



ASSESSMENT OF WELLNESS LIFESTYLE OF STUDENTS OF SELECTED IIM IN INDIA

Purnima Joshi ¹, Dr. Mukesh Solanki ² & Prof. Ajay Kumar ³

Affiliations:

- ¹ Department of Physical Education, Devi Ahilya Vishwavidyalaya, Indore (M.P.)
- ² Department of Physical Education, Devi Ahilya Vishwavidyalaya, Indore (M.P.)
- ³ Department of Physical Education, Devi Ahilya Vishwavidyalaya, Indore (M.P.)

ABSTRACT

Wellness Lifestyle is getting into trends in India in early Twenties as people are less aware but lot of MNCs are investing in Wellness Lifestyle of their employees to reduce absenteeism and increase productivity, this study was assessing Wellness Lifestyle of students of different IIMs (Indian Institutes of Management) of India who will be joining this healthy/ unhealthy workforce. Aim- The objective of the study to assess the Wellness Lifestyle of Post Graduate Program (MBA) students (N=600) of IIM-Ahmadabad (N=100), IIM-Bangalore (N=100), IIM-Calcutta (N=100), IIM-Indore (N=100), IIM-Kozhikode (N=100), IIM-Lucknow (N=100). Methodology- Data was collected through random sampling method (On and Offline Mode), Descriptive Statistics was applied M.S. Excel. Results- On the basis of W.K.Hoeger Wellness Lifestyle questionnaire rating the overall descriptive statistics shows that 76% of students need Improvement on health related Fitness factor, 72% students" needs improvement on Nutritional level, 71% students were good on Avoiding Chemical Dependency , 45% of overall students need Improvement on stress management, 54% students needs Improvement personal health and hygiene factor, about 69% students were needing improvement on their emotional wellbeing factor, 50% of students from all 6 IIMs are under excellent category, 41% of the students are excellent with their personal safety measure and lastly Environmental health and protection students were categorised as Excellent, Good and Needs Improvement with 32%,35% and 32% respectively. Apart from Avoiding Chemical Dependency and Disease Prevention variable students are falling under „needs improvement“ category, rest Health Related Fitness, Nutrition, , Emotional Wellbeing, Stress Management, Personal Health and Hygiene, Personal Safety Environment Health and Protection variable.

Keywords: Wellness, Lifestyle, Health, Stress, IIM, professional students

1. INTRODUCTION

Indian Institutes of Management are the premier B-Schools of India. Most of the non-creamy B-Schools of states and private colleges B-Schools usually look up to IIMs to improvise their academic as well as extracurricular activities. The premiere B Schools of India are one of the most tough to get in B-Schools of India. After appearing in the most competitive exam CAT (Common Entrance Test), students gear up to learn market and business traits in the B-Schools which is even more challenging. As the study was on selected IIMs of the country to make students and campus people more aware about student's wellbeing, students tend to take up their health secondary; hence scholar has taken up the study with a purpose of assessing the status of their wellbeing and healthy lifestyle so that later stage in life the healthy lifestyle become part of their day to day lifestyle. It has also been observed by the various MNCs of the India and foreign countries that employer spend some head of money to decrease the absenteeism amongst the employers and encourage them to take up physical activity at workplace, our study revolves around the same aspect of wellness Lifestyle. An advocacy paper by NHSRC (2016) suggested "India should increase the percentage expenditure of GDP on healthcare from the current 1.1% to at least 2.5-3 % by 2025, with an increased focus on preventing and treating NCDs as majority of the Indians will be effected by lifestyle related diseases." Wellness Lifestyle is not a common term in India, but lot of MNCs are investing in it to reduce absenteeism and increase productivity, this study is Investigating Wellness Lifestyle of students of different IIMs of India who will be joining this healthy or so called unhealthy workforce. Exercise Prescription is becoming a vital aspect in a doctors' life, Doctors themselves are keen to cure patient with less medicine but make them more reliant on exercise.

Joel, Joseph and Olayinka¹ have done a study in Ekiti state in Nigeria about the Lifestyle assessment of Tertiary Institution Ekiti State Nigeria. A total of 521 participants were selected for the study by using multistage sampling technique. A modified wellness lifestyle questionnaire was used for data collection. 1) The three hypotheses formulated (as null hypotheses) that gender of respondents will have no significant influence on lifestyle habits. 2) Residence (on-campus & off-campus) of respondents will have no significant influence on lifestyle habits, lastly (3) demographic factors such as age and sex of respondents will have no significant influence on lifestyle habits of the students. The participants were stratified by their gender (either male or female) and by residence they live in (on-campus or off-campus). A total of 250 male and 271 female respondents participated in the study.

The researchers adapted wellness lifestyle questionnaire developed by Hoeger and Hoeger (2002) which is also been used for present study with minor modification in it. The questionnaire items were modified to suit the cultural environment in the tertiary institutions of Nigerian students. The questionnaire consisted of two sections; the first part dealt with demographic data such as gender, age and residence of respondents and second section was designed to assess the current lifestyle habits of respondents. The wellness lifestyle questionnaire consisted of nine topical areas which included health related fitness, nutrition, chemical avoidance, stress management, personal hygiene/health, disease prevention, emotional well-being, personal safety and environmental health/protection. The 36-item questionnaire was assessed on a likert five-point scale (ranging from 5 –

always, to 1 = never). A pilot study was done to establish reliability of the questionnaire. The reliability coefficient was 0.85 at 0.05 level of significance, which made this questionnaire reliable. Descriptive and inferential statistics were applied; ANOVA and T-test were applied on gender and On-and Off Campus respondents.

The analysis of the demographic variables revealed that 205 respondents were from Federal Polytechnic institute, 196 of the respondents were from the State College of Education , while 196 respondents of State University. Also, 250 (48%) of the respondents were males while 271 (52%) respondents were females. The data showed that 254 (48%) respondents were on-campus while 267 (51.2%) were off-campus students. The t-test analysis resulted that there was no significant difference between male and female respondents in all the zone/area of lifestyle habit factors in this study except in personal hygiene and health where the, "t" value of 450 was established concluded as the t-calculated value was greater than the tabulated value of 1.96 at 0.05 level of significance, Hence, the null hypothesis was rejected with personal hygiene and health factor alone. Thus, male (X = 12.13) respondents in this study practiced personal hygiene and health higher than the female (X = 11.98) participants. Residence (on-campus & off campus) of respondents will have no significant influence on wellness lifestyle habits of the respondents. Two-way Analysis of Variance was further computed to find out gender of respondents (Factor A and type of residence (Factor B) which was main effects was not statistically significant. Also, there was no significant gender by residence (A x B) interaction. In other words, the statistical analysis showed that there was no significant influence of gender and residence of respondents on wellness and lifestyle habits.

The findings revealed that in general the health practices of respondents were very low. It was further analysed that the mean scores for both male and female respondents in each of the areas measured did not meet the desirable healthy practices as recommended for wellness status set by the Hoeger such as Satisfactory, Good and Excellent (Hoeger and Hoeger, 2002). Also, it is interesting to note from the result that the current health practices of respondents were extremely low in disease prevention, personal hygiene, chemical avoidance and nutrition. Findings of the study seem to suggest that the respondents were at a greater health risks as far as wellness Lifestyle is concern. A possible explanation for the poor healthy habits is that respondents in this study might not be aware of the risks inherent in unhealthy lifestyle habits. The finding of the study further states that there is significant impact on wellness and lifestyle health practices. No previous study were as important as these factors endeavoured to investigate the extent to which such factors could influence wellness and lifestyle habits of respondents from Ekiti State of Nigeria. Another Case study² added to this report was from England for active transportation by Bicycle an initiative taken by an NGO named Sustrans, the organisation has taken calculative measures like building a national cycle network consist of 20,000km pathways in the form of National Cycle Network (in 2006), which aimed to increase the bicyclers from 2% to 20% , coordination from local authority and other administrative measures have been taken up to make traffic system bicycle friendly , encourage school children to travel by bicycle, In particular, there been significant increases in cycling in London: the number of people entering central London by bicycle during the weekday morning peak grew by 123% between 2001- 2009 , and by 15% in 2008-09, the Sustrans have supervised project from 2000, they have found significant changes like around 407 million people have travelled on the pathways made by NGO (Sustrans) in 2009 with an

estimate benefit from cycling of 288 Million euro, also leads to environment benefits as reduced emission of CO₂ by over 600,000 tonnes a year.

