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SUITABILITY OF YOGIC INTERVENTIONS TO DEAL STRESS IN YOUNG WOMEN

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ABSTRACT

Compartmentalized approach to life, as against a holistic approach, has only added to human stress resulting in disorders and psychosomatic diseases, precluding human beings to bask in the bliss of stress free life. Stress is a transition between the person and the environmental that includes the person's appraisal of the challengers posed by the situation as well as resources available for coping up with the challenges along with the psychological and physiological responses to those perceived challenges. Researchers have discovered that the regular practice of yoga may produce many health benefits, including increased fitness, normalization of blood pressure and reduction of stress. Yoga is a form of exercise based on the belief that the body and breath are intimately connected with the mind. In the last few decades, young women are becoming susceptible to multiple lifestyle problems.The purpose of the present investigation was to examine the effectiveness of yogic practice on stress levels of young women pursuing their post-graduation during 2017-18 at Kuvempu University.The subjects for the study were thirty post-graduate students of Kuvempu University during 2018. The age of the subjects ranged from 20 to 25 years. All of them were hostel residents without any illness. The stress in the subjects was assessed through the administration of the standard stress scale developd by Gross and Seebaß, (2014).The results pointed out that the practice of yoga did not have any significant effect on young women.

Key words: Yoga, stress, young women, asana, pranayama, meditation,

1. INTRODUCTION

The human race has evolved much during the last few centuries. From a nomadic being concerned with only survival and influenced by the changes of nature, human beings have evolved to the present state where nature is beginning to be better understood and controlled. Tremendous progress has been achieved in the fields of science and technology, and commerce and medicine bringing about assiduous changes in the social, economic and political systems causing dispersion of human energies at all levels. The rapid changes in the external world have come about without the appreciation of consciousness, which is the basis of life. This has made the instruments of life namely the body-mind complex to deviate from consciousness to the pernicious thought process causing human beings to be in a state of permanent stress. Moreover, a compartmentalized approach to life, as against a holistic approach, has only added to human stress resulting in disorders and psychosomatic diseases, precluding human beings to bask in the bliss of stress free life (Venkatkrishnan, 2008). Industrialization, commercialization and modernization has caused tremendous pressure on the human beings leading to stress and strain. This stress and strain is causing physical, mental and social imbalance in society (Lohan, 2006).

1.1 STRESS

Stress is a transition between the person and the environmental that includes the person's appraisal of the challengers posed by the situation as well as resources available for coping up with the challenges along with the psychological and physiological responses to those perceived challenges. Stress is an exaggerated response. Dr. Selvamurthy, gives an excellent definition of stress. According to him, "Stress is an altered state of body and mind from normal homeostatic condition that is caused do to extrinsic or intrinsic factors" (Varghese & Paul, 2013). Stress is the modern killer disease that is sapping human beings of their vitality and destroying the quality of human life. Stress has resulted in a host of psychosomatic diseases like cancer, diabetes, hypertension and mental illnesses. The modern world with its aggressive attitude and competitive environment has put everyone in a state of permanent stress. The sad part of stress is that once we get into the stress groove it is very difficult to get out of it. Stress not only saps us of our energy but also destroys the joy of life. It adversely impacts both our working and family life (Venkatkrishnan).

The only way to control this stress and strain is yoga. Yoga is a timeless pragmatic science evolved over thousands of years dealing with the physical, moral, mental and spiritual well-being of man as a whole. Yogic practices are such practices which can be done without an investment of money, time etc., and can be mastered easily with optimum effects. So, yoga is a solution of all worldly issues (Lohan, 2006).

Researchers have discovered that the regular practice of yoga may produce many health benefits, including increased fitness, normalization of blood pressure and reduction of stress. Over time, yoga practitioners report lower levels of stress, and increased feelings of happiness and wellbeing. This is because concentrating on the postures and the breath act as a powerful form of meditation. The classical techniques of yoga date back more than 5,000 years. The practice of yoga encourages effort, intelligence, accuracy, thoroughness, commitment and dedication (Scott 2014).

Although yoga has such a potential power, which adds more health, more vigour, still most people have lack of knowledge of systematic practice of yoga. Most of them

perform yogic exercises for a short period, and as and when the health improves they discontinue the yoga practice. For this reason, the effective results of yogic practices cannot be determined perfectly. Many scientists, doctors, psychologists etc. All over the world are extensively studying the beneficial aspects of yoga which give us encouraging results of positive health through yoga.

1.2 YOGA

The word yoga has its roots in the Sanskrit language and means to merge, join or unite. Yoga is a form of exercise based on the belief that the body and breath are intimately connected with the mind. By controlling the breath and holding the body in steady poses, or asana, yoga creates harmony. Yoga is a means of balancing and harmonizing the body, mind and emotions and is a tool that allows us to withdraw from the chaos of the world and find a quiet space within. Yoga is one of the original concepts which today would be labelled as holistic. It means that the body is related to the breath; both are related to the brain, in turn this links with the mind, which is a part of consciousness.

In the last few decades, young women are becoming susceptible to multiple lifestyle problems. Their lives are being risked not only by increase in fast-food consumption, sedentary leisure, irregular sleep, lack of physical activity, unhealthy daily routine habits and also by reduction in intake of fruits and vegetables (Braithwaite, et al, 2014). A majority of causes of young womens morbidity and mortality are either moderated or mediated by such alterations in adolescent lifestyle (Thirlaway, K, et al, 2009). The experience of stress and aggressive behavior are directly linked with intake of fast foods (Pereira et al., 2005). Obesity is increasingly becoming prevalent in younger generations (Sunitha&Gururaj, 2014). A number of adjustment disorders, relational problems, anxiety, and mood disorders appear to be related with irregular sleep and unnatural daily routine (Bailly et al., 2004).

The purpose of the present investigation was to examine the effectiveness of yogic practice on stress levels of young women pursuing their post-graduation during 2017-18 at Kuvempu University.

2. METHODOLOGY

2.1 Selection of Subject

. The subjects for the study were thirty post-graduate students of Kuvempu University during 2017-18. The age of the subjects ranged from 20 to 25 years. All of them were hostel residents without any illness.

2.2 Instrumentation

The stress in the subjects was assessed through the administration of the standard stress scale developed by Gross and Seebaß, (2014). The necessary data was collected in a class room set up with a brief orientation regarding objective of the study.

2.3 Training Protocol

Yogic intervention in terms of asanas and pranayama were practiced thrice a week for twelve weeks. The asanas selected in the study were as per the reviews gone through, discussion with experts and insight of the investigator.

2.4 Statistical Analysis

The mean and standard deviation, 't' test for paired sample was employed.

2.5 Research Design

The study is a single group pre-test post-test design

3. RESULTS

The raw data on various aspects of stress and overall stress was subjected to intended statistical techniques and he results are given in below table 1.

		Mean	t-ratio	Sig. (2-tailed)	MD	σ_{DM}
Over commitment, workload	**Pre test**	2.63	0.270	0.788	0.0400	0.14811
	Post test	2.67				
Enjoyment of work, self-realization, empowerment	**Pre test**	3.19	1.805	0.076	0.2223	0.12315
	Post test	2.97				
Social distress, social support, social approval	**Pre test**	2.92	0.161	0.873	0.0163	0.10149
	Post test	2.94				
Recreational capacities, exhaustion	**Pre test**	3.12	0.045	0.964	0.0043	0.09663
	Post test	3.12				
Anxiety about the future, uncertainty	**Pre test**	3.18	1.171	0.246	0.2166	0.18501
	Post test	2.96				
Overall stress	**Pre test**	3.00	0.679	0.500	0.0507	0.07466
	Post test	2.95				

From table 1, it is clear that there was no significant difference in different sub aspects of stress as well as overall stress in the post test situation following a pre-test. The results clearly point out that the practice of yoga did not have any significant effect on young women.

4. DISCUSSION

The results in the present context do not support the popular belief on efficacy of yogic practice on stress management. Most studies described beneficial effects of yoga interventions (Ospina., et. al., 2007). Although not all studies used adequate and/or consistent instruments to measure stress, they nevertheless indicate that yoga may reduce perceived stress as effective as other active control interventions such as relaxation, cognitive behavioural therapy, or dance (Bussing, et. al., 2012).

The findings of this study were inconsistent with the study of the general population, showing that a therapeutic yoga program, similar to a mindfulness-based program, significantly improved perceived stress (Wolever et al., 2012). Significant reductions in stress and all psychological health measures were found within the Yoga group over 16 weeks in another study by Kaur and Kumar (2016).Maddux, Daukantaité and Tellhed (2018) concluded from the analysis that yoga and meditation has positive impact on improved mood, reduced stress, lesser psychological distress, improved concentration and decision making and an improved ability to override impulse for female. In spite of all the positive benefits quoted here, additional studies are needed to distinguish between the different types of yoga and their benefits on stress management. All of these studies need to use rigorous study methodologies, including the use of larger sample sizes, randomized samples, and blinding of researchers. Including Dhyana in the prospective studies may be thought seriously.

5. CONCLUSION

Yogic practice including selected asanas and pranayama is not beneficial for reducing stress significantly in young post graduate females.

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BRA STRAP SYNDROME IN WOMEN ATHLETS : A CASE REPORT

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ABSTRACT

Bra strap syndrome is depressed marks or rawness in the shoulder due to wearing of bras which have narrow or small straps or worn out straps. These causes pain, problems of mobility and even weakness in the arms. Women who are older and obese have higher risk. Similarly women with large breasts who choose bras with small straps will likely to get affected more.

These can be prevented by wearing proper size bras and bras with wider shoulder strap to reduce pressure on shoulder. Functionally sports Bras are almost always made with wide soft straps that are designed to eliminate this problem by dispersing pressure more widely across the shoulder.

These can be prevented by discarding old bras which has lost elasticity- Proper fitting bras to wear which will reduce any risk of poor circulation. Loosing weight and regular exercise will reduce chance to compress nerves.

In case of tight fitting bra, shoulder indentations and subsequent neural impingement is a problem. Old, worn out bras whose materials have lost the ability to give and sit snugly against the body ware also common offenders. Bigger busted women commonly run in to cause by underlying tightly fitted straps

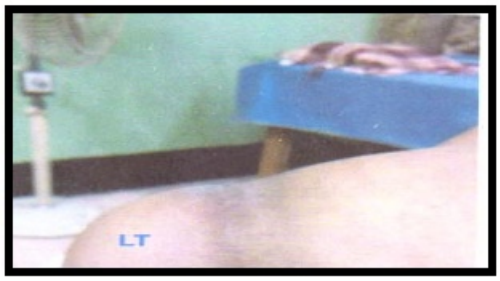
Key words : Narrow or small straps, shoulder indentations, Neural impingement

1. INTRODUCTION

In case of tight fitting bra, shoulder indentations and subsequent neural impingement is a problem. Old, worn out bras whose materials have lost the ability to give and sit snugly against the body are also common offenders. Bigger busted women commonly run in to caused by underlying tightly fitted straps.

2. CASE REPORT

A 40 years old female patient, presented in my private chamber with indentations in both shoulder with inability to abduct her shoulders above 90°. She was a Weight Lifter. Indentations were red coloured, painful and depressed. These were tender on touch. As she could not abduct her arm above 90°h she was unable to do the works which were normally required to abduct the shoulder above 90°.



2.1 Medical Examination

On examination, there were soreness and redness in skin over shoulder along with indentations. Her arm movements were restricted above 90°. Her both upper limb were slightly swollen with weakness of hands. There were tingling or pin and needles sensation in the arms, forearm & fingers,

While exterior skin may be affected, the tissue underneath have been affected. That means these marks may remain after the bra has been removed. On pressing downwards on the affected area helps to relieve symptoms. This may indicate that there is damage to the area & excess stress in nerves.

Blood test was normal. There are indentation marks in both shoulder in plain *X-ray. Proper fitting bras with wider strap was advised. Local hydrocortisone injection was given and shoulder muscle strengthening exercise was shown to the patient.

3. RESULTS AND DISCUSSION

Bra strap syndrome was first noticed in soldiers who carried heavy backpacks. These often causes problems of mobility, pain and even and even weakness in the arms. These were cause by excess pressure on the shoulders and leads to compression of the nerves on the shoulder.

Unfortunately, the same thing can happen in females who does not wear proper bras.

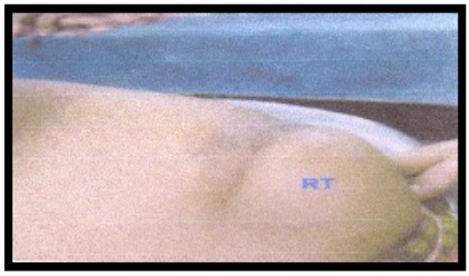
Specially the bras which have narrow or small straps or wornout bras causes increases pressure in the shoulder area. These can then affect the nerves near ribs.

his problem by dispersing pressure more widely across the shoulder. For those choosing to wear two bras, it is extremely important to avoid having the straps lie one over another.

Straps are only a secondary means of support. 82% of support comes from the bra band that runs around the rib cage. Hence there is no functional advantage to having bra

strap sitting too tightly.

Shoulder indentations and subsequent neural impingement is a problem that bigger busted women commonly suffers, caused by underlying tightly fitted straps. Those who use old, worn out bras, whose materials have lost the ability to sit snugly against the body have suffered most.



Functionally sports Bras are almost always made with wide, soft straps that are designed to eliminate this problem by dispersing pressure more widely across the shoulder. For those choosing tom wear two bras. It can extremly important to avoid having the straps lie one over another.

There are some easy technique to minimize pains in case of bra strap syndrome i.e.

(1) Local hot compress for 10-15 minutes.
(2) Avoiding carrying heavy items.
(3) Practicing good posture to make sure that none of the body's nerve are compressed.
(4) Switching to bras with wider shoulder strap or a strapless bra.
(5) There are some easy technique to Strengthening of supporting shoulder muscles through Yoga or other methods.

