



International Journal of Physical Education, Sports and Health

P-ISSN: 2394-1685
E-ISSN: 2394-1693
Impact Factor (ISRA): 4.69
IJPESH 2016; 3(2): 257-259
© 2016 IJPESH
www.kheljournal.com
Received: 24-01-2016
Accepted: 25-02-2016

Dr. Jaswant Singh Thakur
Assistant Professor, Department
of Physical Education, GGV
Bilaspur (C.G)

Relationship of perceived stress with the cardiovascular fitness of sportsmen

Dr. Jaswant Singh Thakur

Abstract

The main purpose of this study was to investigate the relationship of Stress with the Cardiovascular Fitness of sportsmen. A secondary purpose was to investigate the descriptive expressed of Stress and Cardiovascular Fitness of sportsmen. Sixty (60) subjects were selected from sportsmen for this study: 60 male sportsmen were selected from Hockey, Football, and Cricket. Selected subjects ages ranged from 21 to 25 years and were students of Guru Ghasidas University, Bilaspur (C.G.). To determine the cardiovascular fitness of sportsmen, Rockport 1-mile walk (Kline and colleagues, 1987) test was administered. Perceived Stress Scale (PSS; Coehn, Kamarch, & Mermelstein, 1983) was administered to find out the relationship of stress with the cardiovascular fitness of sportsmen. The statistical technique employed for this study was Pearson's Product Moment Correlation was used. As per the statistical analysis Negative correlation was found between VO₂max and Stress($r=-.029$) at $p<0.05$.

Keywords: Perceived Stress, cardiovascular fitness.

Introduction

The productive life of a person differs according to multiple variables that have an effect on each individual, such as feeding, environment conditions, addictions, stress, hours of rest, and genetics among others; they can determine the physical and mental state in a mature age. A feeling of wellness can improve the conditions of survival, while the level of Physical Fitness influences, directly the capacities to carry out a task (Ilmarinen, 2002)^[5].

The sports competitions are always stressful and players must have the knowledge to deal with pre game nerves. Athletes exposed to high levels of physical training in order to elicit training adaptations and improve performance (Bompa, 1983)^[1] overload training techniques are commonly employed to optimize performance at the time of competition. This involves progressively increasing training loads followed by appropriate periods of reduced training or tapering prior to competition. Fitness components contained various discipline such as cardiovascular fitness, muscular strength, flexibility etc. Cardiovascular fitness, which is the body's ability to extract and use oxygen in a manner that permits continuous exercise and physical activities. Oxygen uptake peak (VO₂ peak) or VO₂ max indicates the functional capacity of cardiovascular function and is often considered as the benchmark indicator of cardiovascular fitness (Mc Ardle *et al.*, 1996). Exercise scientists have recently suggested minimal VO₂ peak (ml·kg⁻¹·min⁻¹) values for health fitness (Cooper, 1968; Cureton *et al.*, 1990). Based on Cooper's suggestion of a VO₂max ≥ 42 ml·kg⁻¹·min⁻¹ in adult males as indicative of good health and functional capacity. In psychology, coping is expending conscious effort to solve difficult personal and interpersonal problems, and seeking to master, minimize or tolerate stress or conflict. Overtraining results from a combination of physical and psychological stresses, with emotional stress and anxiety often as important as physical stress. Inadequate recovery time combined with increased physical and psychological stressors can result in over training. Psychological coping mechanisms are commonly termed coping strategies or coping skills. Unconscious or non conscious strategies (e.g., defense mechanisms) are generally excluded. The term coping generally refers to adaptive or constructive coping strategies, i.e., the strategies reduce stress levels. However, some coping strategies can be considered maladaptive, i.e., stress levels increase. Maladaptive coping can thus be described, in effect, as non-coping. Furthermore, the term coping generally refers to reactive coping, i.e., the coping response follows the stressor.

Correspondence
Dr. Jaswant Singh Thakur
Assistant Professor, Department
of Physical Education, GGV
Bilaspur (C.G)

This contrasts with proactive coping, in which a coping response aims to head off a future stressor. Coping responses are partly controlled by personality (habitual traits), but also partly by the social context, particularly the nature of the stressful environment

Therefore, researcher felt to know Stress were reciprocal and significantly correlated with cardiovascular fitness at different level situation, we consider it is necessary to attempt a relationship of Stress with the cardiovascular fitness of sportsmen.

Objective of the Study

The objective of the study is to assess the relationship between Stress with cardiovascular fitness of sportsmen.

Methodology

For the study were (N=60)sportsmen male recruited from Guru Ghasidas University, from different courses who represented National and University level of competition were randomly selected aged ranged between 21 to25 years and 100% provided permission to use data from class project for research purpose.

Description and Administration of Questionnaire

The subject was assessed on selected criterion variables namely. Perceived Stress Scale (PSS; Coehn, Kamarch, & Mermelstein, 1983) [3] has 10items. The PSS is scored on a five-point scale, with response options ranging from 1 =never to 5 = very often. The respondent made a tick (✓) on any one of the responses that fit to them best. The Questionnaire to assess stress was administered on students in class room setting. The Questionnaire also included the demographic profile of students. Students attempted the questionnaire after the brief description about the concept of stress. Students were restricted from discussion and were advised to attempt the questionnaire in a short notice without taking much time for thinking.