A study was done by three eminent researchers namely as Manjusha, Phyllis, Holcomb³ from Eastern Kentucky University. The prevalence and forthcoming challenges in the form of health hazards such as smoking, lack of exercise, and drinking, with deteriorated levels of social and emotional awareness and help. The study taken by the researchers examines self-reported health behaviours (tobacco use, alcohol use, nutrition, exercise, emotional health, safety, and disease prevention) among college students and elucidates the association between health behaviours and self-reported overall health. The authors have hypothesized that self-reported positive practice in one health behaviour is effective positive practice in at least one other behaviour. On the basis of study done by U.S. public health service, Same wellness assessment intervention was administered on south-eastern university at starting of each semesters (Total of 4 semester) (2006-2008), Sample taken under investigation was 276 undergrads students who enrolled in a general education health course and included 2-5 questions for each health behaviour. Total scores for 7 health areas were categorized into 3 groups: 0 was scored for living risky lifestyle, 1-5 for somewhat risky lifestyle, and 6-10 for healthy lifestyle. After analysis and conclusion stated students who self-report healthy practices such as nutrition, emotional health, and disease prevention, in one area also report healthier practices in at least one other area which was supported as per the hypothesised in the study, Significant associations between self-reported healthy behaviours and healthy behaviours in multiple other areas included nutrition, emotional health, and disease prevention. Students reporting positive disease prevention practices also reported significantly healthier practices with alcohol usage, nutrition, emotional health, safety, emotional health and overall health status ($p < 0.05$), The study concluded that more in-depth research is need of the hour to bring out healthy practices in present college generation which will also determine the exact contribution of each positive behaviour to the overall construct of wellness.

Monira et.al,⁴ a study was done by the experts of department of Pharmaceuticals systems and policy in West Virginia University. The main objective of the study was to examine the association between type of multimorbidity and CAM (complementary and alternative medicine). The study was a cross sectional study with the sample size characterized as at least two chronic physical illness or a combination of any physical condition and any mental illness from the retrospective data of National Health Interview Survey done in the year 2012, National Health Interview Survey is an annual survey of household in the US. The sample size was taken from family core, Adult core, and Adult complementary and alternate medicine supplement. The age group consist of 21> adults and reportedly having minimum one chronic physical condition and atleast one mental condition. The total sample of 13,246 adults had been taken under examination. In the study CAM was derived from a set of 18 variables such as Homeopathy, Acupuncture, naturopathy, Ayurveda, Manipulative and body based therapies which included in Chiropractic or osteopathic manipulation, massage, Feldenkranis, Alexander technique, trager Psychophysical integration craniosacacral therapy, pilates, biofeedback, hypnosis,yoga,tai chi, qi gong, energy healing therapy and chelation therapy: the participants have ever used above mentioned considered as CAM were categorized „in ever used CAM“ Adults who have never used any of the CAM were categorized „never used CAM“ in last 12 months and finally added to the sample. Based on the modified version of

Anderson Healthcare Utilization Model the researchers have utilized on the basis of Gender (Men and Women), Race/ Ethnicity(White, African /American, Latino, other races,22-39 Years,40-49 years,50-64 years,65 and older, Marital Status (Married, Wid/Div/Sep. Unmarried, Education Level (LT. High School, GT High School), Poverty Status (Poor, Near Poor, Middle income, High Income Missing),Insurance(Insured, Uninsured), General Health (Excellent Very Good, Fair, Poor),Functional Limitation (Y/N), BMI (UW,NW,OW,O,M), Smoking Status(Never Smoke, Past Smoker, Current Smoker) Alcohol Drinker(Lifetime abstainer, Former Drinker, Current Drinker, Missing), Physical Activity (Daily weekly, Monthly /Yearly, Unable to do so, Missing) Region(Northeast,Midwest,South,West). Percentage of CAM users (type of CAM by multimorbidity) were $N= 13,246$. All Multimorbidity which was further divided into PI (and MI (Mentally ill), Physically $N= 6212, 7,034$ weighted percentage ever used CAM 48.2%, 51.8%. The participants who have ever used CAM both PI & MI $N=2,439$, 57.1%, never used CAM, $N=1, 931$, with weighted 42.9%, only Physically Ill $N= 3, 773$, 44.1%, Never Used CAM were $N =5,103$, 55.9% The objective of study was to examine the association between the type of multimorbidity and CAM, after assessing on the basis of Gender,Race/Ethnicity, Marital Status, Poverty status, BMI,Smoking Status, Alcohol Drinking and lastly Regionally the study concluded that sample of 48.2% adults ever used CAM and 23.6% have used CAM in past one year, The sample with multimorbidity(mentally and physically ill) more likely to use CAM as compare to adults only with physical illness.

Parks, Kizzy. M., & Steelman, Lisa. A⁵ have done meta-analytical studies that examined the effects of participation in an organizational wellness program (fitness or comprehensive) on absenteeism and job satisfaction of the employees which concluded that participation in an organizational wellness program was associated with decreased absenteeism and increased job satisfaction amongst the employees of the organization. The type of wellness program (fitness only or comprehensive) and the methodological rigor of the primary studies were examined as moderators; however, no moderating effects were found. These results provide some empirical support for the effectiveness of organizational wellness programs.

American Heart Association have issued and published a policy statement in their reputed journal AHA titled „Worksite Wellness Programs for Cardiovascular Disease Prevention“ done by Mercedes Carnethon et.al⁶. ,the extracted summary of the policy laments that a ⁽¹⁾ successful worksite wellness programs engages employees in activities that maximize their optimum caliber for their health and well-being, ⁽²⁾ make them grow rapidly in response to their perceived value, and to make their presence productive for the employer or organization. ⁽³⁾ Government agencies could have a substantial influence by supplementing private sector investment in large-scale, objective, longer-term studies on programming and outcomes research to better inform the development, implementation, and evaluation of worksite wellness programs. ⁽⁴⁾ Government agencies should also model worksite wellness programs and serve as laboratories for testing research-based lifestyle interventions. ⁽⁵⁾The health outcomes for high-risk and health-disparities populations should be particularly scrutinized. ⁽⁶⁾Another excellent initiative was taken by Centers for Disease Control and Prevention recently developed the Healthy Workforce Initiative, which was dealing with Worksite wellness program in state and federal Govt. in United Sates make Government and private sector employees equally engaged and participative in the wellness programs. ⁽⁷⁾Federal and state governments should encourage employers to offer

programming by providing tax incentives for employers who implement comprehensive worksite wellness programs. The policy also stated the importance of making participation intact and persistent, most well-designed and well-intentioned worksite wellness programs are ineffective if employees do not participate. Employers should seek to reduce or eliminate barriers that discourage use of worksite wellness programs to increase participation and employee engagement. One of many obstacles for programs to overcome is the low participation rate among those most likely to have greater health risk. Offering health promotion services such as fitness centers, weight loss programs, and exercise classes on site and providing healthy vending and food choices throughout the workplace environment are small steps. More innovative and forward-thinking employers might consider providing a convenient time and location for exercise and wellness programs during the workday and offering employer-provided paid time off during the workday for exercise, health screenings, or prevention/wellness programs. Programs that combine individual and organizational changes boast the greatest success rates in part because combined approaches engender a reciprocal relationship in which employees have a perception that their needs are valued. An Institute of Medicine exploration of the design of worksite health programs has embraced this kind of comprehensive approach, the National Institute for Occupational Safety and Health recommendations for effective worksite programs endorse comprehensive efforts that combine health protection and promotion. However, continued research is needed to determine the effectiveness of comprehensive programs compared with programs that provide only selective services. Additionally, more work is needed to assess the effectiveness of programs on hard outcomes such as. An effective worksite wellness program can attract exceptional employees, improve on-the-job decision-making and work efficiency, enhance employee morale and organizational commitment, decrease turnover, and reduce organizational conflict. Despite the numerous and varied documented benefits of incorporating programming to promote healthy lifestyles in the workplace, such programming has not achieved adequate penetration into the workplaces of America.

The purpose of the study was to assess the current wellness lifestyle habits of students of IIM-Ahmedabad, IIM-Bangalore, IIM-Calcutta,, IIM-Indore, IIM-Kozhikode, IIM-Lucknow .

2. METHODOLOGY

2.1 Selection of the subjects

A sample of 100 from each IIM Ahmedabad, IIM-Bangalore, IIM-Calcutta, IIM-Indore, IIM-Kozhikode, IIM-Lucknow have been chosen

2.2 Tool Used

Werner Hoeger"s wellness Lifestyle questionnaire was used in which variable such as Health Related Fitness, Nutrition, Avoiding Chemical Dependency, Emotional Wellbeing, Stress Management, Personal Health and Hygiene, Disease Prevention, Personal Safety Environment Health and Protection with each having Five Point Likert scale was used and scored from Always to Never (5 to 1). Scoring of the questionnaire was rated as Excellent, Good and Needs Improvement. As we had 4 questions in each segment carrying 5 marks each the above ≥ 17 will be excellent, 13-16 will be categorized as good and lastly ≤ 12 will come under Needs Improvement rating.