5. SUGGESTIONS FOR PREVENTION

1. Discarding old bras which have lost is elasticity.
2 .Loosing body weight
3. Proper posture during desk work for long time.
4. Use of bra strap cushion - It is soft foam pads creates a bumper between skin and straps.

6. SUMMARY

Bra strap syndrome is a condition of depressed marks or rawness in the shoulder of female sportswomen due to wearing of narrow or small straps bras. It causes various symptoms like swelling, weakness, and numbness of upper limbs. Proper fitting bras, wider strap bras, local hydrocortisone injection, exercises relieves symptoms.

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CONTRIBUTION OF YOGESHWAR DUTT IN INDIAN WRESTLING AT INTERNATIONAL LEVEL

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ABSTRACT

The objective of the study was to investigate the contributions and achievements of Indiam wrestler Mr. Yogeshwar Dutt an Olympian belong to Haryana state. Personal contact and interview method were used to collect the reliable data. Percentage analysis of collected data was done for won medals. Biography was explained through filled questionnaire by respondent. In most of the national and International competition of Wrestling, he won Gold medals followed by few silver and bronze medals. Different highest awards of India i.e. Arjun award, padam Shri Award and Rajeev Gandhi Khel Ratan Award were provided to him by government of India. He also acquired the fame of being the second Indian to achieve this award.

Keywords: Medals, National and International competition, Olympics, Achievements

1. INTRODUCTION

Yogeshwar Dutt was born in Bhainswal Kalan village in Sonipat (Haryana) on 2/11/1982. He was known by the name Manish in his native village. He was having an interest from childhood in the game of wrestling.. Balraj Pehlwan was the model for Yogeshwar Dutt.. His coach was Ramphal who trained in the game of wrestling. His mother and father were teachers.

1.1 Achievement in National Competitions

During 2003 Commonwealth games, he won gold medal in Wrestling. In 2004 Summer Olympics at Athens, he took part in men's freestyle 55 kg category.. Yogeshwar was took part in men's freestyle 55 kg category in 2004 Summer Olympic held in Athens and placed 18th positions. He lost his father on 3rd August 2006. He took part in 2008 Beijing Olympics in 60 kg freestyle wrestling and placed on 9th positions.

In 2006 Asian Games in Doha, he won bronze medal and in 2007 Commonwealth games in Canada, he won gold medal .

Just before Asian Games, he lost his fa-ther on 3rdAugust 2006 but still he was able to get a bronze medal in that event. As he won silver medal at Asian qualification tournament conducted in Kazakhstan, he was able to get a seat in the Olympics. Though he lost in the 2012 Olympics in the pre-quarterfinal round, he got a chance in the repechage rounds and was lucky enough to win the toss against his opponent. He knocked Ri Jong Myong of North Korea and won the bronze medal.

1.2 Achievement in International Competition

He won gold medals in world cadet championships , junior Asian championship, Common Wealth Championship, IInd Olympic Qualify tournament, Common Wealth Championship, Common Wealth Championship, Centenary Cup, Common Wealth games, and Senior Asian Champion in the 1999, 2002, 2002, 2002, 2004, 2005, 2005, 2007 and 2008 respectively in the different country of World. He won gold medals in Canada cup, France Cup, Ibrahim in Mustafa Cup, 19th Commonwealth games, and 20th Commonwealth games in the year 2009, 2009, 2009, 2010 and 2014 respectively. He won bronze medal in America Cup, Canada Prix and London Olympics in the year 2010, 2010 and 2012 respectively. He won silver medals in Canada Cup, Common wealth championship, Centenary cup and Common Wealth Championshp held in Canada, S. Africa and Canada in the year 2003, 2005, 2005 and 2007 respectively. He won Bronze Medals in Jan Nayak Chaudhry Devi Lal Cup Asian Games held in Delhi and Doha in the year 2003 and 2006 respectively.

1.3 Awards and Honour

Yogeshwar Dutt was appointed as DSP by the State Government vide memo No. 2/28/2008-IHGI dated 24.12.2008. Arjuna Award and Padma Shri Award were awarded to Yogeshwar Dutt by the Government of India in the year 2009 and 2013 respectively. Yogeshwar Dutt has also been awarded with Rajiv Gandhi Khel Ratna Award in 2011-12. D.Lit. (2012) was awarded by Aligarh University (Uttar Pradesh).He also acquired the fame of being the second Indian to achieve this award.

The objective of the study was to find out the performance of Indian wrestler Yogeshwar Dutt in National and International competitions.

2. METHODOLOGY

2.1 Data Collection

Primary data was collected by direct Interview and Self made questionnaire. Secondary data was collected through books, pamphlets, articles, newspapers and pictorial records and official records.

2.2 Research Design

To investigate the contribution and achievements of Yogeshwar Dutt towards the promotion of wrestling and sports in the country, historical biographical, techniques was used.

2.3 Statistical Techniques

To assess the collected data , percentage of medals secured in International and national level competition of Wrestling was calculated

3. RESULTS AND DISCUSSION

To analyze the data , percentage of medals was calculated at different levels of participation in Wrestling and data pertaining to this, has been presented in Table 1 to 3 and figure 1 to 3.

TABLE 1

PERCENTAGE INDICATION OF MEDALS IN NATIONAL WRESTLING COMPETITIONS

S. N0.	Medal	Frequency	Percentage
1	Gold Medal	07	63.64%
2	Silver Medal	02	18.18%
3	Bronze Medal	02	18.18%

Table 1 reveals that 63.64 % of gold medals were secured by Yogeshwar Dutt followed by 18.18 % and 18.18 % silver and bronze medals respectively in National level Wrestling competitions

TABLE 2

PERCENTAGE INDICATION OF MEDALS AND OTHER ACHIEVEMENTS IN INTERNATIONAL WRESTLING COMPETITIONS

S. N0.	Medal	Frequency	Percentage
1	Gold Medal	14	43.75%
2	Silver Medal	04	12.50%
3	Bronze Medal	06	18.75%
4.	Participation/Rank	08	25.00%

Table 2 indicates that 43.75 % of gold medals were secured by Yogeshwar Dutt followed by 12.50 %, and 18.75 % silver, bronze medals respectively in International level Wrestling competitions. In other International wrestling competitions (25%), he participated and secured good rank in the competitions.

TABLE 3

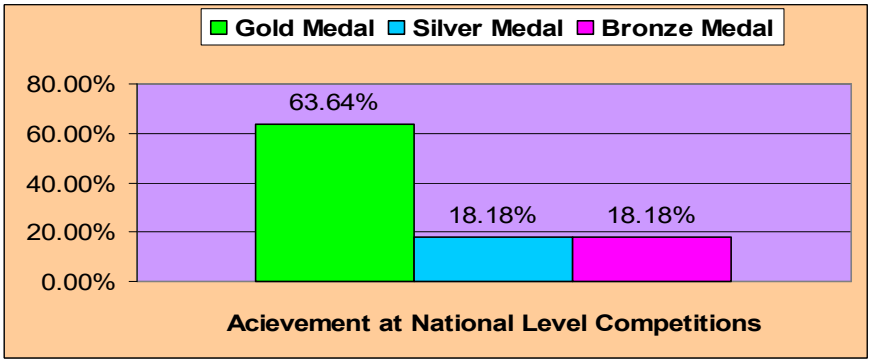
PERCENTAGE INDICATION OF MEDALS OTHER WRESTLING COMPETITIONS IN INDIA

S. N0.	Medal	Frequency	Percentage
1	Gold Medal	12	100%
2	Silver Medal	00	00%
3	Bronze Medal	00	00%

Table 3 indicates that 100 % of gold medals were secured by Yogeshwar Dutt in other national level Wrestling competitions which were organized in different corner of India

Yogeshwar Dutt represented India in 60kilogram freestyle wrestling in Olympics. and Men's freestyle 55 kg in Asian Games and won gold to bronze medals in different Internationl and National competitions of wrestling. He became the second Indian to achieve the feat in the country's wrestling history. He secured gold medals in most of the International and national competitions.

Figure 1



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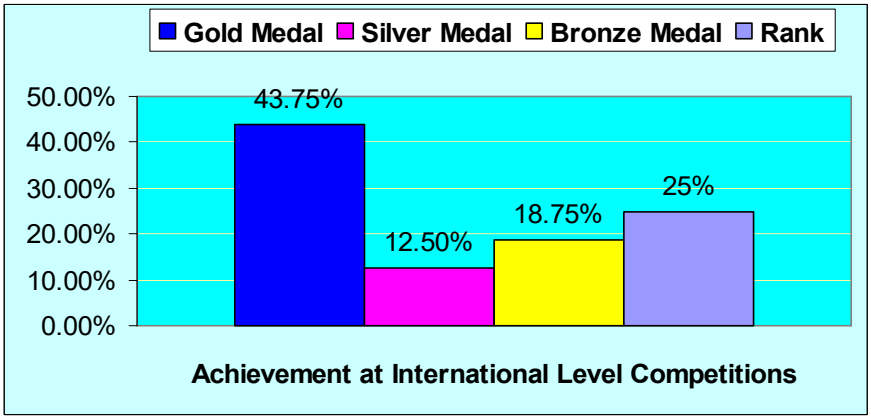
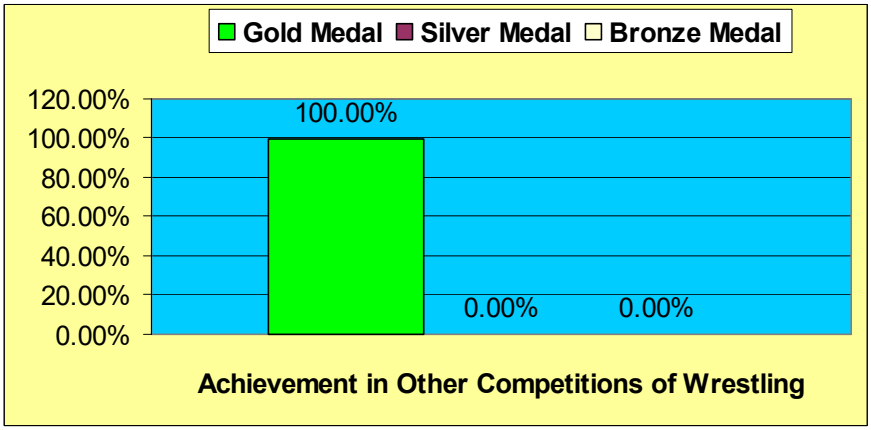


Figure 3



4. CONCLUSION

Yogeshwar was interested in wrestling from his childhood days. He was inspired by Balraj Pehlwan. Ramphal was the first coach of him. He won 33 gold medals, 06 silver medals and 08 Bronze medals in his playing life which was began from 1998. Arjuna

Award (2009), Padma Shri Award (2013) and Rajiv Gandhi Khel Ratna Award (2011-12) were awarded to Yogeshwar Dutt by the Government of India. D.Lit. (2012) was awarded by Aligarh University. Chief Minister of Haryana honored him by announcing a cash award of one Crore rupees. Presently, he is working as a DSP in state government.

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ATTITUDE OF UNDERGRADUATES TOWARDS PHYSICAL ACTIVITIES AND SPORTS WITH REFERENCE TO SEX AND TYPE OF INSTITUTION

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ABSTRACT

The study aims to identify levels of the students' attitudes towards Physical Activity and Sports of different institutions and also found the influence of sex and type of institution on attitude towards physical activities and sports. The subjects included 3165 degree college students of college year 2008-2009. A researcher self developed tool was administered and data gathered were statistically treated using the Statistical Package for Social Sciences (SPSS Version 20 and MS Excel). Furthermore, t-Test, One-Way ANOVA was used in finding out difference in attitude towards Physical Activities and Sports in relation to their sex and type of institution. It was concluded that there was significant difference in the physical activities & sports between male and female undergraduates of government and private unaided institutions except private unaided institution. Majority of the male undergraduates had higher attitude towards physical activities and sports when compared with female undergraduates. Further it was also found that there was significant difference in the attitude of undergraduates towards physical activities and physical activities & sports among undergraduates of different type of institutions. The students from government and private aided institutions had higher level of attitude towards physical activities & sports when compared with students from private unaided institutions.

Keywords: Attitude, Physical Activities, Sports, Undergraduates

1. INTRODUCTION

Physical fitness is considered as an important part of the human life cycle. The role of physical activity in improving physical fitness cannot be underestimated. Right from the early developmental phases such as childhood up to the very end of life, some forms of physical activities and sports is always considered as an important part of human development. Sports serve as outstanding exercise, which has an ample of health benefits and also reduces blood sugar level and reduces the risk of blood cholesterol. Playing sports reduces the chances of hypertension and stress related disorders and increase adjustment levels. Research has revealed that people who play sports regularly can deal with stress and strain in life in a better manner. Depression, anxiety and other psychological disorders are less probable in people who indulge in sports activities.

The aim of education is to modify the behaviour of a child according to the needs and expectancy of the society. Behaviour is composed of many attributes. One of these important attribute is attitude. One's behaviour, to a great extent, depends upon one's attitude towards the things i.e. idea, person or object in his environment. The personality and development of a child is influence by the nature of his attitudes. Therefore during learning stage, habits, interests and other psychophysical dispositions are all affected by his/her attitudes.

The attitudes are never taught, they are caught through direct or indirect experiences. Therefore, we should always try to plan and build such healthy and desirable environment around our youths so that they can take up healthy and desirable attitudes towards persons, ojects, ideas etc. automatically as a result of their interactions with such environment. Brumbach and Cross (1965) undertaken study to determine the relationship of several factors with attitude toward physical education and concluded that those who were, or had been, involved in athletics, had significantly more positive attitude toward physical education than those who had not. School physical education programs have been recognized as the most logical and practical environments to promote physical activity (Morgan, Pangrazi and Beighle (2003). physical activity levels of students during physical education classes have declined significantly since 1991 (CDCP, 2004).

In an effort to explain and to predict behavior, social psychologists have explored underlying attitudes. Similarly, sports scientists have investigated how attitudes influence physical activity and exercise behaviors. Attitudes are defined as individual value dispositions – in terms of approval or disapproval toward a social object (Eagly and Chaiken, 1998).