Assessment of the Cardiovascular Fitness

Several simple assessment tests provide reasonably good estimates of maximal oxygen consumption (within 10–15% of the results of a laboratory test). For this study 1-mile walk test (Kline and colleagues, 1987) was used to measure cardiovascular fitness between groups to estimates the level of cardio respiratory fitness (maximal oxygen consumption). The procedure involves using the time of a milewalk, gender, age, body weight, and ending heart rate to estimate vo2 max. The 1 mile walk requires the subject to walk as fast as possible and cover the distance of 1-mile in minimum time; there heart rate are taken immediately at the end of the walk. The heart rate of every individual was taken for 60 seconds. Test was conducted on sports ground under the supervision of qualified tester’s. The suggested equation follows:

$$VO2max = 132.853 - (0.0769 \times W) - (0.3877 \times A) + (6.315 \times G) - (3.2649 \times T) - (0.1565 \times H)$$

W = weight (in pounds)

A = age (in years)

G = gender (male = 1; female =0)

T = time to complete the 1-mile course (in minutes)

H = exercise heart rate (in beats per minute).

Data Analysis

Statistical Analysis: For data analysis responses were expressed as mean and standard deviation. The further statistical analysis Pearson Product Moment correlation was

carried on to find the relationship of stress with cardiovascular fitness sportsmen at $p < 0.05$ level. Data analysis was performed using SPSS 17.0 software under windows.

Results

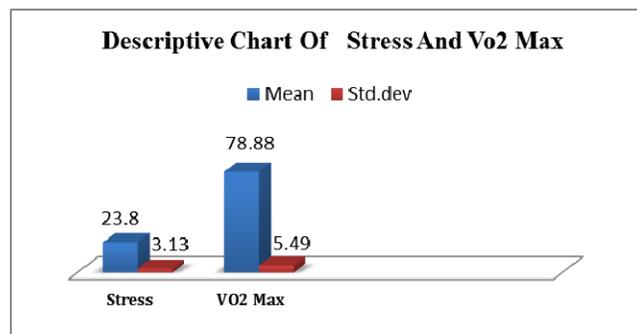
To assess correlation of stress with cardiovascular fitness and the means and standard deviations of the total subject has been presented in tables.

Table 1

Variable	N	Meam	Std.dev	R
VO2 Max	60	23.8	3.13	-.029
Stress	60	78.88	5.49	

*Significant at 0.05 level.

Graphical Chart of Selected Variables



Discussion

Result of present study reveals the negative correlation($r = -.029$) between Perceived stress and cardiovascular fitness (VO2 Max).Hence result contrast, athlete with higher level of Physical fitness reduced the levels of athlete stress.According the present study the cardiovascular fitness and stress relationship is explored, it has typically been within the perspective of improving mental health outcomes via exercise. As earlier study suggested, those who exercise have lesser rates of depression, negative affectivity, and anxiety. Indeed, PA and exercise have been demonstrated to promote positive changes in one’s mental health and ability to cope with stressful encounters. Moreover, exercise interventions appear to improve one’s depression status.

Conclusion

Overall, the majority of the study finds that the experience of stress impairs efforts to be physically active. Future work should centre on the development of a theory explaining the mechanisms underlying the multifarious influences of stress on PA behaviours.

References

1. Bompa TO. Theory and Methodology of Training. Dubuque, IA: Kendall/Hunt, 1983.
2. Chrousos G, Gold PW. The concepts of stress and stress system disorder: overview of physical and behavioral homeostasis. JAMA. 1992; 267:1244-52.
3. Cohen S, Kamarck T, Mermelstein R. A global measure of perceived stress. Journal of Health and Social Behavior. 1983; 24:385-396.
4. Dunn AL, Trivedi MH, O’Neal HA. Physical activity dose-response effects on outcomes of depression and anxiety. Med Sci Sports Exerc 2001; 33(6):S587-97.
5. Ilmarinen J. Physical requirements associated with the

- work of aging workers in the European Union. *Experimental Aging Research* 2002; 28:7e10.
6. Long BC. Aerobic conditioning and stress reduction: participation or conditioning? *Hum Mov Sci* 1983; 2(3):171-86.
 7. Mishra MK, Menon S, Rathore VS. Relationship of Body Mass Index with Fat Percentage and Waist Hip Ratio of University Boys. *European Academic Research*. 2015; III(2):1937-1946.
 8. Mishra MK, Pandey AK, Chaubey D. A Comparative Study of Vo2 Max among the Basketball, Football, Volleyball and Hockey Male Players. *International Journal of Applied Research*. 2015; 1(11):245-247.
 9. Mishra MK, Rathore VS. Selected Anthropometric Parameters as a Predictors of Volleyball Playing Ability. *International Journal of Science and Research*. 2015; 4(9):436-439.
 10. Mishra MK, Thakur JS. An Estimation of Kho-Kho Performance on the Basis of Selected Physical Fitness Parameters. *International Journal of Sports Sciences and Fitness*. 2015; 5(2):235-250.
 11. Rethorst CD, Wipfli BM, Landers DM. The antidepressive effects of exercise: a meta-analysis of randomized trials. *Sports Med*. 2009; 39(6):491-511.
 12. Salmon P. Effects of physical exercise on anxiety, depression, and sensitivity to stress: a unifying theory. *Clin Psychol Rev*. 2001; 21(1):33-61.
 13. Wipfli BM, Rethorst CD, Landers DM. The anxiolytic effects of exercise: a meta-analysis of randomized trials and dose-response analysis. *J Sport Exerc Psychol*. 2008, 2009; 30(4):392-410.