2.3 Collection of Data

The data was collected through online- survey(Google drive) which made her to do minute changes(post pilot study) in the Questionnaire i.e confidentiality note, taking up questionnaire in Indian context, and personal credential of the students. Scholar had taken selected IIMs of the country such as IIM Ahmedabad, IIM-Bangalore, IIM-Calcutta, IIM-Indore, IIM-Kozhikode, IIM-Lucknow.

2.4 Statistical Procedure

Descriptive Statistics variable wise has been presented with graphical presentation. Overall Scoring was put up in Pie-Diagram.



FIG.1.1- GRAPHICAL PRESENTATION OF VARIABLE WISE ASSESSMENT OF ALL (N=600) 600 STUDENTS OF IIM-AHMEDABAD, IIM –BANGALORE,, IIM-CALCUTTA, IIM-INDORE, IIM-KOZHICODE, IIM-LUCKNOW.

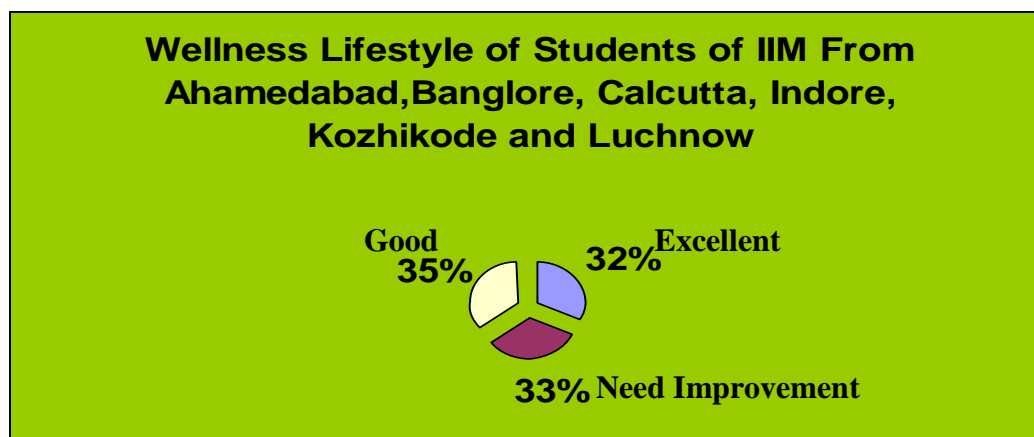


FIG.1.2- SHOWS THE MEAN OF WELLNESS LIFESTYLE FACTORS SCORING OF ALL THE STUDENTS (N= 600) OF IIMS (IIM-AHMEDABAD, IIM –BANGALORE,, IIM-CALCUTTA, IIM-INDORE, IIM-KOZHICODE, IIM-LUCKNOW) IN INDIA