Research indicates that in comparison to healthy-weight range adolescents, obese adolescents may have different attitudes towards physical activity and exercise. The purpose of the study is to find out the attitude of General and selected Professional male and female Undergraduates towards Physical Activities and Sports. The findings of the study may reveal the types of attitude of undergraduate students towards physical activities and sports in collegiate educational system. The result of the study may also reveal the Attitude of male and female undergraduate students towards physical activities and sports.

The behaviors and traits of today's children, along with their genetics, are determinants of their growth and development; their physical, mental, and psychosocial health; and their physical, cognitive, and academic performance. Technological advances of modern society have contributed to a sedentary lifestyle. Behaviorally, most children fail to engage in vigorous or moderate-intensity physical activity and lack of participation in physical activities and sports has contributed to a greater prevalence of pediatric fatness, a decrease in fitness and a more risk for diseases. Regular physical activities will promotes growth and development and has more benefits for physical, mental, and psychosocial health that undoubtedly contribute to learning and maintain wellbeing and healthy lifestyles. It is essential to provide awareness and develop attitudes of youngsters towards physical activities and sports.

'"Attitudes develop at an early age and can be changed based on situational contexts such as a particular teacher or the class environment" (Ajzen, 2001). In other words, a student's attitude toward a particular subject in school and college can be shaped by his/her perception of instructional setting or teacher and person. Attitudes toward physical activity and sports perceived by the students are important to understand as they can influence an individual's decision to begin or to continue participation in an activity (Silverman and Subramaniam, 1999). Hence, there is need to study the students attitude toward their physical activities and sports at college levels. This may be viewed as an attempt to conflict the sedentary lifestyles diseasing many of the youth by providing knowledge and skills that will influence their decisions to pursue an active lifestyle and balance their wellbeing.

The present study is to know the levels of attitude of undergraduates towards physical activities and sports at college level. On the basis of the attitude of the subjects awareness of physical activities and benefits of sports participation can be created among the undergraduate students. The results of the study can help physical education directors to include different varieties of physical activities and sports programmes at college level. The study would give proper guidelines in the formulation of physical activities suitable for undergraduate male and female according to their needs.

The attitude was measured through survey method, which is considered as the one of the major limitation. No special motivational technique was used to obtain correct response other than the covering letter in the form of requisition to the subject for the co-operation and correct response. The self prepared scale developed by the researcher, to measure the attitude which is considered as another limitation.

The purpose of the study was to find out the level of attitude of undergraduates towards physical activities and sports of government, private aided and unaided institutions and also find out the differences in the attitude towards physical activities and sports between male and female undergraduates of different institutions and also find out the differences in the attitude towards physical activities and sports among undergraduates of different institutions.

It was hypothesized that there is no significant difference in the Attitude towards Physical Activities & Sports between male and female undergraduates of government, private aided and private unaided institutions. It was also hypothesized that there is no significant difference in the Attitude towards Physical Activities & Sports among undergraduates of different type of institutions.

2. METHODOLOGY

2.1 Selection of Subject

The population comprised of all general and professional undergraduates of different Universities of Karnataka was selected as subjects. The sample comprised 3164 undergraduates (1645 general colleges and 1519 professional colleges out of which 1585 male and 1579 female undergraduates) from six different universities namely Bangalore University, Tumkur University, University of Mysore, Mangalore University, Karnataka University and Gulbarga University selected by using simple random sampling technique.

2.2 Instrument

To collect the data the researcher selected self prepared Attitude Scale towards Physical Activities and Sports was used to collect the data. This scale contains 40 items out of which 25 statements related to attitude towards physical activities and 15 statements related to attitude towards sports. This scale is in the form of Likert scale.

2.3 Statistical Analysis

The collected data was analyzed by using appropriate statistical techniques namely percentages, mean, standard deviation, independent 't' test and One-way ANOVA along with Scheffe's Post Hoc Analysis.

3. RESULTS

To find out the level of attitude of undergraduates towards physical activities and sports of government, private aided and unaided institutions, differences in the attitude towards physical activities and sports between male and female undergraduates of different institutions and differences in the attitude towards physical activities and sports among undergraduates of different institutions- percentages, mean, standard deviation, independent 't' test and One-way ANOVA along with Scheffe's Post Hoc Analysis were applied and data pertaining to this, has been presented in Table 1 to 4 and figure in 1 & 2.

TABLE 1

LEVELS OF ATTITUDES OF UNDERGRADUATES TOWARDS PHYSICAL ACTIVITY AND SPORTS FROM DIFFERENT TYPE OF INSTITUTION

Attitude towards Physical Activity and Sports	Type of Institution			Total
	Government	Private Aided	Private Unaided	
Unfavourable	48 (1.5%)	72 (2.3%)	32 (1.0%)	152 (4.8%)
Moderate	1027 (32.5%)	1208 (32.2%)	530 (16.8%)	2765 (87.4%)
Favourable	96 (3.0%)	94 (3.0%)	57 (1.8%)	247 (7.8%)
Total	1171 (37.0%)	1374 (43.4%)	619 (19.6%)	3164 (100.0)

The table-1 shows students having different levels of attitude towards physical activities and sports of varied type of institutions. The table proved that 7.8% undergraduates expressed favourable attitudes out of which 3.0% each from government and private aided and 1.8% private unaided institutions. Like wise 87.4% undergraduates expressed moderate attitudes out of which 32.5% from government, 32.2% from private aided and 16.8% from private unaided institutions and remaining 4.8% undergraduates

expressed unfavourable attitudes out of which 1.5% from government, 2.3% from private aided institutions and 1.0% from private unaided institutions

TABLE 2

NUMBER, MEAN, STANDARD DEVIATION, OBTAINED 'T' VALUES AND SIG. LEVELS OF ATTITUDE TOWARDS PHYSICAL ACTIVITIES & SPORTS BETWEEN MALE AND FEMALE UNDERGRADUATES STUDYING IN DIFFERENT TYPE OF INSTITUTIONS

Variable and Group			No.	Mean	Standard Deviation	Obtained 't' value	Sig. Level
Attitude towards Physical Activities & Sports	Government	Male	395	82.503	16.789	3.45	**
		Female	224	78.468	12.136		
	Private Aided	Male	532	83.129	15.437	1.68	NS
		Female	639	81.679	13.789		
	Private Unaided	Male	652	82.920	15.979	5.49	**
		Female	722	78.578	12.985		

** Significant at 0.05 level (Table Value 2.58; df=3162)

From the above table, it can be seen that, the obtained 't' values 4.084, 7.370 and 5.878 are greater than the table value 2.58 at 0.01 level of significance. Hence the stated null hypothesis is rejected and alternative hypotheses have been formulated that there is significant difference in the Attitude towards Physical Activities, Sports and Total Attitudes between male and female undergraduate students. It also concludes that male undergraduates had better Attitudes than female undergraduates.

TABLE 3

NUMBER, MEAN, STANDARD DEVIATION, OBTAINED 'T' VALUES AND SIG. LEVEL OF ATTITUDE TOWARDS PHYSICAL ACTIVITIES & SPORTS BETWEEN GENERAL COLLEGE AND PROFESSIONAL MALE AND FEMALE UNDERGRADUATES.

Variable	Source of Variance	Sum of Square	df	Mean Square	F Value	Sig. Level
Attitude towards Physical Activities	Between Groups	1787.188	2	893.594	7.65	**
	Within Groups	369134.01	3161	116.778		
	Total	370921.09	3163			
Attitude towards Sports	Between Groups	58.192	2	29.096		NS
	Within Groups	105882.05	3161	33.496	0.87	
	Total	105940.24	3163			
Attitude towards Physical Activities and Sports	Between Groups	1896.107	2	948.054		*
	Within Groups	688974.860	3161	217.961	4.35	
	Total	690870.960	3163			

NSNot Significant; *Significant at 0.05 level; **Significant at 0.01 level.

The above table-3 inferred that the obtained 'F' value of 0.87 is less than the table value 3.84 at 0.05 level of significance. Hence the null hypothesis is accepted that there is no significant difference in the Attitude towards Sports of undergraduates belonging to different type of college institution.

It can be seen that, the obtained 'F values of 7.65 and 4.35 are greater the table value 6.64 at 0.01 level and 3.84 at 0.05 level of significance. Therefore, the stated hypothesis is rejected and an alternate hypothesis has been formulated that there is significant difference in the Attitude towards Physical Activities and Attitude towards Physical Activities & Sports of undergraduates belonging to different type of college institution. As

'F' value was found significant, further Post-Hoc test was applied to know the paired mean differences among government, private aided and private unaided undergraduates.

TABLE 4

SCHEFFE'S POST-HOC ANALYSIS ON ATTITUDE TOWARDS PHYSICAL ACTIVITIES AND SPORTS OF UNDERGRADUATES STUDYING IN DIFFERENT TYPE OF INSTITUTIONS.

Variable	Type of Institution			Mean Difference	Critical Difference
	Government	Private Aided	Private Unaided		
Attitude towards Physical Activities	54.833	55.777		0.944	1.488
		55.777	54.096	1.681*	1.191
	54.833		54.096	0.737	1.450
Attitude towards Physical Activities and Sports	81.043	82.338		1.295	2.033
		82.338	80.639	1.699*	1.627
	81.043		80.639	0.404	1.980

*Significant at 0.05 level.

From the table-4 it was observed that there is no significant difference in the Attitude towards Physical Activities between undergraduates studying in government & private aided and government & private unaided institutions. It is further concludes that there is a significant difference in the Attitude towards Physical Activities between private aided & private unaided institutions. The undergraduates from private aided (M=55.777) and government institutions (M=54.833) had favour attitudes towards physical activities when compared with private unaided institutions (M=54.096).

The table-4 further reveals that there is no significant difference in the Attitude towards Physical Activities & Sports between undergraduates studying in government & private aided and government & private unaided institutions. It is further concludes that there is a significant difference in the Attitude towards Physical Activities & Sports between private aided & private unaided institutions. The undergraduates from private aided (M=82.338) and government institutions (M=81.043) had favour attitudes towards physical activities & sports when compared with private unaided institutions (M=80.639).

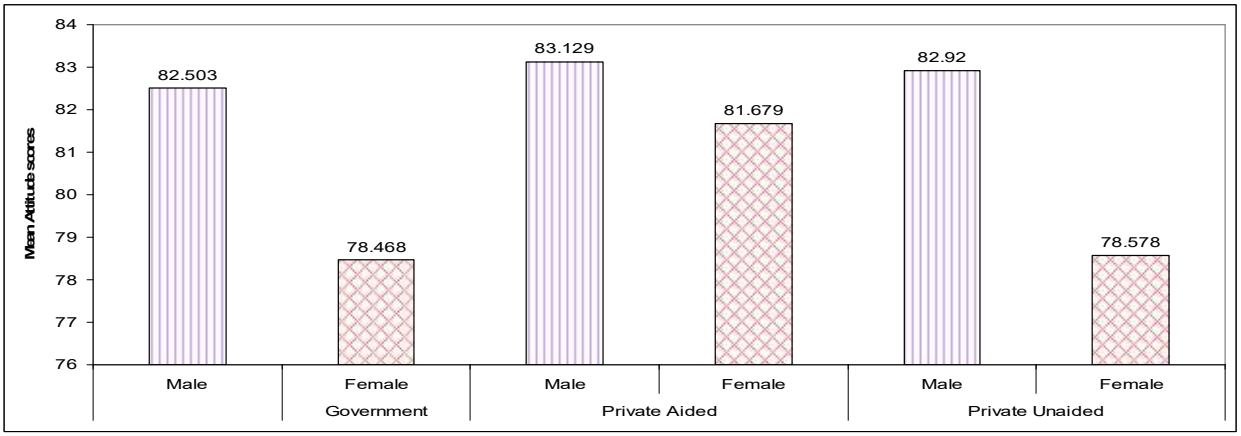

Fig.1: Comparison of mean attitude scores towards physical activities & Sports between male and female undergraduates of different type of institutions.

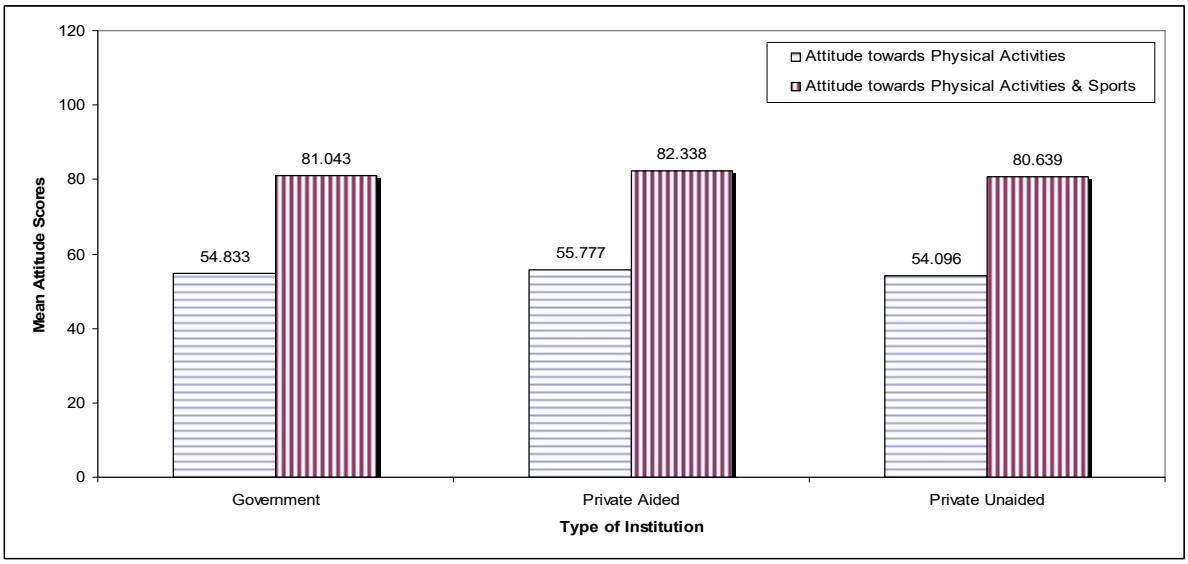

Fig.2: Comparison of mean attitude scores towards physical activities and attitude towards physical activities & sports among undergraduates studying in different type of institutions.

