis of Taekwondo training program experienced less state and trait anxiety, mood disturbance, and significantly improved levels of emotion regulation.

**Aggarwal Reena** studied the relationship between sex and general self concept in grade IX students and concluded that the mean score of girls was greater than those of boys in the case of identity, self-satisfaction, behavior, physical, moral, ethical, personal, self-criticism, total self-concept and its instability dimension. The study found the superiority of girls over boys in their role specific self-concept.

**Akbar Hussain** conducted a study so as to ascertain the impact of disability on the development of self-concept. The study was designed to compare the level of self-concept among the physically challenged adolescents with the normally developed peers. Altogether 90 school going adolescents of grade IX and X aged 11-16 were purposely selected from the three different schools of Delhi out of which 15 were males and 15 females in each category. Mohsin’s self-concept inventory was administered on each subject. On the whole, the level of self-concept among the physically challenged adolescents was found significantly lower than their normal counterparts. Similarly the level of self-concept among the girls was also found significantly lower than the boys in general, where as category wise significant difference was found only in the case of blind subjects.

**Amaladoss Xavier and Amalraj** had taken up a study with the aim of identifying the level of self –concept of postgraduate chemistry teachers and influence of gender, community and length of experience over their self-concept. The survey method was used. The stratified random sampling technique was used.

**Chakrabharthi. P.K, DebashriBanerjee** conducted a study on gender difference in self-concept among school students in Kolkata. The study was confined to 567 students comprising of 300 boys and 267 girls of class VII and class VIII of 12 English medium schools of Kolkata. Children’s self-concept scale by Ahluwalia was used for measuring the self-concept. It was concluded that boys and girls do differ significantly in their total self-concept score. Boys have a higher self-concept than
girls. There is a significant difference in the self-concept of behavior, intellectual and school status, physical appearance and attributes, anxiety and happiness and satisfaction amongst boys and girls. Girls showed that they were more happy and satisfied than boys.

Heinfound team sports participants to be more extraverted than those participating in individual sports. He also found that participants on individual and dual sports possessed less amount of self assurance.

Husman (1955) showed, in his study on boxers, wrestlers and cross country, distinguished characteristics as far as aggressive tendencies were concerned. His findings were that the cross-country runner tended to be more extra punitive than the boxers and the boxers possessed less overall intensity of aggression and had more supergo.

Booth using MMPI investigated the differences in the personality of football players, athletics and non-athletics. His result revealed that the athletics from various sports groups and non-athletics differed significantly on several of the MMPI scale.

Niblokfound that female athletics to be more energetic, enthusiastic, efficient, as possessing more leadership potential and were optimistic and more extraverted. Slusher using MMPI found that personality differences existed even among athletes who athletes who participated in different sports.

In Carson & Study the less anxious group performed better on a stabilometer under stress than the highly anxious group early in the learning stages. The nature of the learner and more particular his anxiety level, is also important in determining how much stress should be present in learning situation. The complexity of task and the anxiety level of the person interact to produce interesting performance expectancies with a complex task (the kind athletics usually have to learn) the expectation would
be that highly anxious people would end to perform less under stress than less anxious people. The phenomenon has been observed by a number of researches.

The result of Nelson & Langer’s) study support the result of an earlier study on the effects of anxiety on learning. In an extensive review of literature on anxiety (1960) concluded that both high and low level of anxiety tended to disrupt the learning process, whereas moderate level of anxiety tended to create an ideal atmosphere for learning.

Behrman conducted study on personality differences between swimmers and non-swimmers. The investigation was made to determine whether there are personality differences between male college freshman swimmers and non-swimmers and to determine the relationship between personality traspits and swimmers experiencing a common course of instruction in swimming. Subjects were compared on the basis of swimming performances, personality tests, biographic data forms and interviews with subjects who failed to learn how to swim. Comparison revealed significant difference between swimmers and non-swimmers and between learners and non-learners.

Peterson etal reported that women athletes who participated in individual sports, when compared to women competing in team sports were more dominant, adventures, sensitive, self sufficient and more forthright.