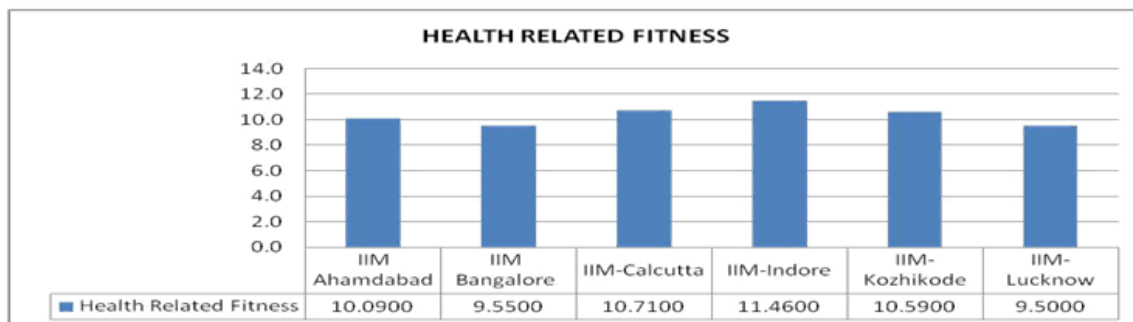


Fig.2.1- Health Related Fitness of selected IIMs of the country

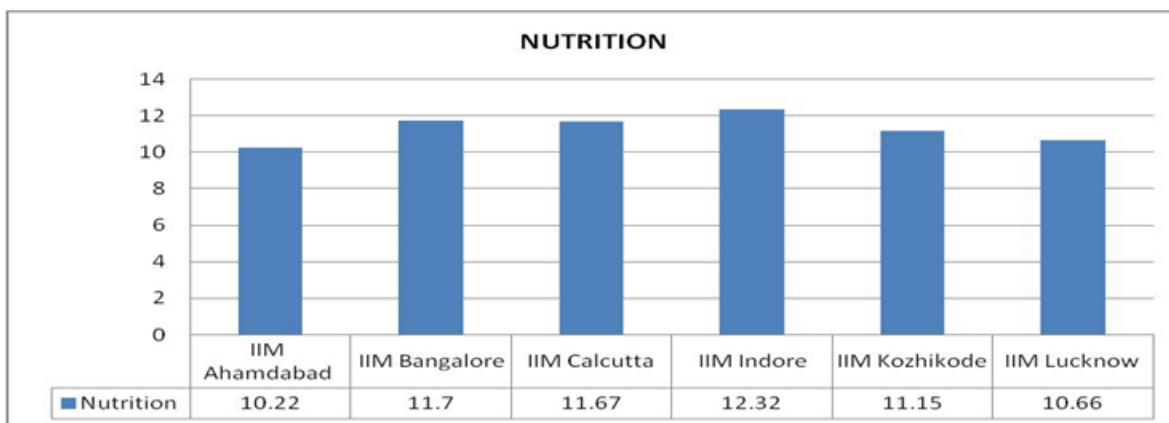


Fig.2.2- Nutrition level of selected IIMs of the country

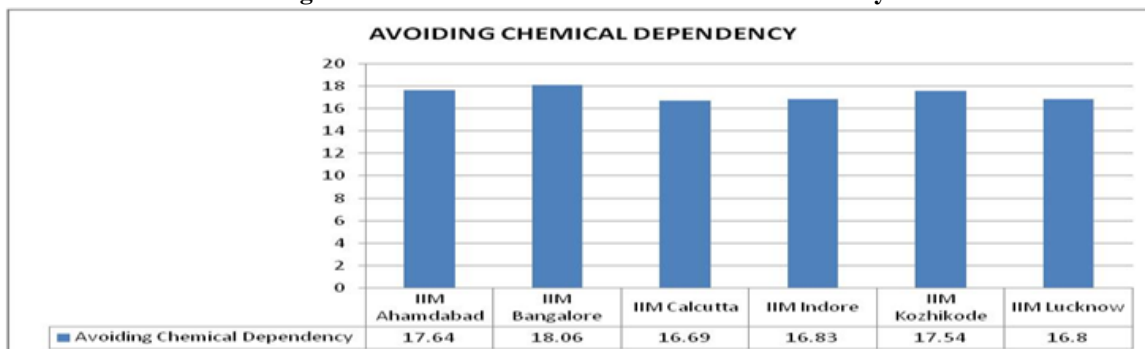


Fig.2.3- Avoiding Chemical Dependency level of selected IIMs of the country

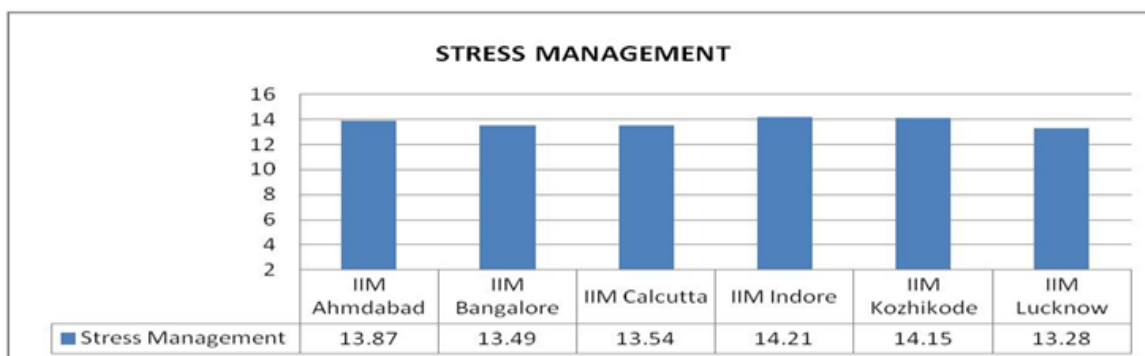


Fig.2.4- Stress Management level of selected IIMs of the country

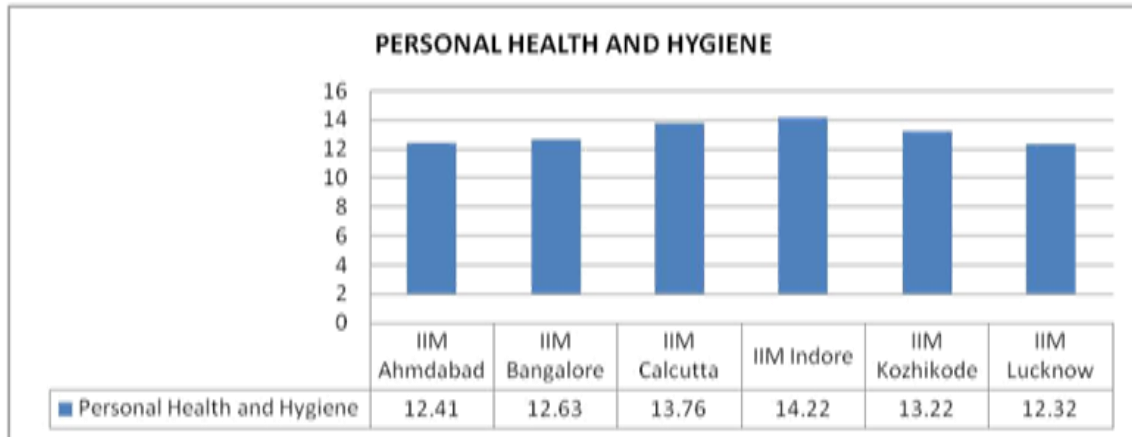


Fig.2.5- Personal Health &Hygiene level of selected IIMs of the country

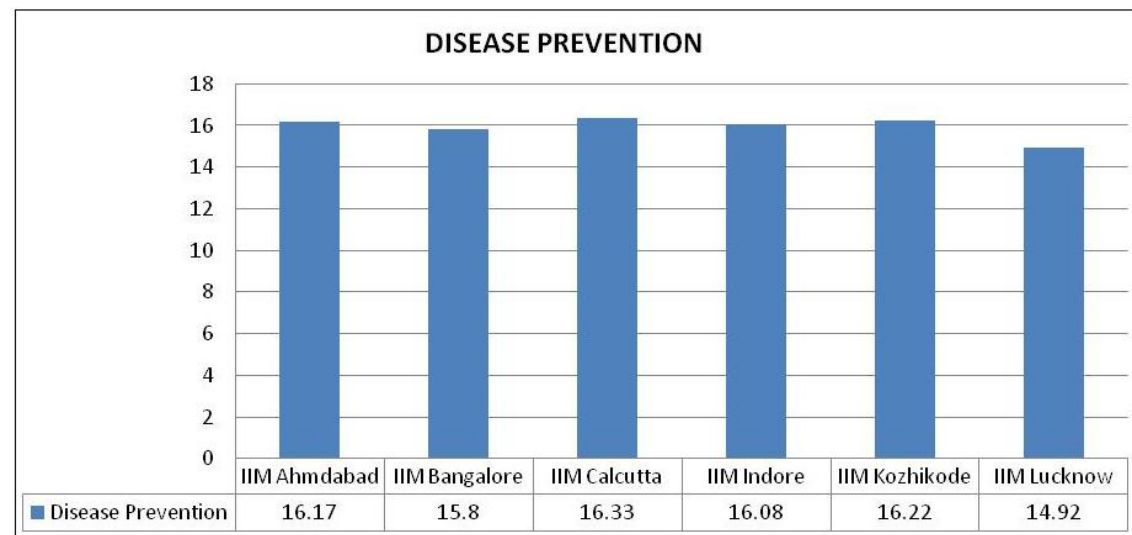


Fig.2.6- Disease Prevention level of selected IIMs of the country

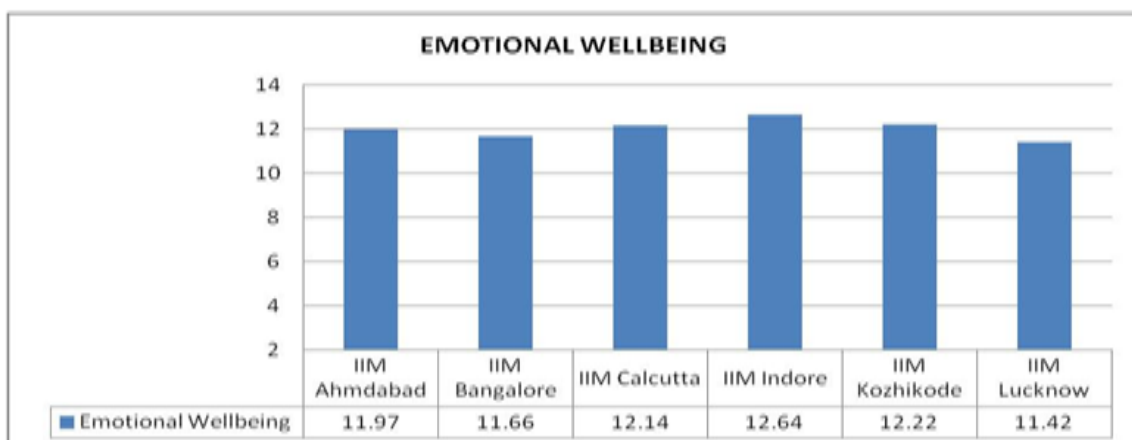


Fig.2.7- Emotional Wellbeing of selected IIMs of the country

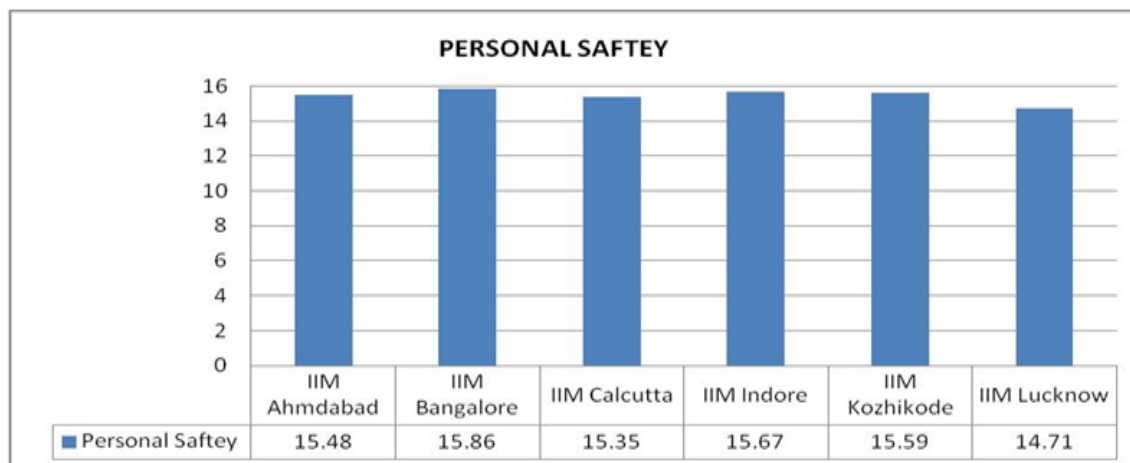


Fig.2.8- Personal Safety of selected IIMs of the country

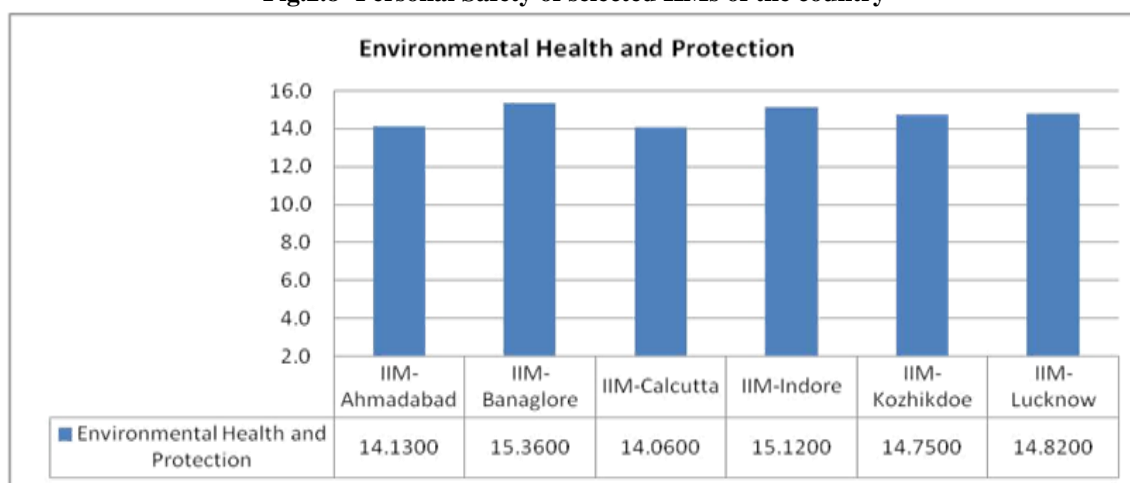


Fig.2.9- Environmental Health & Protection of selected IIMs of the country

3. RESULTS AND DISCUSSION

As the data clearly indicates that in all nine variables different IIMs have scored differently, As far as Health Related Fitness concern IIM-Indore scored best amongst all followed by IIM Calcutta, IIM Kozhikode, IIM Ahmedabad, IIM-Bangalore and lastly IIM luck now possible reason would be If we closely observe the order relatively urban cities are aware about their health related fitness thus scored at the higher side. On the basis of the scoring method overall mean (M=10.31) of all the IIMs are falling under „Needs Improvement“ Category.