4. DISCUSSION

The results proved that students 87.4% of the students moderate average towards physical activities and sports and only 4.8% of the students unfavourable and 7.8% of the students had favourable attitude towards physical activities and sports. The result from 't' test analysis shows that there was significant different in the attitude towards physical activities and sports between male and female undergraduates of government and private unaided institutions and no difference exists in the attitude towards physical activities and sports between male and female undergraduates of private aided institution. The table also proved that male students had more attitudes when compared female students. It is necessary to provide infrastructure facilities and provide conducive environment and encourage from parents and teachers for female students to participate in physical activities and sports and conduct workshop on importance of physical activities and sports and its importance especially for women.

From the F test analysis it was found that there was significant difference in the attitude towards physical activities and attitude towards physical activities & Sports among undergraduates of different type of institutions and no significant difference exists in the attitude towards sports. Further it was found that students from private aided and government institutions had better attitude towards physical activities and physical activities & sports when compared with students from private unaided institutions.

The private aided government students had better attitude towards Physical activities & sports than unaided institutions. This may be due to lack of infrastructure like playground, indoor and outdoor games facilities. For health consciousness, the private unaided colleges should conduct workshops/seminars for students to improve their attitude towards physical activities and sports. Parents should know the importance of physical activities in order to encourage their children in participation of physical activities and sports and create good atmosphere especially for women.

5. CONCLUSION

From the study it was found that there was significant difference in the physical activities & sports between male and female undergraduates of government and private unaided institutions except private unaided institution. It was concluded that majority of the male undergraduates had higher attitude towards physical activities and sports when compared with female undergraduates. Further it was also found that there was significant difference in the attitude of undergraduates towards physical activities and physical activities & sports among undergraduates of different type of institutions. The students from government and private aided institutions had higher level of attitude towards physical activities & sports when compared with students from private unaided institutions.

6. SUGGESTION

Based on the findings some of suggestions are made by the researcher

1. Degree College Institutions should improve the sports facilities and infrastructure for the betterment of sports.
2. Parents, Teachers, College and Government Authorities should encourage sports and physical activities for both male and female students.
3. Sports seminars and workshops should be conducted to share the ideas of physical activities and sports at college level and also conduct debates on the said issue between male and female students. Moreover, guidance from professionals would help them in implementing the physical activities and sports more effectively and efficiently.

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AN INVESTIGATION OF ANTHROPOMETRIC MEASUREMENTS AMONG ELITE ATHLETES

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ABSTRACT

Introduction: The main objective of this study was to compare the selected anthropometric measurements between basketball and handball elite athletes of Sri Lanka. Aim of the study: To compare the selected anthropometric measurements between basketball and handball elite male athletes of Sri Lanka. Methods: The sample consists of forty athletes N=40 (Age ranged between 18-32 years). Out of which twenty N=20 basketball elite male athletes and other twenty N=20 handball elite male. They were the members of the Sri Lankan national team camp during preparation for their international competition in Colombo 2017. Anthropometric measurements namely; standing height, body weight, arm length, upper arm girth, forearm girth, thigh girth, calf girth, chest girth, and leg length were selected for this study. Result and Discussion: To determine the significant differences of anthropometric measurements, the data was analyzed by applying independent t - test in order to determine the anthropometric differences between the basketball and handball male athletes, 0.05 level of confidence was fixed to test the significance. Conclusions: The results showed that there was significant difference in the selected nine anthropometric measurements between basketball and handball athletes, and not found significant difference in one measurement.

Keywords: Anthropometric measurements, Team games, Elite athletes, Basketball, Handball.

1. INTRODUCTION

This research study has been designed considering the limited quantity of articles that focus on the anthropometric measurements of basketball & handball athletes and, more purposely, the figures discipline. The purpose of this research study was to establish the differences between the anthropometric measurements of elite basketball and handball male athletes.

It is obviously evident that special anthropometric measurements assume whether a player is physically fit and set for challenging in the top levels in a particular sport field (Claessens, et al. 1999; Bourgois, et al. 2000; Ackland, et al. 2003; Slater et al. 2005).

Anthropometric deals with measurement of the dimensions, mass, and distribution of the human body. It estimates the length, masses, location of the centre of mass, and moment of inertia of the human body, that are used in the study of human motion. Anthropometrics was found by a French savant called Alphones Bertillon who 1883 gave the name Anthropometrics to a system that he designed which involved him taking certain measurements and when they were recorded he found out that every single individual could be distinguished from other people by these measurements (Anthropometrics: An introduction, 2017).

It is the most latest and appropriate research problem in the field of team games training has been the founding of reference anthropometric measurements for every single game. Even though it is generally accepted that team games training desires a multifaceted approach to realize every one of the achievement factors affecting competition, moreover fine identified that the improvement of fitness levels is important to a best result. Every discipline seems to present exact anthropometric measurements owing to precise actions and necessities for every position of the game. Though, a few general characteristics can be defined while comparing various games. The exact meaning of reference profile in games is not merely vital for suitable training of elite athletes' it is also necessary to carry out capable talent selection procedure.

Although the anthropometric profiles of Olympic athletes, as a group, have already been published by Carter (1982), there is still a need to define "specific reference data for each sport" given that each discipline has its own characteristics (Norton & Olds, 2001).

The physical activities, movements and competition have always been an essential part of human actions (Diafas, V. et al. (2011). Human beings have been penetrating for the relations between physical characteristics and their performance and abilities to recognize their physical features and individuality and limitations and benefits such traits may form in their performance. Hence, methods and apparatus were required to attain further precise and suitable facts on physical features. Such demand progressively resulted in a systematic origin, named anthropometry. Anthropometry refers to measurements used for quantitatively accepting human physical differences (Misigoj, M., & Heimer, S. 1992).

The sports science experts consider that though, with right selection of persons and utilization of accurate values of carry out and creating of right atmosphere can be flourish in rising of effectiveness and performance of athletes, but above all, paying concentration to the physical composition and anthropometrical measurements of persons is the case that can differentiate them from each one (Dashti K.A., & Zafari, A. 2014). The measurement and purpose of the anthropometric profile is vital to a winning achievement in a game (Shephard, R.J. 1999).

The objectives of this study were to compare the anthropometric measurements of elite male athletes of basketball and handball games.

2. METHODOLOGY

2.1 Selection of Sample

A total of forty (N=40) male elite athletes. Twenty (N=20) of basketball male elite athletes and other twenty (N=20) of handball male elite athletes who were purposively selected to participated in this study. Their age ranged between 18 to 32 years.

2.2 Selection of test item

Anthropometric measurements such as standing height, body weight, arm length, upper arm girth, forearm girth, thigh girth, calf girth, chest girth, and leg length were used to assessing the anthropometric differences.

2.3 Data collection:

Data was collected during training camp of basketball and handball male elite athletes for international competition which training was held in Colombo 2017.

2.4 Statistical analysis:

Independent t- test was used to determine the difference between elite male basketball and handball athletes. The proposed hypothesis was tested at 0.05 level of confidence. Beside this mean and standard deviation was also calculated, along with descriptive statistics by using SPSS 22 version.

3. RESULTS AND DISCUSSIONS

Anthropometric measurements may perhaps possibly be used to identify potentially successful players for a specific discipline. The present research study aimed to assess differences in anthropometric measurements of elite two discipline basketball as compared to handball. Anthropometric data were very valuable tools in the assessment of athletes. However, having reviewed global scientific publications, It is for this reason that the discussion was based on a comparison with artistic ice skaters, focusing on the variables in which a comparison was possible, given the similarities between both disciplines (Barkoff & Heiby, 2004). The data collected was treated with the statistical technique 't' and results were presented in the following tables.

TABLE 1

MEAN, STANDARD DEVIATION, AND'T' VALUE OF STANDING HEIGHT OF BASKETBALL AND HANDBALL ATHLETES.

Participants	Sample Size	Mean	Std. Deviation	t- value
Basketball	20	1.84	0.10	2.53*
Handball	20	1.78	0.07	

Degree of freedom (38) = 2.02

*Significant at 0.05 level

The above table shows the mean value, standard deviation, and t value of standing height between basketball and handball elite male athletes. As the t value indicated in the table showed there was a significant difference in height between basketball and handball athletes. Basketball athletes were found taller than the football male elite athletes.

TABLE 2

MEAN, STANDARD DEVIATION, AND'T' VALUE OF BODY WEIGHT OF BASKETBALL AND HANDBALL ATHLETES.

Participants	Sample Size	Mean	Std. Deviation	t- value
Basketball	20	72.1	9.08	0.61
Handball	20	70.46	7.81	

Degree of freedom (38) = 2.02

*Significant at 0.05 level

The above table shows the mean value, standard deviation, and t value of weight between basketball and handball elite male athletes. As the t value indicated in the table showed there was no significant difference between in weight of basketball and handball athletes. In this variable basketball athletes was found no significant than the handball elite male athletes. But, when mean values were compared of basketball athletes' weight heavier than handball elite male athletes.

TABLE 3

SHOWS MEAN, STANDARD DEVIATION, AND 'T' VALUE OF ARM LENGTH OF BASKETBALL AND HANDBALL ATHLETES.

Participants	Sample Size	Mean	Std. Deviation	t- value
Basketball	20	83.7	3.89	**0.97**
Handball	20	82.55	3.56	

Degree of freedom (38) = 2.02

*Significant at 0.05 level

The above table shows the mean value, standard deviation, and t value of arm length between basketball and handball elite male athletes. As the t value indicated in the table showed there was no significant difference between in arm length of basketball and handball athletes. In this variable basketball athletes was found no significant than the handball elite male athletes. But, when mean values were compared of basketball athletes' arm length were lengthier than handball elite male athletes.

TABLE 4

SHOWS MEAN, STANDARD DEVIATION, AND'T' VALUE OF UPPER ARM GIRTH OF BASKETBALL AND HANDBALL ATHLETES.

Participants	Sample Size	Mean	Std. Deviation	t- value
Basketball	20	28	2.81	2.04*
Handball	20	29.58	2.06	

Degree of freedom (38) = 2.02

*Significant at 0.05 level

The above table shows the mean value, standard deviation, and t value of upper arm girth between basketball and handball elite male athletes. As the t value indicated in the table showed there was a significant difference in height between basketball and handball athletes. Handball athletes were found upper arm girthed than the basketball male elite athletes.

TABLE 5

SHOWS MEAN, STANDARD DEVIATION, AND'T' VALUE OF FOREARM GIRTH OF BASKETBALL AND HANDBALL ATHLETES.

Participants	Sample Size	Mean	Std. Deviation	t- value
Basketball	20	24.6	1.54	
Handball	20	26.6	1.50	4.17*

Degree of freedom (38) = 2.02

*Significant at 0.05 level

The above table shows the mean value, standard deviation, and t value of forearm girth between basketball and handball elite male athletes. As the t value indicated in the table showed there was a significant difference in height between basketball and handball athletes. Handball athletes were found forearm girthed than the basketball male elite athletes.

TABLE 6

MEAN, STANDARD DEVIATION, AND'T' VALUE OF THIGH GIRTH OF BASKETBALL AND HANDBALL ATHLETES.

Participants	Sample Size	Mean	Std. Deviation	t- value
Basketball	20	49.45	3.86	
Handball	20	50.75	3.54	1.11

Degree of freedom (38) = 2.02

*Significant at 0.05 level

The above table shows the mean value, standard deviation, and t value of thigh girth between basketball and handball elite male athletes. As the t value indicated in the table showed there was no significant difference between in thigh girth of basketball and handball athletes. In this variable basketball athletes was found no significant than the handball elite male athletes. But, when mean values were compared of handball athletes' thigh girthed than basketball elite male athletes.

TABLE 7

MEAN, STANDARD DEVIATION, AND'T' VALUE OF CALF GIRTH OF BASKETBALL AND HANDBALL ATHLETES.

Participants	Sample Size	Mean	Std. Deviation	t- value
Basketball	20	32.75	3.54	
Handball	20	35.3	2.48	2.64*

Degree of freedom (38) = 2.02 *Significant at 0.05 level

The above table shows the mean value, standard deviation, and t value of calf girth between basketball and handball elite male athletes. As the t value indicated in the table showed there was a significant difference in height between basketball and handball athletes. Handball athletes were found calf girthed than the basketball male elite athletes.

TABLE 8

MEAN, STANDARD DEVIATION, AND'T' VALUE OF CHEST GIRTH OF BASKETBALL AND HANDBALL ATHLETES.

Participants	Sample Size	Mean	Std. Deviation	t- value
Basketball	20	87.4	4.30	
Handball	20	88.75	5.26	0.89

Degree of freedom (38) = 2.02 *Significant at 0.05 level

The above table shows the mean value, standard deviation, and t value of chest girth between basketball and handball elite male athletes. As the t value indicated in the table showed there was no significant difference between in chest girth of basketball and handball athletes. In this variable basketball athletes was found no significant than the handball elite male athletes. But, when mean values were compared of handball athletes' chest girthed than basketball elite male athletes.

TABLE 9

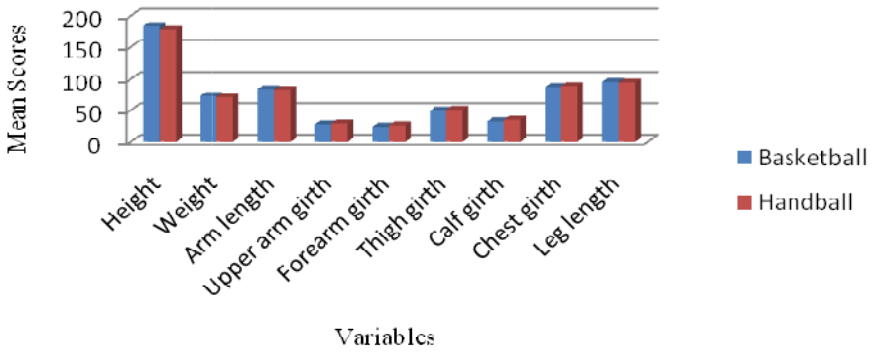
MEAN, STANDARD DEVIATION, AND'T' VALUE OF LEG LENGTH OF BASKETBALL AND HANDBALL ATHLETES.