Rushall while comparing emotional Intelligence of male swimmers with female swimmers found that females were socially bold, noisy and unrestrained in their behaviour, whereas male appeared to be self centered and individualistic. It was also found that novice female swimmers were in general, more introverted than a control group of female athletes, not primarily engaged in swimming.

Nearly every concern of human endeavour is thought to be effected somehow by anxiety (Lavitt 1967) number of theories exist concerning the effects of anxiety of performance, and while there seems to be an interaction effect between the amounts to anxiety necessary to maximally perform certain specific tasks, all theories seems to agree that maximum performance is reduced by too much anxiety (Duffy,
a number of specific management techniques have emerged including cybernetic training (Roman 1978) visual motor behavioral (Sumn 1976) hypnoses (Morgan 1972) Cognitive behavioral training (Horton and Shelton, 1978) and progressive relaxation (Tulko and Topsi, 1976 Dowen and Lanning, 1982). Additional techniques are being used by athletics include transcendental meditation, biofeedback, zen and yoga, autogenic training and sentic cycles (Beson, 1975). According to the well known hypothesis of Liebert and Morris (1967) and Sarson (1975) the state of anxiety is characterized by the self-focussing tendencies leading to self-preoccupation. This is associated with task-irrelevant cognitions, in particular “woory”. For example, an athlete being in a negative prestart tension in increasing concentrates his thoughts on self-concept problem instead of directing his attention to the demands of the task and competition. Therefore, the control of such tasks-irrelevant cognitions is a first essential approach to anxiety control. Furthermore, anxiety is accompanied by a higher level of activation. The athlete feels nervous, upset and overacted. This aspect is called “emotionality” by Liebert and Morris. In second approach to anxiety control is to reduce the activation level with the expectation than an improvement of concentration may follow too. Finally a prestart anxious athlete will tend to avoid the threatening competition in order to prevent failure and potential loss of a social appreciation. In this case, appropriate motivational techniques are required. This third approach to anxiety control is based on controlling behavioral tendencies expecting an additional feedback effect on cognition and emotion as well.

Mulumply and Ogilvie also conducted a related investigation, where four groups of female athletes i.e. athletes in team sports, in individual sports, team individual sports, subjectively judged sports and the non-athletes, differed on various factors. The athletes from individual sports were more extraverted than those from team individual groups. The seemed to be in disagreement with the findings of Peterson, Weber and Trousdale (1967). Malumply also found that the team sports group as less extraverted than the non-athletes. However, he found individual female athletes to be more anxious, venturesome, toug-minded and extraverted while team athletes were lower in leadership, less venturesome extraverted learnes.
In the study made Malumphy) the sport participants were found to be more conscientious and tough minded, but less imaginative and less venturesome than the non-sports participants. Newman (1968) suggested that participation in high level athletic competition provides and adds a dimension to one’s personality. He found that athletes were found to be more conscientious and tough minded, but less imaginative and less venturesome than the non-sports participants. He found that athletes were more sociable, more aggressive in their approach to problems, more self confident, more critical of themselves and more extraverted than non-athletes. Ogilvy (1968) also found that traits like emotrional stability, tough madness, consciousness, self control, low engergetic tension level, self assuredness and outgoingness consistently were associated with athletic achievement.

Gupta Studied the emotional Intelligence of hockey champions and non athletes by administering the MMPI test. The result to this test revealed that hockey champions were highest on Ma scale while low on PF scale. Hockey champions were found to have greater ability to concentrate, self confidence, extraversion, tendency to worry less and less intelligence as compared with the group of non athletics.

