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## Effects of Low Intensity Exercise (Lie) On Life Stress on Sedentary Students

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### Abstract:

The purpose of the study is to examine the effects of low intensity exercise that are covered in the academic programme of physical education department on the Academic Stress among students. 30 male students studying in different Departments of the Swami Ramanand Teerth Marathwada University Nanded, Maharashtra (India) had attended the study voluntarily. Exclusion criteria were the presence of chronic medical conditions such as asthma, heart disease or any other condition that would put the subjects at risk when performing the experimental tests. The subjects were free from smoking, alcohol and caffeine consumption, antioxidant supplementation and drugs during the programmes. They completed an informed consent document to participate in the study. Pre and Post tests of Academic Stress were taken in the laboratory of physical education department for academic year 2012-13 of the study. Academic stress of students measure by using Gadzella's Life Stress Inventory (B. M. Gadzella, 1991). Five categories of academic stressors namely frustrations, conflicts, pressures, changes, and self-imposed and four categories describing reactions to these stressors like physiological, emotional, behavioral, and cognitive were comprised. The applied program was planned for six weeks, 4 days a week and 45 minutes a day, as the statistical techniques, Mean scores and standard deviation were taking percentage and paired t-test was applied. The result reveals that low intensity exercise reduce severe level stress of students. There was significant effects of health-related physical fitness programmes on frustrations ( $t=p<.05$ ), conflicts ( $t=p<.05$ ) and self-imposed ( $t=p<.05$ ) were found in students in academic stressors dimension with combined sample ( $t=p<.05$ ). While comparing reaction to stressors, there were significant effects of health-related physical fitness programmes were found in Physiological ( $t=p<.05$ ), Behavioral ( $t=p<.05$ ), Emotional ( $t=p<.05$ ) and cognitive ( $t=p<.05$ ) dimension with combined sample ( $t=p<.05$ ). Health-related physical fitness programmes decrease frustrations, conflicts and Pressure of academic stressors and to health-related physical fitness programmes increase physiological, Emotional and cognitive dimension of reaction to stressors.

According to the result, I conclude that low intensity exercise in physical education department is academic programme. It is not only beneficial to decrease the life stress and to improve mental health of students but also inform policies and practices designed to reduce student stress and improve learning, academic performance, and mental health.

**Key words :** Academic stress, Reaction to stressors, Elite students, Health related physical fitness, level of stress

### Introduction

Sedentary life style is a one of the growing health problem. Sedentary life style will contribute to the early onset and progression of life style disease such as cardiovascular disease, hypertension, diabetes and obesity. Life stress is mental and emotional pressure, tension, or stress that occurs due to the demands of college life (DeDeyn,2008). low intensity exercise is important components of a healthy lifestyle. There are many benefits of exercise: a better functioning of cardio vascular system and an improved sense of psychological well-being and decrease the stress. The physical fitness related benefits are especially important for people associated with psychological disorders which are at greater risk of coronary artery diseases, obesity, hypertension, hypotension and other health problems (Armstrong 1991, Maynard 1991). Various authors (Horton's Es 1998, Armstrong 1991 and Maynard1991) have reported that regular exercise has improved the cardio vascular system, decreased some of the risk factors leading to a cardiovascular disease, promoted fat loss, increased muscle mass, increased glucose intake by cells and enhanced well-

being of the sedentary students. In other research (Jackson J et.al. 1968, Clausen J P 1997) low intensity exercise was noted to improve psychological health and work capacity, Participation to physical activities is rapidly decreased specially in the college and university education. In this context, fitness programme applications that are covered by the study in the field of physical education departments have an important role. Therefore, this study endeavors to examine the effects of low intensity exercise that are covered in the academic programme of physical education department on the academic stress.

### Materials and Methods

**Subjects:** Thirty post graduate students from various department of Swami Ramanand Teerth Marathwada University Nanded, voluntary to participate in the low intensity exercise. Exclusion criteria were the presence of chronic medical conditions such as asthma, heart disease or any other condition that would put the subjects at risk when performing the experimental tests. The subjects were free of smoking, alcohol and caffeine consumption, antioxidant supplementation and drugs during the programmes. All subjects were measured in physical education department laboratory. All 30 acted as experimental group for low intensity exercise with no control groups.

### Applied training programme

A training programme was planned for 8 weeks, 4 days a week and 45 minutes a day. Exercise that use large muscles groups that can be maintained continuously and are aerobic in nature. These exercises include walking, running on treadmill, jogging, light weight exercise, . There was training programmes in the academic schedule of physical education department. The exercise session should consist of the following procedure: Warm - up period will be approximately 10 min., this was combine callisthenic – type stretching, exercise and progressive aerobic activity. However, cool down period was 5 to 10 min.