Participants	Sample Size	Mean	Std. Deviation	t- value
Basketball	20	95.4	5.34	
Handball	20	94.58	4.77	0.52

Degree of freedom (38) = 2.02 *Significant at 0.05 level

The above table shows the mean value, standard deviation, and t value of leg length between basketball and handball elite male athletes. As the t value indicated in the table showed there was no significant difference between in leg length of basketball and handball athletes. In this variable basketball athletes was found no significant than the handball elite male athletes. But, when mean values were compared of handball athletes' leg lengthier than basketball elite male athletes.

Figure 1: Graphical illustration of findings mean scores of basketball and handball teams in different assessments



4. CONCLUSIONS

The result of the study showed that the anthropometric measurements of elite athletes of football and volleyball games varied among them. Results showed that the significant differences were found in standing height, upper arm girth, forearm girth, and calf girth between basketball and handball male elite athletes. But, there was not found significant difference found in body weight, arm length, thigh girth, chest girth, and leg length between basketball and handball athletes. According to the study, games have different demands on anthropometric attributes, which were specific to each elite athlete of basketball and handball games.

Therefore, for this variety of results, instructors, teachers, and coaches have to design work out programs according to the games condition and every athletes in the field. The specific anthropometric measurements differ, mainly in elite male basketball athletes. These results recommend that common anthropometric measurements must be included in any testing of the selection of games discipline athletes. However, the selection must not be limited to anthropometric data, especially in younger ages, where maturation must be considered.

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EFFECT OF STRENGTH TRAINING ON ARM STRENGTH OF WOMEN CRICKET PLAYERS

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ABSTRACT

The purpose of the present study was to find out the effect of strength training on arm strength of women cricket players. To achieve the purpose twenty female cricket players (n=20) were randomly selected as subjects and the age were ranged between 20 and 22 years. The selected subjects were randomly assigned into two equal groups such as training group (TG) and control group (CG) for the strengths of ten (n=10) each. Experimental training group underwent respective strength training program for six weeks for three days per week and a session on each day. The control group did not involve in any special training apart from their regular activities. The criterion variable arm strength was measured by push-ups. Analysis of covariance (ANCOVA) was used to analyse the collected data. The results revealed that the strength training was made significant improvement($p \leq 0.05$) in arm strength of the selected subjects. The level of confidence was fixed at 0.05 in all cases.

Keywords: Strength training; Arm strength; Cricket players

1. INTRODUCTION

As a leading global sport, cricket will captivate and inspire people of every age, gender, background and ability while building bridges between continents, countries and communities (Frederick Lillywhite,1865).

Women's cricket is a global game that has had an international governing body since 1958.These are an increasing number of global competition and at present the women's game is represented in the same national and global organisation as men's cricket (Isabelle Duncan 2013). International tournaments and bilateral competitions are increasing and international cricket is now a year- around operation. This suggests that women cricketers are a visible, albeit marginal past of the global game women are part of the nation, but their sporting success does not necessarily evoke feelings of national identity in the same ways that men's sports does. The women's game is largely dependent on the men's game for its development and support especially for financial support. Women's cricket has not received much academic discussion although the history and development of men's cricket as a global sport. The emergence and development of women's cricket as a global game therefore adapts a sociological approach to explain how and why cricket for women emerged and developed, and significantly how power relations between men's and women's cricket influence the social habitués of women who play cricket **(**Velija & Philippa 2015).

Strength training is the ability of the muscles to repeat identical movement or pressures as to maintain a certain degree of tension over a period of time. Strength training as the capacity of the whole organism is to with stand fatigue under the long lasting exhaustion of strength **(**Singer, R., N. 1975). Consequently it is characterized by a relatively high ability to express strength together with a faculty of preserve .Strength training exercises is not usually thought as on end in itself, but as means to an end. Strength training may be isometric, isokinetic contraction. Strength training is the ability of the muscle to produce a maximum amount of force. It is measured by the ability to perform one repetition of an exercise at maximum resistance. An example of maximum strength would be greatest amount of weight one can lift in the bench press exercise **(**Clayne R Jensen 1979). Strength training has major significance in many sports and sport skills. It is a significant factor in one's ability to put the shot, throw the javelin, create a high velocity tennis serve, throw a fast ball, and many other sport skills. Arm strength is defined as the maximum velocity of any throw made by a fielder. Everyone knows that the triceps are the largest of the arm muscles. The triceps make up around 50-55% of the total size of the three upper arm muscles, with the reminder dividing up across the biceps and the bronchioles. Arm strength can increase by continuously doing push-ups and pull-ups. Weight training is doing exercise, using resistance (normally weights) to build muscle strength and endurance. In weight training one can use weights like dumbbells, Bar Bells, Pulley Machines or simply one's own body weight as resistance (James, 2011) .

The purpose of the present study was to find out the effect of strength training on arm strength of women cricket players.

2. MATERIALS AND METHODS

2.1 Selection of Subjects

To achieve the purpose twenty women cricket players (n=20) were randomly selected as subjects from the women's senior cricket academy Thiruvananthapuram,

Kerala. Ten women cricket players were selected as training group A and ten women cricket players were selected as control group B. The players who participated intercollegiate competitions were selected as subjects. The age was ranged between 20 and 22 years.

2.2 Selection of Variables

The criterion variable selected for the study was arm strength, and it was measured by push-ups.

2.3 Training Protocol

To The selected subjects were randomly assigned into two equal groups such as training group (TG) and control group (CG) for the strengths of ten (n=10) each. Experimental training group underwent respective strength training program for six weeks for three days per week and a session on each day. The control group did not involve in any special training apart from their regular activities. The criterion variable arm strength was measured by push-ups. All the subjects were present for more than 90% of the total training session. The strength training is increased by doing chest, shoulders, triceps, biceps, and abs.

2.4 Statistical Analysis

The collected data was statistically examined by Mean and Standard deviation and Analysis of Covariance (ANCOVA). The confidence level was fixed at 0.05 levels, which is appropriate to the present study.

3. RESULTS

Mean and Standard deviation were calculated for arm strength of each training group and the data were analyzed by using analysis of covariance (ANCOVA). and data pertaining to this, has been presented in Table 1

TABLE 1
ANALYSIS OF COVARIANCE ON ARM STRENGTH BETWEEN THE TRAINING GROUP AND THE CONTROL GROUP.

Test		Training Group	Control Group	SOV	SS	df	MS	F
Pre test	Mean	4.9	5.3	B	0.8	1	0.8	1.1
	SD	0.73	0.94	W	13	18	0.72	
Post test	Mean	8.3	6	B	26.45	1	26.45	47.13*
	SD	0.63	0.81	W	10.1	18	0.56	
Adjusted post test	Mean	4.29	5.96	B	3.5	1	3.5	5.93*
				W	10.2	17	0.6	

*Significant at 0.05 level

F.05 (1, 18)=4.41, F.05 (1, 17) =4.45

The analysis of covariance on arm strength among experimental and control group were described in table no 1. The mean value of arm strength of training and control groups were 4.90 and 5.30. The obtained 'F' value of 1.10 was lesser than the table value of4.41, there was insignificant among the groups in pre test result of arm strength. The post test means of the groups were 8.30 and 6.0 respectively, and the obtained 'F' value of 47.13 was greater than the table value, and there was a significant difference in arm strength between the training and control groups in arm strength among the male college cricket

players. The obtained adjusted post test F value also greater the table value of 4.45 for df 1 and 17 required for significant at 0.05 level.

4. DISCUSSION

The result of the present study pointed out that there was a significant difference in arm strength due to strength training. The current study also utilized 12 weeks programme duration with three sessions and found that arm strength increases due to strength training. Jensen & Fisher pointed out that that the strength training improves arm strength of the cricket players. Young conducted the study that strength training increases the muscle power of the athletes. From the results of the present study and literature, it is concluded that criterion variable arm strength was significantly improved due to strength training.

5. CONCLUSION

The result of the study revealed that the training group has significant improvement in arm strength among women cricket players after the strength training protocol. It was also concluded that the strength training is one of the best training methods for improving the arm strength as well as the physical fitness of women cricket players.

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COMPARTISION OF OCCUPATIONAL STRESSBETWEEN MALE AND FEMALE PHYSICAL EDUCATION TEACHERS OF MADHYA PRADESH

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ABSTRACT

The purpose of the study was to compare the level of job stress between male and female Physical Education teachers working in higher secondary schools of Madhya Pradesh. For the purpose of the study, 288 physical education teachers (M= 231, Female =57) working in various government, private aided, and private unaided schools were selected in Madhya Pradesh.The Employment Organization Sources of Stressors (EOSS) scale developed by Telaprolu and George (2005), was adopted in the study to measure the level of stress among the degree college teachers. To find out the significance of difference between male and female physical education teachers in their occupational stress, mean, standard deviation and samples t-test were computed. The results of the study concluded that male and female teachers in physical education were not found satisfied from their job. They had more job stress than their working conditions. Male and female teachers had similar occupational stress as whole.

Keywords: Job, Stress, Physical Education, Teacher, Schools, Male and Female

1. INTRODUCTION

Physical Education is the combination of two words – Physical and Education. The word physical refers to body, and indicates bodily characteristics such as strength, speed endurance, flexibility, health, coordination and performance. It generally contrasts the body with the mind. The term education when used in conjunction with physical, refers to a process of education that develops the human body especially fitness and movement skills. In olden days, body was considered a distinct entity separate from mind, intellect and spirit.

National Plan of Physical Education and Recreation (1956), the pioneer document prepared by the Central Advisory Board of Physical Education and Recreation in India points out, "Physical Education is education through physical activities for the development of total personality of the child to its fullness and perfection in body, mind and spirit". Physical Education is the only unique discipline, which uses physical activity as the medium for human development. It is a vital part of education, not a frill or ornament tacked on the school or college programme as a means of keeping students busy. In striving for fitness, it trains a child's mental, moral and social faculties, arouses in him awareness of environment and develops alertness, presence of mind, resourcefulness, discipline, cooperation and spirit of respect, sympathy and generosity towards others – qualities that are essential for a happy, healthy and well-disciplined life in a free and democratic world. The objective of education is the all-round development of a child as a whole.

"Stress is a kind of nonspecific response superimposed upon various specific manifestations of an insulting agent impinging upon the organism." In fact, Selye, used the term 'stress' to designate the event or trauma affecting the organism and the word 'strain' to denote what happens to the organism or individual. Later on, the term began to replace such words like anxiety, emotional distress, conflict, ego-threat, frustration, tension, lack of security etc. which denote some psychological and physiological conditions.

According to Selye (1956) – "Stress is a state in which the natural homeostasis (equilibrium) of the body is disrupted. Stress is caused by any threat to the organism. Disease, trauma, heat, cold, thirst, fatigue can all be causes of stress. Emotional arousals can also bring about stress." Stress is an area of interest among researchers and practitioners in many fields – including teaching. Many studies over a period of time have found teaching to be a stressful occupation (Dunham, 1992; Fejgin et al, 1995; Kyriacou and Sutcliffe, 1987).

The study of stress stems from early work by Selye (1946, p.55), who described stress as 'the non-specific response of the body to any demand made on it to adapt'. Not all stress is damaging to the body; indeed, positive stress (eustress) is needed to promote physical growth. Eustress is usually associated with a moderate level of stress which motivates the person to achieve an optimum level of performance. What is a moderate level, different for each person. On the other hand, negative or bad stress (distress) is damaging to the body. Since then the word stress has generally been associated with negative effect; stress that is damaging to the body. For example, in relation to teacher stress, Kyriacou and Sutcliffe (1978, p.3) reported that "stress is a response syndrome mediated by an appraisal of threat to the teacher's self-esteem or well-being". Kyriacou (1987, p.146) added that "Teacher's stress may be defined as the experience by a teacher of an unpleasant emotion, such as tension, frustration, anxiety, anger and depression,

resulting from aspects of his work as a teacher". It is this definition that is adopted in this study.

There are many theories of stress in general as well as stress in teaching. In the Person-Environment (P-E) Fit theory (Lazarus & Folkman, 1984) the core premise is that stress does not arise from a person or their environment separately, but rather from the interaction, or fit, between a person and their environment (Caplan, 1987). A good fit between a person and the environment generally results in a person not being stressed. On the other hand, stress arises from the misfit between a person and the environment. Thus, the experience of stress is a result of a person's appraisal of a perceived imbalance between a teacher's perceptions of the demands of a specific situation and difficulty or inability to meet such demands in a particular situation where the perceived consequences are important. The fit or misfit may be due – at least in part, to the person's background and experiences and roles and responsibilities in society as a result of different cultural and social expectations and environmental factors. These may apply differentially to different groups of teachers.

The P-E Fit theory has been used in previous studies of teachers' stress (Abel & Sewell, 1999; Brown & Ralph, 2002; Pithers & Fogarty, 1995; Reid & Hinton, 1999; Smith & Bourke, 1992; Storey & Billingham, 2001; Wilson & Hall, 2002).

Job stress also known as occupational stress has been defined as the experience of negative emotional states such as frustration, worry, anxiety and depression attributed to work related factors (Kyriacou, 2001). It is often linked or equated with challenge, but the two are very different. Challenge motivates and energizes us psychologically and physically to learn new skills and master given tasks. When a challenge is met, we feel a great sense of accomplishment, relaxation and satisfaction. Challenge is beneficial in the work environment as it helps increase productivity. Stress, on the other hand, is when job demands cannot be met, relaxation turns into exhaustion and a sense of satisfaction turns into feelings of tension. In short, one feels overly taxed both physiologically and psychologically and the stage is set for illness, injury and job failure. Therefore, stress may either be beneficial or harmful in its effects. Too little stress or challenge or pressure can be harmful and lead to so called rust out; too much may also be harmful and lead to burnout.