Nutritional level has been maintained by all the students of selected IIMs of the country and students are equally well in balancing their diet and eating in right proportion. As per the result IIM Indore tops the chart followed by IIM-Bangalore, IIM-Calcutta, IIM-Kozhikode, IIM-Lucknow and at the end IIM-Ahmedabad. On the basis of the scoring method overall mean (M=11.28) of all the IIMs are falling under needs „Improvement Category“.

Avoiding Chemical Dependency IIM-Bangalore students secured the top most position followed by IIM-Ahmedabad, IIM-Kozhikode, IIM-Lucknow and lastly IIM-Calcutta. Overall mean (M=17.26) was falling under „Excellent“ category as per given by W.K.Hoeger’s scoring method.

Stress Management – Students of most of the IIMs have filtered with competitive exam CAT which makes them more stress bearing brains perhaps, As far as results were concerned the IIM-Indore students are efficient in tackling day to day stress, followed by IIM-Kozhikode, IIM-Ahmedabad, IIM-Calcutta, IIM-Bangalore and lastly IIM-Lucknow. Overall mean (M=13.75) Score made six selected IIMs fall under „Good“ Category as per the given therefore there is room for improvement with counselling and proper channelization of extracurricular activities which help them to manage stress better.

Personal Health & Hygiene- IIM-Indore scored best amongst selected IIMs whereas IIM-Calcutta was second best followed by IIM-Kozhikode, IIM-Bangalore, IIM- Ahmedabad, IIM-Lucknow. Overall (M=13.09) IIMs are statistically falling under „Good“ category, which clearly indicates that students can improve in Personal and Health & Hygiene by improving their hygiene habits.

Disease Prevention-IIM-Calcutta tops the chart possibly due to their co-ed hostel facility. IIM-Kozhikode secured second followed by IIM –Ahmedabad, IIM-Indore, IIM-Bangalore and lastly IIM-Lucknow. Overall descriptive statistics says that studied IIMs have coming under (M=15.92) under „Good“ category but can achieve excellent If work in educating about preventive measure and healthy practices under professional guidance.

Emotional Wellbeing - As mean states that IIM-Indore students found relatively better in emotional wellbeing variable followed by IIM-Kozhikode and IIM-Calcutta.IIM-Ahmedabad, IIM-Bangalore and lastly IIM Lucknow stood at the end. Overall mean (M= 12.00) falling under „Needs Improvement“ Category

Personal Safety – The factor seldom use in India as over population and unsafe practices make things worse. The results showed that IIM-Bangalore ranked first followed by IIM-Indore, IIM-Kozhikode, IIM-Ahmedabad, IIM-Calcutta, IIM-Lucknow which shows IIM-B students/ possibly management are equally aware about their safety. Being an urban city makes things more leveraged to practice lifestyle change. Overall average score (M=15.44) make all the IIMs falling in „Good“ category which is pretty decent but have room of improvement as far as personal safety are concern.

Environmental Health &Protection- IIM-Bangalore tops the chart which is situated in pleasant weather of state of Karnataka, IIM students keeps their environment neat and clean followed by IIM- Indore, IIM-Lucknow, IIM-Kozhikode, IIM-Ahmedabad, IIM-Calcutta at the end. The environmental awareness habits can be adopted by rest of the IIMs to spear aware and inculcate sensitivity about natural surroundings. In spite of being situated outskirts of respective cities all the IIMs (M=14.69) are falling under „Good“ category which states that better practice and awareness or education can make things better overall for the environment.

4. CONCLUSION

A constructive curriculum is needed with the help of Physical Education professional to inculcate overall wellbeing from academic span life onwards, So that students sustain same lifestyle for rest of their lives rather relying more on medical cover. By referring the results of the study the studied Institutes need a set curriculum with Professional personnel of Physical Education who can educate students of taking preventive measures by sustaining healthy lifestyle rather after being affected. Indian education system needs to initiate the Physical Education curriculum for Under graduation and Graduation level in all the premiere and non-premiere Institutes and Universities. Overall studied IIMs need to work on their wellness Lifestyle and a constructive curriculum is needed with professional guidance. Most of the Institute lacks permanent Physical Education or Sports personnel which might be making students confined to moderate physical activities. The Institute need better sports eco system to make students more fit and market ready (Physically &mentally) under professional supervision.

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ANTHROPOMETRIC CHARACTERISTICS OF ALL INDIA INTER-UNIVERSITY LEVEL MALE NETBALL PLAYERS

Devarishi Kumar Chaubey¹ Dr. Sudhir Rajpal² Dr. Rajkumar Sharma³,

Affiliations:

1. Ph. D Scholar (Physical Education), Dr. C. V. Raman University, Kota Road, Bilaspur (Chhattisgarh) India, Mobile:+91-9770764817, E-mail-dchaubey47@gmail.com
2. Head, Physical Education, Dr. C. V. Raman University, Kota Road, Bilaspur (Chhattisgarh) India,
3. Chief Coach (Gymnastics), Sport Authority of India, STC Extension Dhar, Malhar Ashram, Rambagh, Tilak Path Road, Indore (M.P.) India. Mobile:+91-9229144090, E-mail:sharmagym59@yahoo.co.in

ABSTRACT

Obesity increases the risk for many chronic diseases among human beings. Waist to hip ratio is an important tool to determine the overall health risk. The more weight around their waist is related to heart disease and diabetes than those with weight around their hips. One of the simplest method of measuring body fatness is calculating waist- hip ratio or relationship between waist circumference and hip circumference. The purpose of the study was to investigate the anthropometric Characteristics of All Inter-university level male Netball players. For the purpose of study, One hundred and eighty (N=180) adult male Netball players from seventeen universities from different state of India were selected for the purpose of study. The Age, Height, Weight, BMI, Waist Circumference, Hip Circumference, Waist to Hip Ratio (WHR) and Waist to Height Ratio (WHtR) of Inter-university level male netball players were measured for this investigation. Descriptive statistics was computed for collected data. The results of the study revealed that all the anthropometric characteristic examined of the netball male players were found healthy, without any cardiac risks and controlled.

Keywords: Inter-university level, Netball player, Obesity, health, anthropometric parameters

1. INTRODUCTION

Body Mass Index (BMI) is an easily-administered and inexpensive tool to monitor weight status. Although it is commonly used in a health-setting to classify humans as underweight, normal weight, overweight and obese (WHO, 1995). It's application in sport populations has been questioned, because it is associated with fat mass, as well as with fat free mass (Ode , et.al., 2007). It can also evaluate athlete's body weight for a given stature and thus contribute to weight control.

In studies concerning health risk, body mass index (BMI) expressed as the ratio of weight to squared height and other easily measured indices of fatness, including waist circumference (WC), waist to hip ratio (WHR) and waist to height ratio (WHtR), are used and recommended by the World Health Organization (WHO, 2011).

Obesity increases the risk for many chronic diseases among human beings. Waist to hip ratio is an important tool to determine the overall health risk. The more weight around their waist is related to heart disease and diabetes than those with weight around their hips. One of the simplest method of measuring body fatness is calculating waist- hip ratio or relationship between waist circumference and hip circumference.

According to the University of Maryland Medical System, the lower waist- hip ratio (WHR) is better and a wider at the waist (apple-shaped body) is likely to be more prone to health problems than a wider at the hips (pear-shaped body). WHR ratio of 0.9 or less is considered safe and a ratio of 1.0 or higher is considered at risk for overweight-associated health problems. It is a useful measure of fat distribution.