### Measurement of academic stress

The life stress was measurement through the before and after low intensity exercise on 30 sedentary students using with Students-life Stress Inventory. The data was checked for accuracy and completeness and was coded and put-up into the SPSS. Descriptive statistics for all studied variables, mean, standard deviation and t-ratio was considered statistically technique throughout the study and the level of significant was set-up at 0.05 level. For measure the academic stress, Gadzella's (1991) Students-life Stress Inventory was used. It was compose of 51 items to be divided into two major sections: types of stressors and reactions to stressors. The type of stressors section was including both personal and academic stressors and is divided into the following five categories: frustrations, conflicts, pressures, changes, and self-imposed. The reactions to stressors section was comprise of the following four categories: physiological, emotional, behavioral, and cognitive. Participants respond to a five-point scale using 1 = never, 2 = seldom, 3 = occasionally, 4 = often, and 5 = most of the time. The Statistical technique used for analyzing the collected data in the study was 't' value.

### Results and Discussion

The results and discussion have been presented in concise and comprehensive manner that is easy to comprehend. The results concerning this are presented in the form of tables. For the sake of convenience and methodical presentation of the results, following order has been adopted.

Table 1

Morphological Characteristics Of Elite Level Students

| Sr.No. | Parameters | Mean   | SDs   |
|--------|------------|--------|-------|
| 1      | Age        | 22.78  | 3.68  |
| 2      | Height     | 178.33 | 14.54 |
| 3      | Weight     | 74.39  | 6.44  |

Table -1 shows the mean age of students were  $22.78 \pm 3.68$ , height were  $178.33 \pm 14.54$  cm. the weight were  $74.39 \pm 6.44$  in Kg

**Table: - 2**  
**Rate Of Overall Level Of Elite Level Students**

| Sr. No. | Overall level of stress | Students      |                |
|---------|-------------------------|---------------|----------------|
|         |                         | Pre-test      | Post - test    |
| 1.      | Mild                    | 53.33%        | <b>56.66 %</b> |
| 2.      | Moderate                | 30.00%        | <b>26.66%</b>  |
| 3.      | Severe                  | <b>16.66%</b> | <b>14.33%</b>  |

Table 2 shows the rate of overall level of stress between pre and post-test of students. The result reveals that 53.33% students reported mild stress, 30.00% students reported moderate stress and 16.66 % students reported severe level stress before health related physical fitness programme. Whereas 56.66% students reported mild stress, 26.66% students reported moderate stress and 14.33% students reported severe level of stress after training health related physical fitness programme.

**Table-3**  
**Mean Scores, Standard Deviation And T-Ratio Of The Academic Stressors**  
**Between Before And After Lie Of Students .**

| Dimension                 | Programmes | Number | Mean  | S.Ds. | t-ratio |
|---------------------------|------------|--------|-------|-------|---------|
| <b>Frustration</b>        | Before LIE | 30     | 16.41 | 4.67  | 2.95*   |
|                           | After LIE  | 30     | 13.10 | 3.12  |         |
| <b>Conflicts</b>          | Before LIE | 30     | 12.98 | 2.18  | 4.50*   |
|                           | After LIE  | 30     | 10.32 | 2.01  |         |
| <b>Pressure</b>           | Before LIE | 30     | 10.10 | 2.30  | 0.04    |
|                           | After LIE  | 30     | 10.07 | 2.27  |         |
| <b>Changes</b>            | Before LIE | 30     | 09.34 | 1.87  | 0.21    |
|                           | After LIE  | 30     | 9.45  | 1.89  |         |
| <b>Self imposed</b>       | Before LIE | 30     | 15.98 | 3.67  | 2.99*   |
|                           | After LIE  | 30     | 13.78 | 3.17  |         |
| <b>Academic Stressors</b> | Before LIE | 30     | 64.56 | 14.54 | 2.15*   |
|                           | After LIE  | 30     | 56.34 | 12.34 |         |

Table-3 depicted Mean Scores, Standard Deviation and t-ratio of the academic stressors along with its five categories between before and after LIE. The result given in Table 1 reveals that significant effects of LIE on Academic stress was found between before and after health related physical fitness programme (LIE) on students (  $t=2.15, <.05$ ). In order to find out the effects of five categories of academic stressors between before and after LIE; t-ratio was computed for each category separately. The result reveals that significant effects were found in academic stress with respect to Frustration ( $t=2.95, <.05$ ) , conflict ( $t=4.50, <.05$ ) and Changes ( $t=2.99, <.05$ .) between Before and after LIE . However, insignificant effects were found in Pressure ( $t=0.04$ .) and Self imposed ( $t=0.21$ .) between before and after LIE on academic stress.