The purpose of the study was to compare the level of job stress between male and female Physical Education teachers working in higher secondary schools of Madhya Pradesh.

2. METHODOLOGY

2.1 Selection of Subject

For the purpose of the study, 288 physical education teachers (M= 231, Female =57) working in various government, private aided, and private unaided schools were selected in Madhya Pradesh.

2.2 Instrument

The Employment Organization Sources of Stressors (EOSS) scale developed by Telaprolu and George (2005), was adopted in the study to measure the level of stress among the degree college teachers.

2.3 Statistical Analysis

To compare the occupational stress between male and female physical education teachers, mean, standard deviation and samples t- test were employed.

3. RESULTS

To find out the significance of difference between male and female physical education teachers in their occupational stress, mean, standard deviation and samples t- test were computed and data pertaining to this has been presented in Table 1.

TABLE 1

SIGNIFICANCE OF DIFFERENCE BETWEEN MEAN SCORES OF MALE AND FEMALE TEACHERS ON VARIOUS COMPONENTS OF OCCUPATIONAL STRESS

S.N0.	Components of Occupational Stress	Gender	Mean	MD	σ DM	t-ratio
1	Role Overload	Male Female	4.57 5.23	0.66	.308	2.14*
2	Role Ambiguity	Male Female	11.63 12.70	1.07	0.49	2.18*
3	Role Conflict	Male Female	3.12 3.23	0.11	0.25	0.44
4	Unreasonable Group	Male Female	7.52 7.61	0.09	0.33	0.27
5	Responsibility	Male Female	17.18 17.35	0.17	0.51	0.33
6	Under Participation	Male Female	20.23 21.42	1.19	0.56	2.12*
7	Powerlessness	Male Female	11.08 11.26	0.18	0.49	0.37
8	Poor Peer Relation	Male Female	23.46 22.91	0.55	0.66	0.83
9	Intrinsic	Male Female	14.52 14.19	0.33	0.478	0.69
10	Low Status	Male Female	7.32 7.46	0.14	0.358	0.39
11	Strenuous Working	Male Female	24.98 24.89	0.09	0.64	0.14
12	Unprofitability	Male Female	3.20 3.40	0.20	0.28	0.71
	Total Occupational Stress	Male Female	148.81 151.67	2.86	2.44	1.17

Table 1 shows that male and female teachers differed significantly in three components of occupational stress i.e. role overload (t=2.14), role ambiguity (t=2.18), and in under participation (t=2.12).

However, in rest of the components like role conflict, unreasonable group and political pressure, responsibility for persons, powerlessness, poor peer relations, intrinsic impoverishment, low status, strenuous working conditions, unprofitability, and in total occupational stress male and female teachers did not differ significantly in their occupational stress scores.

4. DISCUSSION

Three components of occupational stress i.e. role overload, role ambiguity and in under participation, female teachers experienced significantly more stress than male teachers. However, in rest of the components like role conflict, unreasonable group and political pressure, responsibility for persons, powerlessness, poor peer relations, intrinsic impoverishment, low status, strenuous working conditions, unprofitability, and in total occupational stress male and female teachers did not differ significantly in their occupational stress scores.

5. CONCLUSION

Both sex teachers in physical education were not found satisfied from their job. They had more job stress than their working conditions. Male and female teachers had similar occupational stress as whole.

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A STUDY OF OCCUPATIONAL STRESS AMONG TEACHERS WORKING IN DIFFERENT TYPE OF SCHOOLS OF MADHYA PRADESH

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ABSTRACT

The purpose of the study was to find out the job stress among physical education teachers belong to different type of higher seconadary schools of M.P. For the purpose of the study, 288 physical education teachers (M= 231, Female =57) from various government, aided, and unaided higher secondary schools were selected in Madhya Pradesh. The Employment Organization Sources of Stressors (EOSS) scale developed by Telaprolu and George (2005), was adopted in the study to measure the level of stress among the degree college teachers. To assess the occupational stress among physical education teachers of government, aided, and unaided higher secondary schools of M.P., mean, standard deviation and F- ratio were employed. The results of the study revealed that Similarity was observed among physical education teachers in government, aided and unaided schools for occupational stress components of responsibility for persons, under participation, powerlessness and poor peer relations only. The physical education teachers working in government, aided, and unaided schools also experienced similar levels of stress in components of intrinsic impoverishment, low status, strenuous working conditions, un-profitability and total operational coping.

Keywords: Occupation, Stress, Male, Female, Physical Education Teacher, Schools

1. INTRODUCTION

Modern Physical Education recognizes its responsibility for man's total development i.e. physical, mental, educational and intellectual. Hence, through it the teacher has an opportunity to nurture health, happiness, character and democratic spirit among children. Physical Education, when well taught, can contribute more to the goals of general education. It is not expected to be force only for better metabolism or for greater strength. Nor it is presumed to exist only for fun and relaxation. All of these values are acceptable in part and therefore, the expectations from Physical Education.

Job stress also known as occupational stress has been defined as the experience of negative emotional states such as frustration, worry, anxiety and depression attributed to work related factors (Kyriacou, 2001).

Job stress may affect individuals as well as organizations. At the individual level a high level of job stress is a threat to mental and physical health, quality of life, goal achievement and personal development, whereas for the workplace these conditions lead to increased absenteeism, conflicts, low productivity and reduced quality and quantity of work. Thus, identification of factors responsible for stress and its management at primary level has long-term benefits both for employers and employees.

Fimian and Santaro (1983) indicated that continued stress can drastically lower job satisfaction and performance and can also damage the individual's personal life. The term 'burnout' is often used to describe the effects of continual stress. Logically, a teacher's mental health can be expected to affect class room performance and interactions with students and others as well. Other variables associated with teacher stress and burnout are role problems, loss of control, isolation, dissatisfaction with salary, role overload, role ambiguity and lack of administrative support.

A study by Pithers & Soden (1998) highlighted role overload as a significant stressor in teachers. They assessed levels of stress, organizational roles and stress in 322 Australian and Scottish teachers. Stress was found to be average in both national groups but overload emerged as a major cause of stress.

Lewis (1999) examined teacher's estimations of stress arising from being unable to discipline students in the way they would prefer. Overall, maintaining discipline, emerged as a stressor, with those worst affected being teachers who placed particular emphasis on student's empowerment.

Al-Khalefa (1999) found the major causes of stress for physical education teachers to be: work conditions; salaries, bonuses and allowances; status of physical education; supervision; school facilities; workload; career development.

The importance of job satisfaction lies in the fact that it is closely linked with performance and productivity of a person and is affected by a number of factors. Bamundo and Kuppleman (1980) examined the effects of seven variables on job satisfaction. It was found that education and income positively and strongly moderated job satisfaction and life satisfaction relationship. Self-employment also had a significant impact whereas occupation had only a modest effect. Age and service length showed strong effects.

The purpose of the study was to find out the job stress among physical education teachers belong to different type of higher seconadary schools of M.P.

2. METHODOLOGY

2.1 Selection of Subject

For the purpose of the study, 288 physical education teachers (M= 231, Female =57) from various government, aided, and unaided higher secondary schools were selected in Madhya Pradesh.

2.2 Instrument

The Employment Organization Sources of Stressors (EOSS) scale developed by Telaprolu and George (2005), was adopted in the study to measure the level of stress among the degree college teachers.

2.3 Statistical Analysis

To assess the occupational stress among physical education teachers of government, aided, and unaided higher secondary schools of M.P., mean, standard deviation and F- ratio were employed.

3. RESULTS

To find out the significant difference among Government, Aided and unaided higher secondary schools in their occupational stress, mean, SD and F-ratio were computed and data pertaining to this, has been presented in Table 1 and 2.

TABLE 1

ANOVA FOR VARIOUS COMPONENTS OF OCCUPATIONAL STRESS OF TEACHERS WORKING IN DIFFERENT TYPES OF SECONDARY SCHOOLS OF M. P.

Type of Schools	Responsibility M ±SD	Under M ±SD	Powerlessness M ±SD	Poor pear M ±SD
Government	17.26±3.57	20.96±4.17	11.44±3.77	23.30±4.21
Aided	16.94±3.45	20.13±3.61	10.77±2.93	23.65±4.24
Unaided	17.48±3.23	20.38±3.69	11.18±3.45	23.06±4.79
Total	17.22±3.42	20.47±3.82	11.11±3.38	23.35±4.41
ANOVA	F=.626, P=.536	F=1.164, P=.314	F=.990, P=.373	F=.439, P=.645

Table 1 revealed the non-significant differences for occupational stress components of responsibility for persons, under participation, powerlessness and poor peer relations where all the obtained f values failed to reach the significance levels. In other words, teachers working in government, aided and unaided schools had statistically equal stress scores on responsibility for persons, under participation, powerlessness and poor peer relations components.

TABLE 2

ANOVA FOR VARIOUS COMPONENTS OF OCCUPATIONAL STRESS OF TEACHERS WORKING IN DIFFERENT TYPES OF SECONDARY SCHOOLS OF M. P.

Type of School	Intrinsic Improvement M ±SD	Low Status M ±SD	Strenuous Working Condition M ±SD	Un-profitability M ±SD	Total Occupation Stress M ±SD
Government	14.49±2.97	7.56±2.19	25.33 ±4.54	3..39±2.18	151..84±19.4
Aided	14.84±3.19	7.01±2.47	24.89 ±4.20	3..11±1.94	148..01±14.2
Unaided	13.58±3.22	7.54±1.19	24.70 ±4.14	3..24±1.70	148..52±15.7
Total	14.45±3.14	7.35±2.25	24.97 ±4.28	3..24±1.94	149..17±16.5
ANOVA	F=1.87, P=.156	F=1.918, P=.149	F=.528, P=.900	F=.482, P=.618	F=.1495, P=.226

Table 2 shows that the teachers working in government, aided, and unaided schools' experiences similar levels of stress in components of intrinsic impoverishment, low status,

strenuous working conditions, un-profitability and total operational coping. One-way ANOVA revealed non- significant differences between scores of teachers working in different types of schools.

4. DISCUSSION

Physical education teachers had higher levels of stress in few components. They had moderate levels of stress in few components, and in the rest of the components they experienced lower levels of stress. When total occupational stress scores were verified, the selected physical education teachers experienced moderate levels of stress. As far as high stress experience is considered, in the following components –responsibility for persons, under participation, powerlessness, intrinsic impoverishment, and strenuous working conditions physical education teachers experienced higher levels of stress. In the case of role ambiguity and low status, physical education teachers experienced moderate levels of stress. Lower levels of stress were experienced in the case of components role overload, role conflict, poor peer relations and in unprofitability.

5. CONCLUSIONS

1. Similarity was observed among physical education teachers in government, aided and unaided schools for occupational stress components of responsibility for persons, under participation, powerlessness and poor peer relations only
2. The physical education teachers working in government, aided, and unaided schools also experienced similar levels of stress in components of intrinsic impoverishment, low status, strenuous working conditions, un-profitability and total operational coping.

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ASSESSMENT OF BEHAVIOURAL INTENTION, ATTITUDE AND SUBJECTIVE NORMS AMONG SPORTS WOMEN OF DIFFERENT LEVELS OF SPORTS PARTICIPATION AND FITNESS GROUP

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ABSTRACT

The purpose of the study was to assess and analyze the attitude, belief and behavioural intention of sports women towards regular participation in sports. Four hundred twenty four (N=424) sports women of Madhya Pradesh and Uttar Pradesh, 106 subjects in each group of school, university, national and fitness group were selected from amongst the players representing their respective teams in various schools, universities and national championship of different sports and games. The attitude, belief and behavioural intention questionnaire developed by Ajzen and Fishbein (1980) was used to collect the data from the selected sample. To assess the selected variables, mean, standard deviations F-ratio were computed. In case of significant ANOVA, Least significant difference (LSD) test of post-hoc comparisons was applied to assess the significance of difference between ordered paired means. The results of study revealed that Sports women of all four levels differ significantly only on behavioural intention, But they did not differ on subjective norms .

Keywords: Behaviour, women, Intention, norms , Participation levels, Attitude

1. INTRODUCTION

Sports, as a social and cultural phenomenon, is a fundamental activity, which involves every human being. Beyond doubt it also enjoys an enormous prestige and plays an essential role in peaceful development of the human society and the educational process as well. Moreover, involvement in sports has been recognized, mainly as the compulsive biological necessity, as a means of identification or self expression, and conscious on unconscious search for experimentation for personal and collective benefits. However, the root of today's high performance and sports system can be traced in the various concepts of play, games and sports, which have now required personal, social and global dimensions, and go well beyond the mere sporting act.

Attitude plays a very important role in social behaviour and social interaction of the players. In general, from the point of view of sports, it is something different where favorable and unfavorable condition affects the attitude of players. Attitude prompts and motivates a player to behave with or react to in a particular manner towards certain individuals, objects and circumstances. New requirement of the environment creates new attitude. Development of attitude is a gradual and never ending process so according to the time and place attitude of player changes.

Intention, in turn, is determined by the individual's attitude to the behaviour in question, and by his or her subjective norms. Subjective norms refers to the individual's belief that important for others expect him or her to perform (or not to perform) the behaviour in question. In other words, subjective norm reflects the degree of perceived social pressure on the individual to perform or not to perform the behaviour. The relative contributions of attitude to behaviour and subjective norm in determining behavioural intentions is left open in the theory of reasoned action, which of these factors is more important in shopping intentions is thought to depend on the behaviour in question and the individual in questions, clearly, some behaviours have more impact on our partners, families, friends and colleagues than do other behaviours.

Geraldine (1992) indicatesd that the 46 % of the variation is behavioural intention was accounted for by attitude and subjective norms. Attitude alone accounted for 40 % of that variation. Exercise outcome belief and social normative belief had a moderately strong relationship with attitude and subjective norms.