Singer compared the basketball players and tennis players on EPPS norms and also the highest and lowest ranked athletes in both sports. The baseball team scored significantly lower than the other two groups, on the interception variable, lower than the tennis group of the achievement variable, lower than the norm group on autonomy and lower than the tennis group on dominance. Both the baseball and tennis groups scored significantly higher than the norm group on the aggression factor. No differences were noted between high and low rated baseball players. Kane found a complex relationship between the second order personality variable “extraversuion” and performance of “track athletes” (sprinters) and they were found to be frequently more extraverted than middle distance runners. He claimed that as the distance increased, there was a trend towards introversion. Slevin used the STAI to investigate the effects of anxiety upon the performance novel gross motor task. The results showed that overall high trait anxiety subject had significantly higher state anxiety scores and significantly lower performance scores than low trait subject.
C Lu, X Xu(2009) investigated personality traits of student teachers in physical education. This study examines changes in selected personality traits of fifty-three physical education student teachers over the course of a student teaching semester. The personality traits measured included anxiety, concentration, confidence, mental preparation, motivation, and cooperation. An adapted Psychological Skills Inventory for Sport (PSIS) questionnaire was administered before (PRE), at mid-term (MID), and immediately after (POST) a student teaching period. Three paired Hotelling’s T-square tests and their post-hoc tests were used to determine whether changes occurred in selected personality traits over time (PRE, MID, and POST). Our findings include: (1) there are significant changes in anxiety, concentration, and confidence from PRE to MID and from PRE to POST; (2) the significant changes in mental preparation occur only for a longer period of time, e.g. between PRE and POST; (3) There are no significant changes among all these personality traits between MID and POST; and (4) No significant changes were found for motivation and cooperation in any time period.

Duncan B, et.al(1983) Investigated effectiveness of a structured physical fitness program was compared with that of the customary organized activities for fifth grade students. The level of fitness was compared at the beginning and end of the nine-month academic year as well as after the three-month summer recess during which time no structured program was offered. The experimental group showed significant improvement over the control group in flexibility, strength and endurance during the school year; part of that improvement was maintained over the summer months; the physical fitness program had a positive influence on the general activity level of the students and was adopted by nine of the other 10 classrooms in the experimental school.

François Trudeau and Roy J Shephard(2008) examined, based on a systematic review of currently available literature, including a comprehensive search of MEDLINE (1966 to 1507), PSYCHINFO (1974 to 1507), SCHOLAR.GOOGLE.COM, and ERIC databases. Quasi-experimental data indicate that allocating up to an additional hour per day of curricular time to PA programmes does not affect the academic performance of primary school students negatively, even though the time allocated to other subjects usually shows a corresponding reduction.
An additional curricular emphasis on PE may result in small absolute gains in grade point average (GPA), and such findings strongly suggest a relative increase in performance per unit of academic teaching time. Further, the overwhelmingly majority of such programmes have demonstrated an improvement in some measures of physical fitness (PF). Cross-sectional observations show a positive association between academic performance and PA, but PF does not seem to show such an association. PA has positive influences on concentration, memory and classroom behaviour. Data from quasi-experimental studies find support in mechanistic experiments on cognitive function, pointing to a positive relationship between PA and intellectual performance. Given competent providers, PA can be added to the school curriculum by taking time from other subjects without risk of hindering student academic achievement. On the other hand, adding time to "academic" or "curricular" subjects by taking time from physical education programmes does not enhance grades in these subjects and maybe detrimental to health.

Green A, et.Al(1991) Examined whether personality profiles, using personality factors, or clusters of personality factors, are associated with academic success. One hundred and forty medical students of the University of Wales College of Medicine were invited to complete a personality questionnaire (Cattell 16 PF) as they sat their final examinations in June 1988. A total of 129 usable forms were obtained. The students were divided into four groups dependent on their academic performance, which had been monitored throughout the course. The majority (62%) had no academic problems, but 16 (12%) students had serious difficulties, which entailed delaying qualification by at least 6 months. There was no relationship between the scores obtained for the students' first attempt at A-level and their subsequent medical school academic performance. However, students who obtained a degree either before or during their medical course were significantly less likely to have academic problems. Academic success was not associated with any of Cattell's personality factors. This was true of previously reported groups of factors associated with the poor student performance, and regardless of first or second order factors. We conclude that this personality profile is unlikely to be helpful in selecting future intakes of medical students, although a prospective study would be required for a definite answer to this question.
Hill PL, Roberts BW, (2010) Studied that the new directions in the empirical study of moral personality development are needed. We set the stage for this future work by presenting six propositions that should serve as the foundation for future research in the field.