One limitation of BMI is that it does not directly measure body composition (water, muscle, bone and adipose tissue within the body) [CDC (2013), Esco et.al. (2011), Nevill, et.al. (2012) & Wellens et.al. (1996)]. Since BMI does not measure body composition there have been some concerns that BMI may misclassify different groups of people as overweight or obese, especially those with a greater composition of muscle and bone mass Esco et.al. (2011).

The purpose of the study was to investigate the anthropometric Characteristics of All Inter-university level male Netball players

2. METHODOLOGY

2.1 Selection of Subject:

For the purpose of study, One hundred and eighty (N=180) adult male Netball players from seventeen universities from different state of India were selected for the purpose of study. All the netball male players were members of respective university teams of their own state, participating in All India Inter-university male netball competition during 2016-17 and volunteered to participate for this study.

2.2 Selection of Variables

The Age, Height, Weight, BMI, Waist Circumference, Hip Circumference, Waist to Hip Ratio (WHR) and Waist to Height Ratio (WHtR) of Inter-university level male netball players were selected for the purpose of study.

2.3 Instrumentation:

All participants were contacted at the site of their staying place during competition and underwent for the measurement of anthropometric variables. Oral and written informed consent was taken from all the participants, coaches and managers of the respective teams before testing them.

Each measurement was repeated twice and in case of discrepancy was repeated for a third time. BMI was calculated from body mass and body height (kg/m²). WHR and WHtR were also calculated. Waist - hip circumference was calculated from waist girth divided by the hip girth. (waist to hip ratio = Gw / Gh, where Gw = waist girth, Gh = hip girth).

This measurement is used to check for athletic fitness and weight gain. It is also used in anthropometric measures of skeletal muscle mass and to estimate the amount of muscle protein in your body. Muscle circumference can also help to determine the nutritional intake of an athlete.

2.4 Criterion measures

After all outer clothing and shoes were removed, body weight and height were measured to the nearest 0.1 kg and 0.1 cm, respectively, using standardized equipment. WC was measured to the nearest 0.1 cm at the level of the iliac crest while the subjects were at minimal respiration. Hip circumference (HC) was measured to the nearest 0.1 cm at the level of the maximum extension of the buttocks in a horizontal plane. Both measurements were performed using non-stretchable tape.

3. RESULTS

To assess the Health-related physical fitness parameters and anthropometric characteristics of male school children, means and standard deviations were computed. SPSS software 16.0 was used for the computation of collected data.

**TABLE 1
DESCRIPTIVE STATISTICS OF ANTHROPOMETRIC CHARACTERISTICS OF ALL INDIA
INTER-UNIVERSITY LEVEL MALE
NETBALL PLAYERS**

S.NO.	Variables	M±SD	Standard Error	Variance
1.	Age (Yrs)	20.61 ±1.87	0.38	3.49
2.	Height (cm.)	177.14 ±8.89	0.66	79.01
3.	Weight (kg.)	66.33 ±10.27	0.76	105.37
4.	BMI (kg/m ²)	20.90 ±3.31	0.244	10.92
5.	Waist Circumference (Cm.)	81.70 ±7.57	0.56	57.29
6.	Hip Circumference (Cm.)	91.33 ±7.27	0.54	52.89
7.	Waist to Hip Ratio (WHR)	0.87±0.10	0.007	0.011
8.	Waist to Height Ratio (WHtR)	0.46±0.06	0.004	0.003

Anthropometric characteristics for participants are shown in Table 1. Subjects were 180 Indian Netball male players age = 20.61 ±1.87, range 18.5–54.7 kg/m². Height=177.14 ±8.89, weight=66.33 ±10.27, BMI =20.90 ±3.31 & BMI range, Waist Circumference =81.70 ±7.57 & range, Hip Circumference= 91.33 ±7.27 & range, Waist to Hip Ratio= 0.87±0.10 and range, and Waist to Height Ratio = 0.46±0.06 and range of participants were found normal.

4. DISCUSSION

Many researchers have conducted the study on body mass index of athletes and non-athletes and presented the different statements after investigation. BMI is weakly correlates with the percentage of body fat in body builders (Jacobson, Cook and Redus, 2003). BMI is a poor index of body fatness in athletes representing different sports, since subjects with a low percentage of body fat presented BMI values up to 33 (Garrido-Chamorro et. al., 2009).

Mazic et. al. (2009) demonstrated that the more than one-fourth of basketball players despite low body fat were classified as overweight due to BMI higher than 25. BMI-based equations for predicting percent of body fat in female collegiate athletes are not appropriate for predicting individual body fat (Esco, Williford and Russel, 2011) . The BMI as a measure of body fat is inappropriate in adolescent athletes due to incorrect classification of lean subjects as overweight or obese (Etchison et.al., 2011).

Body Mass Index (BMI) is widely used as a predictor of obesity, which has been linked to serious health risks, such as developing hypertension, high cholesterol, diabetes and cardiovascular disease [CDC (2013), Esco et.al. (2011), Mazic et.al. (2009) and Pontaga (2013)] BMI doesn't differentiate between muscle mass and fat mass, it has been suggested that BMI is not an accurate tool to use when predicting obesity in athletes [Etchison et.al. (2011), Mathews et.al. (2011), & Nevill, et.al. (2012).]

In this study, All India level netball male players were found healthy and without and cardiac risks because the Waist to Height Ratio was less than 50 (WHtR < 0.5) was Considered healthy for both men and women worldwide. 0.87 ± 0.10 was less than (WHR < 1.0) was Considered healthy for both men WHO indicated the the BMI 18.5–24.9 kg/m² was found under normal range. Height and weight were found according to their age.

5. CONCLUSION

All the anthropometric characteristic examined of the netball male players were found healthy and without and cardiac risks and controlled.

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A COMPARATIVE STUDY TO ASSESS LEVEL OF OCCUPATIONAL STRESS AMONG LIBRARIANS WORKING IN GOVERNMENT AND PRIVATE COLLEGES OF BHOPAL

Rekha Marskole¹, Dr. Arun Modak²

Affiliations:

- ¹ Research Scholar, Shri Satya Sai University of Technology & Medical Science, Sehore
- ² Dr. Arun Modak, Asst. Professor, Department of Nursing Science, Shri Satya Sai University of Technology & Medical Science, Sehore

ABSTRACT

The purpose of the study was to compare and assess the occupational stress among librarians working in private and Government colleges of Bhopal (M.P.). For this purpose, one hundred librarians at various colleges were selected. Further they were divided into two groups where 50 librarians from government colleges and 50 librarians from private colleges were taken. Occupational Stress Index (O.S.I) by Dr. A K Shrivastava & Dr. A P Singh was adopted in the study to measure the level of stress among the librarians. To find out the level of occupational stress descriptive statistics mean, standard deviation and 't' test were employed. The results of the analysis of data revealed that librarians from private colleges of Bhopal had more occupation stress when compared with librarians from government colleges. from this study. Highly significant difference was also observed between librarians of private and Government college.

Keywords: Occupation, Stress, Librarians, Government and Private Colleges

1. INTRODUCTION

Stress is an unavoidable phenomenon in human life. Though the type of stress may differ but almost any aspect of life can lead to stress, be it lack of friends, lack of money, unemployment or even employment. Rapid industrialization, increasing urbanization and receding support over the last few decades have contributed to rise in stress level. Few years ago, it was not considered as an important public health problem in many countries but recently stress has gained worldwide attention due to its potential hazards.

Stress is generally recognized as an unpleasant emotional state. According to Kyriacou & Schutcliffe (1978), stress is result of prolonged pressures that can't be controlled by the coping strategies that an individual has. Olson, et. al. (1989) defined stress as "a state of tension that arises from an actual or perceived demand that calls for an adjustment or adaptive behaviour". Stress can attribute to poor performance, absenteeism, job dissatisfaction, accidents and various health problems (Keiper & Busell, 1996). Distress can lead to hypertension, diabetes mellitus, stroke and ulcers among other illness.⁴

Occupational stress: a worldwide phenomenon Occupational stress has been considered as leading stressor among adults.⁴ According to International Labour Organization (ILO), occupational stress affects all countries, all professions and all categories of workers. 52nd World Labor Report of 1993 identified occupational stress as one of the most serious health issues of the twentieth century⁶ while few years later World Health Organization (WHO) termed it as "World Wide Epidemic" (<http://www.stress.org>, 2008)

Occupational stress is defined by National Institute for Occupational Safety and Health (NIOSH, USA) as, "the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker" (<http://www.cdc.gov>, 2008). Occupational stress is also known as "job stress", "work related stress" or "work stress". World Health Organization defines this in a similar way as, "a pattern of reactions that occurs when workers are presented with work demands not matched to their knowledge, skills or abilities and which challenge their ability to cope" (World Health Organization (2007).