Yordy et.al. (1993) indicated that the reasoned action and social cognitive models are each significantly predictive of future exercise intention and behavior.

Allen (2003) indicated that social motivational constructs added to the explanation of adolescents interest in sport.

The purpose of the study was to assess and analyze the attitude, belief and behavioural intention of sports women towards regular participation in sports.

2. METHODOLOGY

2.1 Selection of Subjects

Four hundred twenty four (N=424) sports women of Madhya Pradesh and Uttar Pradesh, 106 subjects in each group of school, university, national and fitness group were selected from amongst the players representing their respective teams in various schools, universities and national championship of different sports and games.

2.2 Instrument

The attitude, belief and behavioural intention questionnaire developed by Ajzen and Fishbein (1980) was used to collect the data from the selected sample.

2.3 Statistical Analysis

To assess the selected variables, mean, standard deviations F-ratio were computed. In case of significant ANOVA, Least significant difference (LSD) test of post-hoc comparisons was applied to assess the significance of difference between ordered paired means.

3. RESULTS

To find out the significance of the difference among mean scores of different variables of sports women of different levels of sports participation, mean, SD, F-ratio and LSD (LSD) test of post-hoc comparisons were computed and data pertaining to this, has been presented in Table 1 to 3.

TABLE – 1

DESCRIPTIVE STATISTICS FOR ATTITUDE, BEHAVIOURAL INTENTION, SUBJECTIVE NORMS, OF SPORTS WOMEN OF DIFFERENT LEVELS OFSPORTS PARTICIPATION AND FITNESS GROUP.

S.No.	Items	Levels	Mean	S.D.
1	Attitude	School	6.46	.55
		University	6.48	.59
		National	6.38	.66
		Fitness	6.57	.61
		Total	6.47	.61
2	Subjective Norms	School	6.24	1.06
		University	6.16	1.06
		National	6.41	.97
		Fitness	5.98	1.21
		Total	6.20	1.08
3	Behavioural Intemtion	School	6.33	.89
		University	6.19	.96
		National	6.52	.77
		Fitness	6.07	1.04
		Total	6.28	.93

TABLE – 2

ANALYSIS OF VARIANCE OF MEAN SCORE OF BEHAVIOURAL INTENTION, ATTITUDE AND SUBJECTIVE NORMS AMONG SPORTS WOMEN OF DIFFERENT LEVELS OF SPORTS PARTICIPATION AND FITNESS GROUP

S. N0.	Variable	Source of Variance	Sum of Squares	df	Mean Square	F-ratio
1	Behavioural Intention	Between Groups Within Groups	11.94 358.09	3 421	3.98 0.85	4.68*
2	Attitude	Between Groups Within Groups	1.87 381.37	3 421	0.62 0.90	0.68
3	Subjective Norms	Between Groups Within Groups	8.04 568.23	3 421	2.68 1.34	1.98

*Significant at .05 level. $F_{.05}$ (3,421) = 2.63

It was evident from table –2, that sports women of all four levels differ significantly only on behavioural intention, as the obtained F-ratio of (4.68) is higher than the F-ratio to be statistically significant at .05 level. The obtained F-ratio for attitude (0.68); and subjective norms (1.98) were statistically insignificant as the obtained values were less than required F-value of (2.63) to be statistically significant at .05 level.

In order to find out inter group difference in behavioural intention of sports women of different levels and fitness group Least significant difference (LSD) test of post-hoc comparisons was used and data has been presented in table - 3.

TABLE – 3

SIGNIFICANCE OF DIFFERENCE BETWEEN ORDERED PAIRED MEANS OF DIFFERENT GROUPS ON BEHAVIOURAL INTENTION.

Mean Scores					
School	University	National	Fitness Group	Paired Mean Difference	CD
6.33	6.19	-	-	0.14	0.25
6.33	-	6.52	-	0.19	
6.33	-	-	6.07	0.26*	
-	6.19	6.52	-	0.33*	
-	6.19	-	6.07	0.12	
-	-	6.52	6.07	0.45*	

*Significant at .05 level.

Table – 3, clearly indicated that there were insignificant differences between the means scores of school level and University level (0.14); between school level and national level (0.19); between university level and fitness group (0.12) at .05 level. As the mean differences between these levels were less then the confidence interval of (0.25) required to be statistically significant at .05 level.

The mean difference between school level and fitness group (0.26); between university level and national level (0.33); and between national level and fitness group (0.45) were statistically significant at .05 level.

4. DISCUSSION

Descriptive data of different levels of female sports participation on attitude, belief and behavioural intention indicated that the variation in bahavioural intention was accounted for by attitude and subjective norms. These results show a weak relationship between attitude and subjective norms, similar to the results reported by Riddle (1980) in her study of "Attitude, belief and behavioural intention of women towards regular jogging" used the theory of reasoned action.

When different levels of sports women were compared, the difference on behavioural intention was found to be statistically significant. Where as the differences on attitude and subjective norms were statistically insignificant.

For each of five variables i.e. attitude, behavioural intention, subjective norms, exercise outcome belief and social normative belief were calculated, the mean scores of school level participants were higher than other levels. For the most of the individual items of the exercise outcome belief and exercise outcomes evaluation, scores of the school level were higher than other levels.

The results of the ANOVA for original five variables (attitude, behavioural intention, subjective norms, exercise outcome belief and exercise outcome evaluation) among sports women indicated significant differences in behavioural intention only. Minimal differences in these variables have also been found between joggers and non- exercisers (Riddle, 1980), between low attenders and high attenders of fitness program (Sonstroem, 1982), and between college students in weight program (Kendzierski and Lamastro, 1988). More

positive the belief and attitude towards the activity, greater the behavioural intention and participation in the sports.

5. CONCLUSIONS

1. Sports women of all four levels differ significantly only on behavioural intention, But they did not differ on subjective norms
2. Similarity was observed between the means scores of school level - University level, school level - national level and between university level - fitness group .
3. Dissimilarity was observed between mean scores of school level - fitness group, university level - national level and between national level - fitness group .

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COMPARATIVE ANALYSIS OF EXERCISE OUTCOME BELIEF AMONG SPORTS WOMEN OF DIFFERENT LEVELS OF PARTICIPATION AND FITNESS GROUP

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ABSTRACT

The purpose of the present investigation was t o analyse and compare the exercise outcome belief among sports women of different levels of sports participation and fitness group, For this purpose, four hundred twenty four (N=424) sports women of Madhya Pradesh and Uttar Pradesh, 106 subjects in each group of school, university, national and fitness group were selected from amongst the players representing their respective teams in various schools, universities and national championship of different sports and games. The attitude, belief and behavioural intention questionnaire developed by Ajzen and Fishbein (1980) was used to collect the data from the selected sample. To assess the selected variables, mean, standard deviations F-ratio were computed. In case of significant ANOVA, Least significant difference (LSD) test of post-hoc comparisons was applied to assess the significance of difference between ordered paired means. The results of study concluded that the sports women of different levels of sports achievement and fitness group differ significantly on 'improve your overall health' ; 'take a lot of time'; 'helps you feel good about yourself' ; 'makes you tired and fatigued'; and 'leads to muscle soreness' subscales of Exercise outcome belief only. Sports women of different levels of sports achievement and fitness group did not differ in rest of the subscales of Exercise outcome belief.

Keywords: Participation levels, fitness group, exercise, belief, sports women.

1. INTRODUCTION

Sports participation among women have increased dramatically since late 1970s: This has been primarily the result of a growth in opportunities fueled by equal right legislation, the women movement, the health and fitness movement and increased publicity given to women athletes. Despite this trend of increased participation, future increased in sports participation among women will not be automatic. Opportunities for sports involvement increased, but the kinds of opportunities available to most people were shaped by factors beyond the interests of the participants themselves.

The term belief is to be used in a generic sense which includes all varieties that explain above i.e., knowledge, opinions, and faith. There are clear differences among what we call knowledge, opinion, and faith, but there is a common set of factors governing them, and a common set of characteristics in term of which can be described. This general use of the term belief corresponds closely to the way the word is used in everyday speech. We commonly say "We believe " When we think more explicitly that we have knowledge or that we are of the opinion or that we have faith. For example, we "believe" that the earth is spherical or that God is guiding our actions.

There are many beliefs in sports too, particularly concerning diet, ergogenic aids, training, and injury. Some of these beliefs are based on empirical evidence, others are based on superstition or misunderstood theory. An important task of the sports scientist is to examine these beliefs, to support those which are beneficial and have scientific validity, and to give rational explanations for those that are harmful or useless so that they can be abandoned. A socially constructed and shared views about what should be, should not be, or what is, or will be. Belief has been classified as either a descriptive belief or a normative belief. A descriptive belief is concerned with what is, or was, or will be; and a normative belief is concerned with what should be or ought to be.

2. METHODOLOGY

2.1 Selection of Subjects

Four hundred twenty four (N=424) sports women of Madhya Pradesh and Uttar Pradesh, 106 subjects in each group of school, university, national and fitness group were selected from amongst the players representing their respective teams in various schools, universities and national championship of different sports and games.

2.2 Instrument

The attitude, belief and behavioural intention questionnaire developed by Ajzen and Fishbein (1980) was used to collect the data from the selected sample.

2.3 Statistical Analysis

To assess the selected variables, mean, standard deviations F-ratio were computed. In case of significant ANOVA, Least significant difference (LSD) test of post-hoc comparisons was applied to assess the significance of difference between ordered paired means.

3. RESULTS

To find out the significance of the difference among mean scores of different variables of sports women of different levels of sports participation, mean, SD, F-ratio and LSD (LSD) test of post-hoc comparisons were computed and data pertaining to this, has been presented in Table 1 to 6.

TABLE 1

ANALYSIS OF VARIANCE OF MEAN SCORE OF EXERCISE OUTCOME BELIEF SUBSCALE ITEMS AMONG SPORTS WOMEN OF DIFFERENT LEVELS OF SPORTS PARTICIPATION AND FITNESS GROUP.

Items	Source of Variance	Sum of Squares	df	Mean Square	F-ratio
Improve Your Overall physical health	Between Groups Within Groups	12.99 312.48	3 421	4.33 0.74	5.83*
Tone your muscle	Between Groups Within Groups	5.85 385.07	3 421	1.95 0.91	2.13
Take a lot of time	Between Groups Within Groups	21.17 892.98	3 421	7.05 2.12	3.32*
Give you more energy	Between Groups Within Groups	5.49 431.25	3 421	1.83 1.02	1.79
Reduce tension and stress	Between Groups Within Groups	7.71 530.71	3 421	2.57 1.26	2.03
Helps you feel good about yourself	Between Groups Within Groups	7.03 318.74	3 421	2.34 0.75	3.09*
Helps You get/Study in shape	Between Groups Within Groups	4.07 388.73	3 421	1.35 0.92	1.46
Leads to Joint Injuries	Between Groups Within Groups	25.79 1380.06	3 421	8.59 3.27	2.62
Helps control your weight	Between Groups Within Groups	5.85 565.51	3 421	1.95 1.34	1.45
Improves your cardio-respiratory fitness	Between Groups Within Groups	5.44 385.64	3 421	1.81 0.91	1.97
Enhance your mental well being	Between Groups Within Groups	0.31 478.13	3 421	010 1.13	.09
Makes you tired and fatigued	Between Groups Within Groups	34.05 1367.30	3 421	11.35 3.24	3.49*
Leads to muscle soreness	Between Groups Within Groups	28.72 1328.72	3 421	9.57 3.15	3.03*
Develop Good Habits or Exercise	Between Groups Within Groups	3.87 628.45	3 421	1.29 1.49	0.86
Is fun	Between Groups Within Groups	017 369.80	3 421	0.05 0.87	0.06
Is good for your heart	Between Groups Within Groups	0.92 382.14	3 421	0.30 0.90	0.33
Is good break from your daily routine	Between Groups Within Groups	7.03 715.56	3 421	2.34 1.69	1.38
Makes you feel self conscious/embarrassed	Between Groups Within Groups	8.31 1635.41	3 421	2.77 3.90	0.71
Provide a chance to meet other people	Between Groups Within Groups	4.40 473.69	3 421	1.46 1.12	1.30

Significant at .05 level., $F_{.05}$ (3,421) = 2.63

The data in table – 1, indicated that the sports women of different levels of sports achievement and fitness group differ significantly on 'improve your overall health' (5.83); 'take a lot of time' (3.32); 'helps you feel good about yourself' (3.09); 'makes you tired and fatigued' (3.49); 'leads to muscle soreness' (3.03) subscales of Exercise outcome belief as the obtained F- ratio were higher than the F- value (2.63) required to be significant at .05 level. Further the F- ratio for 'tone your muscle' (2.13); 'give you more energy' (1.79); 'reduce tension and stress' (2.03); 'helps you get/study in shape' (1.46); 'leads to joint injuries' (2.62); 'helps control your weight' (1.45); 'improve your cardio-respiratory fitness' (1.97); 'enhance your mental well being' (0.09); 'develop good habits or exercise' (0.86); 'is

fun' (0.06); 'is good for your heart' (0.33); 'is good break from your daily routine' (1.38); 'makes you feel self conscious/embarrassed' (0.71); 'provide a chance to meet other people' (1.30) were less than the required F- ratio (2.63) to be significant at .05 level. Thus the group did not differ on these subscales of Exercise outcome belief.

Since the F-ratio for 'improve your overall health', 'take a lot of time', 'helps you feel good about yourself' , 'makes you tired and fatigued', 'leads to muscle soreness', 'develop good habit or exercise' subscale items of exercise outcome belief were found statistically significant, Least significant difference test of Post-hoc comparisons was employed to find out the significance difference between ordered paired means of different groups for each subscale and the data has been presented in table – 2 to 16.

TABLE 2

SIGNIFICANCE OF DIFFERENCE BETWEEN ORDERED PAIRED MEANS ON IMPROVE YOUR OVERALL PHYSICAL HEALTH SUBSCALE OF EXERCISE OUTCOME BELIEF OF SPORTS WOMEN OF DIFFERENT LEVELS OF SPORTS PARTICIPATION AND FITNESS GROUP.