Jiunn-Horng et al. (2010) Studied to understand the personality traits, social support, and life stresses of male nursing students. The respective influences of personality traits and social support on life stress were also explored. The study used a cross-sectional research design. A college in central Taiwan was targeted as the site for data collection. A total of 158 questionnaires were dispatched, with 145 valid copies returned (valid response rate = 91.7%). Structured questionnaires were designed to collect data on participant demographics, personality traits, social support, and life stress. Statistical methods such as descriptive statistics, one-way analysis of variance, and multiple regression analysis were applied to data analysis. Major findings of this study revealed that (a) in general, the personality traits, social support, and life stress of male nursing students scored in the medium to high range. Participants reported encountering more stress from learning and life goals than from interpersonal stress. (b) Male nursing student demographic variables (e.g., parent [father and mother considered separately] education level) and the personality traits of conscientiousness and family support, respectively, were found to impact significantly on participant life stress perceptions. And (c) the only significant predictors of life stress were support from family and education level of participant fathers and mothers, accounting for about 23.7% of variability. Conclusions and Implications for Practice: It is suggested that nursing students in each year of their academic career should be exposed to courses.

Kriemler S, et al. (2010) Investigated to assess the effectiveness of a school based physical activity programme during one school year on physical and psychological health in young schoolchildren. 28 classes from 15 elementary schools in Switzerland randomly selected and assigned in a 4:3 ratio to an intervention (n=16) or control arm (n=12) after stratification for grade (first and fifth grade), from August 1505 to June 1506. 540 children, of whom 502 consented and presented at baseline. Children in the intervention arm (n=297) received a multi-component physical activity programme that included structuring the three existing physical education lessons each week and
adding two additional lessons a week, daily short activity breaks, and physical activity homework. Children (n=205) and parents in the control group were not informed of an intervention group. For most outcome measures, the assessors were blinded. 498 children completed the baseline and follow-up assessments (mean age 6.9 (SD 0.3) years for first grade, 11.1 (0.5) years for fifth grade). After adjustment for grade, sex, baseline values, and clustering within classes, children in the intervention arm compared with controls showed more negative changes in the z score of the sum of four skinfolds (-0.12, 95% confidence interval -0.21 to -0.03; P=0.009). Likewise, their z scores for aerobic fitness increased more favourably (0.17, 0.01 to 0.32; P=0.04), as did those for moderate-vigorous physical activity in school (1.19, 0.78 to 1.60; P<0.001), all day moderate-vigorous physical activity (0.44, 0.05 to 0.82; P=0.03), and total physical activity in school (0.92, 0.35 to 1.50; P=0.003). Z scores for overall daily physical activity (0.21, -0.21 to 0.63) and physical quality of life (0.42, -1.23 to 2.06) as well as psychological quality of life (0.59, -0.85 to 2.03) did not change significantly. A school based multi-component physical activity intervention including compulsory elements improved physical activity and fitness and reduced adiposity in children.
The purpose of the doctoral study was to find out the differences of health outcomes, academic stress, coping and self-efficacy between physical and non physical education students. This chapter explained the methodological details used to this doctoral work. Specifically, Sampling frame, sample method and sample size, source of data, demographic information, universe of the study, Ethical consideration, exclusion and inclusion criteria and data Analysis.

**Target population**

300 physical education and 300 other students selected for the study and their age ranged between 18-30 years.

**Demographic Information:**

The data will be collected through respondents in the form of different experimental tests. The demographic information about Gender, age, daily smoking, drug use, etc. was obtained before seeking responses.

**Inclusion and exclusion criteria**

The inclusion and exclusion criteria for participants were as follows:

The inclusion criteria are:
1. The participant agreed to participate in the study via an informed consent.