**Table-4**  
**Mean Scores, Standard Deviation And T-Ratio Of Reactions To Stressors**  
**Between Before And After Lie Of Students.**

| Dimension            | Programmes | Number | Mean  | S.Ds. | t-ratio |
|----------------------|------------|--------|-------|-------|---------|
| Physiological,       | Before LIE | 30     | 35.63 | 6.45  | 2.37*   |
|                      | After LIE  | 30     | 31.67 | 5.35  |         |
| Emotional,           | Before LIE | 30     | 13.95 | 2.82  | 2.44*   |
|                      | After LIE  | 30     | 12.12 | 2.54  |         |
| Behavioral,          | Before LIE | 30     | 13.91 | 3.10  | 2.27*   |
|                      | After LIE  | 30     | 12.02 | 2.78  |         |
| Cognitive            | Before LIE | 30     | 5.39  | 1.06  | 2.27*   |
|                      | After LIE  | 30     | 4.59  | 1.01  |         |
| Reaction to stressor | Before LIE | 30     | 68.75 | 13.27 | 2.67*   |
|                      | After LIE  | 30     | 60.31 | 11.56 |         |

\* Significant at .05 level.

Table 4 depicted Mean Scores, Standard Deviation and t-ratio of the Reactions to stressors along with its four categories between before and after LIE. The result given in Table 2 reveals that significant effects of Reactions to stressors was found between before and after LIE ( $t = 2.67, <.05$ ). In order to find out the effects of four categories of Reactions to stressors between before and after LIE; t-ratio was computed for each category separately. The result reveals that significant effects was found in Physiological Reactions to stressors ( $t=2.37, <.05$ ), emotional Reactions to stressors ( $t=2.44, <.05$ ) Behavioral Reactions to stressors ( $t=2.27, <.05$ ), and cognitive Reactions to stressors ( $t=2.75, <.05$ ) between Before and after LIE on academic stress.

**Discussion**

Various studies had been done on students stress, but there is no studies have been done with respect to examining the health related physical fitness programme on academic stress in sedentary students so far. Every effort is desperately being made by all those who are connected with student health to find ways and means to improve the psychological health. Under these circumstances, the role of educationist, teachers, professors doctors psychologist becomes all the more important to provide scientific back up to the students and trainers to make them realize the full potential of the students to achieve their mental health and reduce study related stress. This is possible only if appropriate research is carried out on students and the findings are used in society. There is a scarcity of research reports on academic stress and mental health of medical students and require a very extensive effort. The effort made by the investigator, can prove very useful for reduce academic stress and improve mental health. The findings of the study showed that health related physical fitness programme reduce the severe level of stress whereas Academic stress was lowered due to 8 weeks low intensity exercise (LIE). In addition, Frustration, conflict and Self-imposed minimize due to LIE. Furthmore, Reactions to stressors was also decrease after LIE ( $t = 2.67, <.05$ ). LIE significantly effects on Physiological Reactions to stressors emotional Reactions to stressors Behavioral Reactions to stressors. Preliminary evidence suggests that physically active people have lower rates of stress and anxiety. Economos, Hildebrant, & Hyatt, (2008), Shangare(2014) investigated that Engaging in more physical activity improves psychological health and decreases stress. The several researches have also shown that physical activity is an effective means of reducing anxiety and various indices of stress among adults (Bhui, 2002; Dunn, Trivedi, & O’Neal, 2001). Finally, health- related fitness programme has an important role for students to feel themselves better and achieve their academic performance.

### Conclusions

It is found that the low intensity exercise in the physical education schedule has beneficial effects in reducing the academic stress of students besides, it may be also concluded that the results of the present study indicate that trainees get experience in their occupation, be happier and this is important to improve their knowledge owing to communicating mutually. In this perspective, physical fitness makes education more active and effective in physical education colleges that educate students in movement basis.

### Limitations

Results of this study are limited by a relatively small preliminary of self-reported academic stress rather than a study of actual behavior, which would be very difficult to achieve. As such, participants may have answered questions in a socially desirable manner to avoid the stigma associated with admitting personal inadequacies. To keep the student data-collection time within reasonable limits, information on life stress self-reported and no special psychometric instruments were used to measure it. Future research is warranted on estimating the level of stress by psychometric instruments.

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