Occupational stress can lead to poor health make people feel sick, both at workplace and at home (<http://osha.europa.eu/en/topics/stress>, 2008). Usual early signs of job stress include headache, sleep disturbance, stomach upset and difficulty in concentration. Later this leads to major diseases like cardiovascular diseases (for example stroke, myocardial infarction) mental health problems (for example depression and burnout) and musculoskeletal disorders (for example involvement of back and upper extremity). In addition to physical and psychological signs and symptoms, occupational stress can also lead to behavioral symptoms like loss of appetite; increased consumption of alcohol, drugs and tobacco; isolation from others; poor job performance and change in close family relationships.⁵ Besides, workers who are stressed are more likely to be less productive, poorly motivated and less safe at work (Protecting Workers, 2003).

International Labour organization (ILO) considers occupational groups like policemen, prison officers, miners, doctors, nurses, teachers and journalists among the most stressful profession (<http://www.ilo.org>, 2008). Recently teachers' stress has received widespread recognition reflecting difficulties encountered by them (Boyle et. al., 1995). In the last two decades, there have been a lot of studies on occupational stress

among school teachers (Nhundu, 1999). According to Day (2000), “for many teachers, last 20 years have been years of survival, rather than development”.

1.1 level of Teachers Stress

Teachers all over the world are facing the problem of occupational stress, though extent of the problem varies. According to Kristensen (2005) about 10 to 40 percent of teachers are suffering under extreme stress or burnout, in European countries. Maslach et. al. (2001) argues for even higher stress level among teachers of Asian countries.

In Bhopal librarians are well qualified but some are not aware of library functions or IT services involved in libraries. The library professionals are frustrated due to low salary, status, and responsibility for the missing books, and these factors are discouraging librarians to provide better library services. Training and proper implementation of new technologies is very necessary for the development of libraries, it become the cause of occupational stress which is techno stress.

2. METHODOLOGY

2.1 Selection of Subject

For the purpose of the study, 100 librarians and asst. Librarians appointed at various colleges were selected and further divided into two groups where 50 librarians from government colleges were kept in first group and 50 librarians from private aided, and private unaided colleges were assigned as the second group.

2.2 Instrument

Occupational Stress Index (O.S.I) by Dr. A K Shrivastava & Dr. A P Singh was adopted in the study to measure the level of stress among the librarians.

2.3 Statistical Analysis

To estimate the level of occupational stress descriptive statistics mean, standard deviation and ‘t’ test were employed.

3. RESULTS

To find out the significance of difference between private and government colleges in their occupational stress, mean, SD and t-ratio were computed and data pertaining to this has been presented in Table 1 & 2 and depicted in figure 1.

TABLE 1
DISTRIBUTION OF SAMPLE ON LEVEL OF OCCUPATIONAL STRESS
ACCORDING TO THEIR EMPLOYMENT STATUS.

Sr. No.	Demographic Variable	Mean	SD	Level of Stress
1	Government	148.51	15.21	Moderate
2	Private	162.22	18.84	High

Above table 1 shows the level of stress among the librarians where librarians from government college had mean scores of 148.51 and were in moderate stress level and librarians from private colleges had mean score 162.22 which indicated high occupational stress among the librarians from private colleges .

TABLE 2
COMPARISON OF MEAN SCORES ON OCCUPATIONAL STRESS AMONG LIBRARIANS FROM PRIVATE AND GOVERNMENT COLLEGES

Type of College	N	Mean	MD	σ DM	t-ratio	P-Value
Private	50	162.22	16.22	2.34	6.93	0.000
Government	50	148.51				

Significant at .05 level

t.05 (98) = 1.98

From the above table 2 mean of occupational stress score of Librarians from private colleges mean is 162.22 and librarians from government colleges mean is 148.51. The difference between the two mean is highly ($t=6.93$) $df=98$, $P < 0.05$) and it is concluded that the librarians from Private colleges have significantly high occupational stress than the librarians from government colleges.

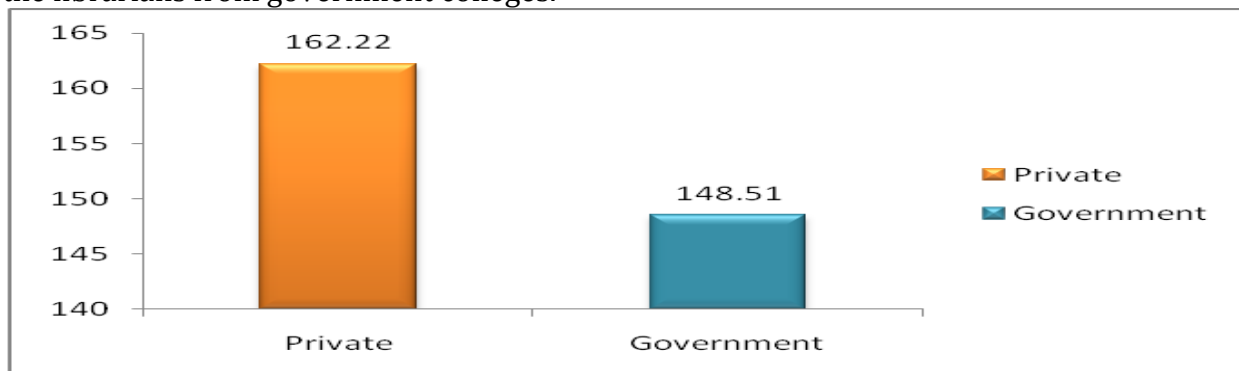


Figure-1: Mean scores of Occupational Stress of Librarians between Private and Government College.

4. DISCUSSION

Results of this study indicated that the librarians from private colleges of Bhopal had more occupation stress when compared with librarians from government colleges. from this study, It is suggested to provide necessary infrastructure facilities and training through seminars, workshops etc. to encourage librarians and to minimize the level of stress among the librarians from private colleges.

5. CONCLUSIONS

1. The occupational stress was found more in librarians of Private colleges than their counter parts.
2. Highly significant difference was observed between librarians of private and Government college.

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IMPACT OF YOGA ON FITNESS AND HEALTHINESS IN MODERN LIFE- A THEME

Kripesh Karmakar¹

Affiliations:

¹ Department of Physical Education, Maharaja Bir Bikram College under Maharaja Bir Bikram University, Agartala, Tripura West- 799004) , karmakark414@gmail.com

ABSTRACT

The conceptual background of yoga has its origins in ancient Indian philosophy. Yoga is popularly understood to be a program of physical exercises (asana) and breathing exercises and mental calmness. This thematic paper is showing the benefits of yogic practices for maintaining minimum level of fitness and healthiness of an individual as well as the society too. There is a saying that- 'sound mind creates sound body'. In today's modern world people are engaging in yogic activities to keep themselves fit and healthy. Yoga could be used to keep health and general fitness. Fitness and healthiness depends on our body status and health status which have an internal relationship. To achieve fitness and healthiness now-a-days people are relating yoga as medium of maintaining fitness and also to keep themselves healthy. This thematic paper is highlighting the necessity of yoga and its benefits for human being to be in a physically fit condition. Yoga is a procedure to control and advance the figure to increase great health, adjustment of mental status and self-acknowledgement. By practicing Yoga one can achieve expected level of physical fitness. Good health and fitness cannot be taken for granted, especially with today's sedentary and automated life-styles.

Keywords: Yoga, Fitness, Healthiness. Health Status, Body status

I. INTRODUCTION

In Indian religions, yoga is the means or techniques for transforming consciousness and attaining liberation from karma and rebirth. Over, 5000 years ago the concept of yoga was traced along with its benefits on fitness and healthiness. Dates back to history, provides us the information about yoga with its impact on fitness and healthiness with evidence. Later on yoga has further has divided into 5 main parts such as- Vedic Yoga, Pre-Classical Yoga, Classical Yoga, Post Classical Yoga and Modern Yoga. Yoga helps an individual to achieve an mental stability to have a better health and fitness too, because if someone is having a good health then automatically that individual will have good level of fitness in him.

Yoga is popularly understood to be a program of physical exercises (asana) and breathing exercises. In the words of one website, yoga is a program of physical postures designed to purify the body and provide physical strength and stamina required for long periods of meditation.