2. The participants must be sedentary student in their under and post graduate degree programme aged range was 18 to 30 years.

3. The participants were not rotating through other health facility at the time of study.

The exclusion criteria are:

1. Active Physical illness. The participants advised not to participate if under any injuries and management within 2 weeks of study.

2. Inability to obtain the consent of the respondent.

3. Presence of chronic medical conditions such as asthma, heart disease or any other condition. And

4. Participants free from the smoking, drug abuse and alcohol consumptions during the experimental period

2. Research design

The research design refers to “the researcher’s overall plan for testing the research hypotheses”. This study involves a cross sectional, comparative study of physical and non-physical education students. The research design of the study is to descriptive research design

Study area:

The study area was restricted to Marathwada region of Maharashtra.

Source of Data:

The study depends mainly on primary source of data. The data will be collected through respondents in physical and non-physical education students of Maharashtra. Instructions was given to the sports person before filling the questionnaires.
Tools of the psychological test

The data was collected through questionnaires. The instruction will be given by the investigator to the students before filling these questionnaires. Mental health was measure through Balkrishna (2004) questionnaire and personality measure through EPI and self-concept questionnaire were measure through the questionnaires of Rajkumari.

Academic Stress:

For assessment of Academic Stress, the Student-life Stress Inventory (SSI) (Gadzella, 1991) was used. The inventory reflected students’ life stress experiences. It consisted of 51 items describing five subscales of stressors (Frustrations, Conflicts, Pressures, Changes and Self-imposed) and four subscales of reactions to stressors (Physiological, Emotional, Behavioral, and Cognitive appraisal). Responses to the 51 items were made on a 5-point Likert scale from 1=never, 2=seldom, 3=occasionally, 4=often, and 5=most of the times. The SSI provided an overall perceived stress value by initially asking, “Rate your overall level of stress: mild, moderate, or severe”. This was the student’s perception prior to their responses and was treated as such. This overall perceived stress value was compared to Total Stress scores in the inventory. To score the SSI the values for each item were added together. Next the values for each category were summed. Then values within each of the nine subscales were added together (e.g. there are 7 items in the Frustration category). Next values for each category were added together. Finally the summation of the values in the subscales produced a Total Stress score. Pearson’s product moment coefficients were used to determine correlations between inventory subscales and initial overall perceived stress rating. For measuring the Academic stressors subscales. The Frustration subscale comprises 7 items and measures frustration that is due to delays, daily hassles to reach goals, lack of resources available (e.g., money for books, automobile), failures to accomplish goals, feelings of being a social outcast, dating problems, and denied opportunities in spite of one’s qualifications. The Conflict subscale has three items and measures Academic stress produced by having two or more desirable and undesirable alternatives and goals with positive and negative impacts. The three-item Changes subscale assesses Academic stress that is due to life changes and includes changes that are disruptive to the respondent’s life. The six-item
Self-Imposed subscale measures stress in areas such as when a student likes to compete to win or to be noticed and loved by all. Finally, the four items of the Pressure subscale measures Academic stress resulting from competition, deadlines, work overload, and work responsibilities and expectations. Cronbach’s alphas were .65, .63, .71, .75, and .63 for the Frustrations, Conflicts, Pressures, Changes, and Self-Imposed subscales, respectively. In the reactions to stressors section, four types of reactions to Academic stressors—Physiological (14 items), Emotional (4 items), Behavioral (8 items), and Cognitive (2 items) reactions—are assessed. The Physiological Reactions subscale measures responses such as sweating, stuttering, trembling, exhaustion, weight loss/gain, and headaches. Emotional Reactions include fear, anxiety, worry, anger, guilt, and grief. The Behavioral Reaction subscale measures reactions to stressful situations such as crying, drug use, smoking, and irritability. Cognitive Reactions are measured by the respondent’s ability to analyze and think about stressful situations and the use of effective strategies to reduce stress. Participants in the study obtained alphas of .78, .81, .68, and .85 for the Physiological, Emotional, Behavioral, and Cognitive subscales, respectively.