Mean Score					
School	University	National	Fitness Group	Paired Mean Difference	CD
6.70	6.21	-	-	0.49*	0.23
6.70	-	6.43	-	0.27*	
6.70	-	-	6.5	0.20	
-	6.21	6.43	-	0.22	
-	6.21	-	6.5	0.29*	
-	-	6.43	6.5	0.07	

*Significant at .05 level.

Table - 2, clearly indicated that there insignificant differences between the mean scores of school level and fitness group (0.20); between university level and national level (0.22); and between national level and fitness group (0.07) at .05 level. As the mean differences between these levels were less than the confidence interval of (0.23) required to be significant at .05 level. Whereas mean differences between school level and university level (0.49); between school level and national level (0.27); and between university level and fitness group (0.29) were more than the confidence interval of (0.23) required at .05 level.

TABLE 3

SIGNIFICANCE OF DIFFERENCE BETWEEN ORDERED PAIRED MEANS ON TAKE A LOT OF TIME SUBSCALE OF EXERCISE OUTCOME BELIEF OF SPORTS WOMEN OF DIFFERENT LEVELS OF SPORTS PARTICIPATION AND FITNESS GROUP.

Mean Score					
School	University	National	Fitness Group	Paired Mean Difference	CD
5.61	5.44	-	-	0.17	0.39
5.61	-	5.06	-	0.55*	
5.61	-	-	5.61	0	
-	5.44	5.06	-	0.38	
-	5.44	-	5.61	0.17	
-	-	5.06	5.61	0.55*	

*Significant at .05 level.

Table - 3, revealed that there were insignificant differences between the mean scores of school level and university level (0.17); between school level and fitness group

(0); between university level and national level (0.38); and between university level and fitness group (0.17) at .05 level. As the mean differences between these levels were less than the confidence interval of (0.39) required to be statistically significant at .05 level. The mean difference between school level and national level (0.55); and between national level and fitness group (0.55) were more than the confidence interval of (0.39) required to be statistically significant at .05 level.

TABLE 4

SIGNIFICANCE OF DIFFERENCE BETWEEN ORDERED PAIRED MEANS ON HELPS YOU FEEL GOOD ABOUT YOURSELF SUBSCALE OF EXERCISE OUTCOME BELIEF OF SPORTS WOMEN OF DIFFERENT LEVELS OF SPORTS PARTICIPATION AND FITNESS GROUP.

Mean Score					
School	**University**	**National**	**Fitness Group**	**Paired Mean Difference**	**CD**
6.62	6.33	-	-	0.29*	0.23
6.62	-	6.36	-	0.26*	
6.62	-	-	6.58	0.04	
-	6.33	6.36	-	0.03	
-	6.33	-	6.58	0.25*	
-	-	6.36	6.58	0.22	

*Significant at .05 level.

Table - 4, indicated that there were insignificant differences between the mean scores of school level and fitness group (0.04); between university level and national level (0.03); and between national level and fitness group (0.22) at .05 level. The mean differences between school level and university level (0.29); between school level and national level (0.26); and between university level and fitness group (0.25) were statistically significant at .05 level. As the mean differences between these levels were more than the confidence interval of (0.23) required to be significant at .05 level.

TABLE 5

SIGNIFICANCE OF DIFFERENCE BETWEEN ORDERED PAIRED MEANS ON MAKES YOU TIRED AND FATIGUED SUBSCALE OF EXERCISE OUTCOME BELIEF OF WOMEN OF DIFFERENT LEVELS OF SPORTS PARTICIPATION AND FITNESS GROUP.

Mean Score					
School	**University**	**National**	**Fitness Group**	**Paired Mean Difference**	**CD**
4.37	4.5	-	-	0.13	0.48
4.37	-	4.16	-	0.21	
4.37	-	-	3.75	0.62*	
-	4.5	4.16	-	0.34	
-	4.5	-	3.75	0.75*	
-	-	4.16	3.75	0.41	

*Significant at .05 level.

It is quite obvious from table - 5, that there were insignificant differences, between the mean scores of school level and university level (0.13); between school level and national level (0.21); between university level and national level (0.34); and between

national level and fitness group (0.41) at .05 level. As the mean differences between these levels were less than the confidence interval of (0.48) required to be significant at .05 level. The mean differences between school level and fitness group (0.62); and between university level and fitness group (0.75) were statistically significant at .05 level.

TABLE 6

SIGNIFICANCE OF DIFFERENCE BETWEEN ORDERED PAIRED MEANS ON LEADS TO MUSCLE SORENESS SUBSCALE OF EXERCISE OUTCOME BELIEF OF SPORTS WOMEN OF DIFFERENT LEVELS OF SPORTS PARTICIPATION AND FITNESS GROUP.

Mean Score					
School	**University**	**National**	**Fitness Group**	**Paired Mean Difference**	**CD**
4.22	4.37	-	-	0.15	0.48
4.22	-	4.13	-	0.09	
4.22	-	-	3.67	0.55*	
-	4.37	4.13	-	0.24	
-	4.37	-	3.67	0.70*	
-	-	4.13	3.67	0.46*	

*Significant at .05 level.

Table - 6, revealed that there were insignificant differences between the mean scores of school level and university level (0.15); between school level and national level (0.09); and between university level and national level (0.24) at .05 level. As the mean differences between these levels were less than the confidence interval of (0.48) required to be statistically significant at .05 level. The mean differences between school level and fitness group (0.55); between university level and fitness group (0.70); and between national level and fitness group (0.46) were more than the confidence interval of (0.48) required to be statistically significant at .05 level.

4. DISCUSSION

To find out the significance among sports achievement and fitness groups of sports women on subscales of exercise outcome belief, F-ratio was computed. The results revealed that the mean scores of all the 19 items of exercise outcome belief subscale were higher for school level participants than for fitness group, national level and than university level participants. These beliefs are very similar to these in the Stienhardt and Dishman (1989). The school level participants thought the outcomes more likely to occur and rated them to be more important than did the other level participant.

Insignificant differences were found between the mean scores of school level and fitness group; between university level and national level; and between national level and fitness group.. Whereas mean differences between school level and university level; between school level and national level; and between university level and fitness group were found significant.

Study of Riddle (1980) and Sanstroem (1982) reflected very similar results on individual items of exercise outcomes belief and exercise outcomes evaluation. In Riddle's study non-exercisers thought jogging would require too much discipline; too much time; and make them too tired. Sanstroem found that five of the same beliefs differentiated high attenders from low attenders of a faculty fitness programme.

5. CONCLUSIONS

1. Sports women of different levels of sports achievement and fitness group differ significantly on 'improve your overall health' ; 'take a lot of time'; 'helps you feel good about yourself' ; 'makes you tired and fatigued'; and 'leads to muscle soreness' subscales of Exercise outcome belief.
2. Sports women of different levels of sports achievement and fitness group on 'tone your muscle'; 'give you more energy'; 'reduce tension and stress'; 'helps you get/study in shape'; 'leads to joint injuries'; 'helps control your weight'; 'improve your cardio-respiratory fitness' ; 'enhance your mental well being' ; 'develop good habits or exercise'; 'is fun' ; 'is good for your heart' ; 'is good break from your daily routine' ; 'makes you feel self conscious/embarrassed' ; 'provide a chance to meet other people' did not differ on these subscales of Exercise outcome belief.

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ENVIRONMENTAL POLLUTION IN THE SOIL OF KORBA

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ABSTRACT

Environmental pollution is the mixture of contaminants, which causes adverse effects into the natural environment. In the present study the TDS content in the soil samples were analysed. The Result revealed the degree of pollution levels in the Korba City. From the analytical data of physico-chemical and selected metallic elements, the conclusion has come the soil of study field was contaminated by the presents of excess amount of undesirable chemicals.. All the soil samples showed large difference in the minimum and maximum values of many parameters indicating contamination due to mining activities in uneven manner

Kewwords: Environment, Pollution, Soil, Korba,

1. INTRODUCTION

Environmental pollution is the mixture of contaminants, which causes adverse effects into the natural environment .The causes of environmental pollution are: Lack of policies to control pollution ,unplanned industrial growth, use of outdated technologies ,presence of large number of small scale industries ,inefficient waste disposal, leaching of resources from our natural world. Industrial developments are the main cause of environment pollution . Coal and oil become the predominant sources of energy as industry spread across the world. The release of CO_2 as from various industrial sources is a key cause of global warming.

The first main source of industrial pollution is the production of electricity. In coal burning power plants fly ash is the byproduct of burned coal .Nuclear waste is the another source of industrial pollution. Outside of energy production all factories produces some form of pollution .Heavy metals are produced as a result of metal refining .Environmental pollution hurts the environment in various ways:-

1.1 Soil pollution

The soil pollution is caused by the presence of industrial wastes. Some of the most common soil contaminants are Chlorinated hydrocarbons (CFH) heavy metals (such as Chromium, Cadmium found in rechargeable batteries and Lead found in Lead paint, aviation fuel and still gasoline ,Zinc Arsenic and benzene.

1.2 Water pollution

it is caused by dumping of industrial wastes into water ways , improper containment of waste, which causes leakage into groundwater and waterways.

1.3 Air pollution

Air pollution is caused by the substances present in the air that can have adverse effects on humans and the ecosystem. The substance can be solid particles , liquid droplets or gases.

In mining areas the soils are affected by various coal mining operations, ie. Storage of over burden dump materials, Blasting, drilling, construction of ancillary facilities, cleaning of lands and movement of vehicles, by these operations various wastes are released. Korba city is the power Capital of India. It is abound in minerals like Bauxite, Coal etc. SECL is one of the most profitable coal companies under the flagship of Coal India limited. many important mines are situated in Korba district. Coal based thermal power plant namely NTPC, LANCO, BCPP, CSEB-East, CSEB-West. LANCO, generate more than 4500 m.w .of electricity. The Gevra Project in Korba district is the largest opencast mine in India. The Korba has been categorized in top five under most critically polluted. (Web sources: MSN 2010).

3. METHODOLOGY

In the present study the TDS content in the soil samples varied from 600 to 1500. In the present study the Organic Carbon content in the soil samples varied from 19% to 2.13%. The availability of Nitrogen in the soil represents a fraction of the total nitrogen absorbable by plants. Soil Nitrogen exists in three general forms ie: Organic Nitrogen, compounds Ammonium, Ions and nitrate Ions. Several researchers reported that nitrogen may enter the soil through rainfall, plant residues, and nitrogen fixation by soil organisms, manures and commercial fertilizers. In the present study available nitrogen were found to be ranged 190 to 400Kg/ha in different sampling sites. Available Sulphur in the soil refers to mainly SO_4, Sulphur exchangeable and water soluble Sulphur and a small fraction of organic Sulphur. In the present study the observed amount of available sulphur were founds 30.2 ppm to 84.5 ppm, the Manganese varied from 0.394 to 4.425, the Zinc varied from 0.304 to 4.313, the Copper varied from 0.122 to 2.842.

2. RESULT

In order to obtain the various kinds of pollutant in soils of Korba, I have taken extensively analysis of soils in context of physico-chemical and selected metallic elements. For this aim ,I have selected five sampling locations in Korba and adjoining areas.The results were obtained for Moisture, pH, EC,TDS,OC,N,S, Mg, Ca, Mn, Zn ,Cu.

Moisture content indicates the water amount in the soil, which may vary with time. The moisture content in the selected soils were found to be ranged from 4.65% to 19.33% moisture content of soil was found lower due to presence of rocky mass material, rise in tempter and vice versa, and higher indicating well for normal growth of plants.All the soil samples showed acidic in nature, can be attributed to oxidation of pyrite particles in the soil sample . The lower pH causes problems for normal growth of the plants.

Electrical conductivity is the most common measure of soil salinity. It is also indicate the ability of an aqueous solution to carry electric current. The water soluble salts in the soils consist of various action and anions. These salts when present in optimum concentration, the serve as nutrient to growing plants, but when present in excessive amount ie-EC> 4 ds/m in the soil is said to be saline , which is harmful to the plant growth. The injurious effects of high salt concentration on plant growth are mainly due to high osmotic pressure of soil solution which results an exosmosis and plamolysis which inhibits the uptake of water and nutrients by plants. During study period E.C. were found in most of samples to be ranged 0.04 m mhos/Cm were due to upward migration of different salts with spontaneous combustion of coal particles in sampling sites. Whereas the lower values observed might be due presence of lower amount of salts in the soil samples.

4. DISCUSSION

All human activities are based on the land which is scarce natural resources in our country. Nevertheless it has been observed that millions of people world-wide are deprived of this soils are continuously polluted by natural process such as weathering of soils and rocks, anthropogenic activities like domestic wastes, municipal sewage, Agricultural runoff and industrial effluents. Exceeding concentration of metallic elements are causes of health hazardous for flora-fauna and human beings, which are entered in soil through over mineralization, improper use of agriculture chemicals, pesticides, use thermal power conducting etc. I have observed in the study areas, the soils are degraded quality. In the study area most of soil reveals acidic nature, low organic carbon content lower amount of nitrogen then prescribed limits use for Agriculture, which gives negative impact on agriculture. Due to highly acidic soil, impaired absorption of Calcium, Magnesium ,Manganese, Zinc, Copper has been found, which has reported many time greater than normal limits as prescribed by the soil monitoring agencies (SHC, ASI), often in toxic proportions.

5. CONCLUSION

The Result revealed the degree of pollution levels in the Korba City. From the analytical data of physico-chemical and selected metallic elements, the conclusion has come the soil of study field was contaminated by the presents of excess amount of undesirable chemicals. The TDS [1100 mgl^{-1}], pH [5.78], Sulphur content [55.56 mg/kg] and Metallic elements Mn [1.78 mg/kg], Zn [1.45 mg/kg], and Cu [6.61 mg/kg] have been found beyond the desirable ranges the inferred of this study, the soil is highly polluted and not fit for the agriculture purpose. All the

soil samples showed large difference in the minimum and maximum values of many parameters indicating contamination due to mining activities in uneven manner

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