**Academic self-efficacy:**
To measure Academic self-efficacy, Yuen and his colleagues (2004B) Academic Self-efficacy scale extracted from the Life Skills Development Inventories were used (Cronbachs alpha = .90). The scale consisted of 24 items and its measures four dimensions of Academic self-efficacy; namely, Study skills (items 1,5,9,13,17, 21); Time management (items. 2, 6, 10, 14, 18, 22); Critical and creative thinking (items 3, 7, 11, 15, 19, 23); Involvement in Learning (items, 4, 8, 12, 16, 20, 24).

**Health outcomes.**
In assessing the Health outcomes, the Medical Outcome Study: Short-form 36 (MOS SF-36) that was developed by Ware, Snow, Kosinski, Gandek (1993) was used. It assesses eight Health concepts including: Perceived general Health (5 items); Physical functioning (10 items); Social functioning (2 items); Bodily pain (2 items); Vitality (4 items); Physical role (4 items); Emotional role (3 items); and Mental Health (5 items). There is a single item concerning participants general Health compared to one year ago. Standardization of raw scores was obtained following the suggestion of the Manual and Interpretation Guide (Ware, 1993). Cronbachs alphas were .81, .89, .55, .75, .72, .76, .78 and .79 for the eight subscales respectively. It provides a
comprehensive view of a person's Health status

Coping.

The Ways of Coping-Revised (WOC-R) Scale was used and it was developed from a study of the ways of coping college students used to deal with an examination (Folkman & Lazarus, 1988). This version is more suitable than other WOC scale for investigations because it is highly relevant to college students. It included 66-items in the questionnaire asking about the cognitive and behavioural strategies that students used to deal with the internal and/ or external demands of a stressful situation encountered, which were referred to as Academic stress in the current study. Items were rated by a 4-point Likert scale from 0 = does not apply and or not used to 3 = used a great deal. There are eight subscales including Problem-focused coping, (11 items); Wishful thinking, (5-items); Detachment (6-items); Seeking social support, (7-items); Focusing on the positive, (4-items); Self-blame, (3-items); Tension reduction, (3-items) and Keep to self, (3-items). The Cronbachs alphas were .80, .76, .64, .68, .70, .52, .46 and .56 respectively.

Data processing:

Data processing play very significant role in the interpretation of numerical data obtained from individuals by giving numerical expressions to the relationships and the variations with respect to different aspects. The collected data will be analyzed as a whole and fragments. The data was checked for accuracy and completeness and was coded and put up into the SPSS Descriptive statistics for all studied variables, F-test, was considered statistically technique throughout the study. The level of significant was set-up at 0.05 level.
**Tentative Chapterization:**

The present study will be divided in the following chapters:

**Chapter - 1**

The Chapter One outlines the background of the problem under consideration, its significance in the present scenario, the scope of the study, objectives the research intends to achieve and hypotheses to be established. This chapters also includes the definition and explanation of important technical terms related to the study.

**Chapter - 2**

The Chapter Two undertakes the review of literature related to the present topic of study and tries to define the problem under consideration in a proper way. Firstly, the chapter defines important terms and concepts in a proper way to give readers an understanding of various terms in the research report. Secondly, it critically reviews the gender-based violence. The chapter identifies the research gaps between the problem under consideration and the available literature on the issues and strongly recommends further exploration on the problem.

**Chapter - 3**

This includes a detailed methodology of conducting research on the issue under consideration and various components of research design such as the universe, the
sample, types of data, tools of data collection, technique of data collection, ethical consideration and methods use to analyse data.

**Chapter - 4**

The Chapter includes the interpretation of data and results of the study. The results of the study will be illustrated through suitable table and figure. This chapter will also include the discussion of findings.

**Chapter - 5**

The Chapter five summarizes the findings of the study and conclusions derived thereof. The research has also made some valuable suggestions for further research.

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