Yoga also helps in healing the mind, the healthy mind can lead to greater physical fitness, and a fit body leads to a healthy life. The effects of yoga on the mind and body's fitness are amazing. The muscles are exercised by stretching and relaxing. Breathing and blood circulation also improve. Relaxation of the body and its fitness are achieved by yoga through breathing techniques known as pranayama and strong but gentle Asanas (poses). In today's life yoga has been chosen as a complex spiritual process to have better healthiness.

This vigor could be enhanced by Yogic asana and Yoga is very beneficial for our physical fitness levels. Not only does it reduce stress levels, but it also makes our whole body fitter and ensures longevity. There is no denial of the fact that yoga and physical education attach importance by gaining the benefits of physical health, mental health, physical fitness and peace of mind through their regular practices. Physical education concerns the anatomical aspects of the physique with its physiological reactions for a given activity, the ultimate aim of which is to enjoy good health and optimum fitness. Yoga, Breathing and Meditative techniques are inter-related process to have a united body, mind and health.

Optimum level of health and fitness is the requirement of the day and the general requirement which talked most. Yoga could be used to keep health and general fitness. It is not a surprising matter that through yoga physical fitness can be achieve but, its depends upon the interest of an human being to maintain the fitness level and healthiness too.

1.1.1 Yoga:

Yoga can be defined as- "When the five senses, along with the mind, remain still and the intellect is not active, that is known as the highest state. They consider yoga to be the main frame for the restraint of the senses. Then one becomes un-distracted for yoga is the arising and the passing away". -Katha Upanishad.

1.2 Fitness:

Fitness is the ability to adapt to the demands placed an individual by their environment. Physical Fitness is just applying such a definition to the physical demands an individual's environment may place on them. -Daniel Andrews.

1.1.2 Healthiness:

Simply Healthiness can be defined as the state of being vigorous and free from bodily or mental disease. –Mnemonic Dictionary.

2. OBJECTIVES OF STUDY

- 2.1 Yoga brings healthiness and fitness on a common platform for the benefit of individual, society, community and also for the whole world.
- 2.2 Yoga objective is to maintain the minimum level of fitness and healthiness in everyone who are involved in yogic practices. Yoga’s objective in case of health is to achieve the fullest mental potentiality and satisfaction. Yoga’s objective was never to attain fitness but to develop and improve the capacity and skills which increases the fitness level. But health was the integral part of yogic science.
- 2.3 Health and fitness are never static in nature they always changes. Through continuous practice of Yoga one can overcome all difficulties, weakness and sickness to have a perfect health status. Yoga tries to balance fitness and healthiness.
- 2.4 Yoga can expands fitness levels of different systems of our whole body, through which one can increase his adaptability.

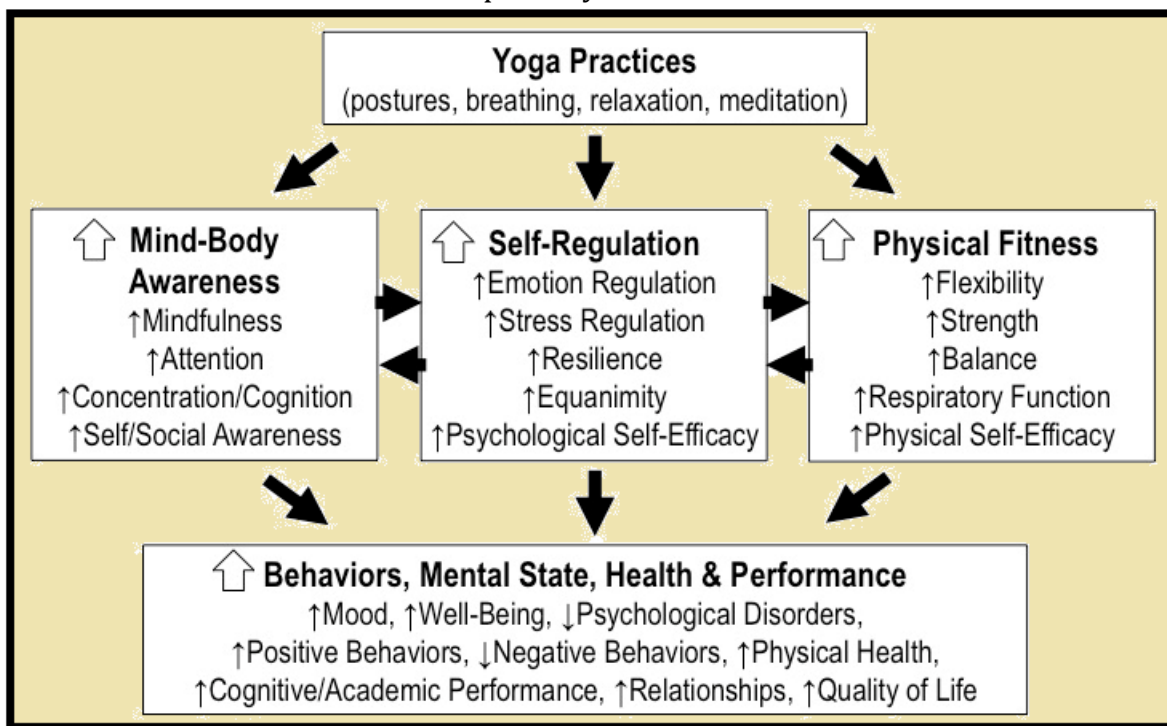


Figure 1: Yoga is related to Fitness and Health & Performance and other related factors.

3. RELATIONSHIP OF SPECIFIC TERMS WITH YOGA

3.1 Yoga and Fitness

Yoga and Fitness is a daily essential requirement as like others things to have a better performance in our day to day life activities. In our daily life we do different activities of different levels which required different level of fitness to have effective functioning of our whole body. The level of fitness differs from one person to another depending upon a purpose. One can increase or attain by joining yogic classes. The main purpose and aim of yoga is to work on and to develop the internal vital body organs on

which the healthiness of one's depends. Yoga aimed too in the efficient functioning of the organs. As yoga is for all, yoga can be called as life time sports for each and everyone because yoga directly or indirectly creates a sporting environment which further led to fitness. Yoga principles involve slow movement and maintain poses and balance which increases the level of fitness of certain parts of our body region. Yoga deals with posture of an individual because posture is directly related to fitness. Most of the yoga poses are non-aerobic in nature which helps the body to supply ample amount of oxygen to the cells so that muscle group can contract easily which is a part of fitness because, if the muscle groups are fit they can contract easily and if body muscles contract easily to perform any work in our day to day life activities then automatically one becomes fit and maintain a good fitness level.

3.2 Yoga and Healthiness

As yoga is directly related to health and healthiness but, indirectly related to fitness. From the point of view of Yoga, healthiness of a healthy person can be determined based on the wealth of the body, the vitality of the breath, the peace of mind, positive attitudes and a healthy expression of emotions. Yoga views health in a holistic way because healthiness was never the part of yogic science. In fact it makes it clear that unless the harmony of the complete human body system is achieved, the person is not in a state of healthiness. In Yoga four major approaches are mentioned for keeping one's self in the state of healthiness which are as- a healthy diet, a healthy lifestyle, healthy attitude towards oneself and the world, and practices which includes the body, breath and mind. Yoga says that healthiness and health are dynamic in nature which is impossible to be attained, stable and maintained. Healthiness of an individual is directly related to mental health and mental health can be improved or developed through yoga, which is mentioned in different articles and scripts related to yogic science. Yoga have a transformative effects on our mind which helps us to move forwards toward healthiness because if an individual is free from mental sickness then only it is possible to maintain a perfect healthiness status.

5. NEED OF YOGA IN MODERN LIFE

Yoga is a process of several breathing exercises, postures, and meditation. The whole world has entered into a modern lifestyle and facilities which make life more comfortable, the quality of life in this modern society is as far as from the reality. In this modern life people are facing Problems like stress, anxiety, restlessness, nervous breakdown, depression, fatigue, issues related to breaking up of families, low fitness level, lowest healthiness among the whole society and other related different diseases are all on an increasing rate. Due to modern life style, man is suffering from various postural deformities or bearing a bad posture of the whole body and diseases like Obesity, Hypertension, Diabetes, Migraine, Cervical, Backaches, Depression, Anxiety, Cancer, Insomnia, Constipation, Allergy, Asthma, Cardiac diseases etc. Various postural irregularities like Kyphosis, Lordosis, Scoliosis, Knocked Knee, Flatfoot, Bow leg can be seen in the modern population. Through yoga an individual can get over all those factors which affect us in different aspects of our life, physically, especially mentally and so on.

Many of the common health and social problems cannot be solved through theories, vaccines or surgeries. Yoga and Yoga practices involves different exercise patters and by practicing them one can altogether maintain a positive physical and mental health.

6. IMPORTANCE OF YOGA IN MODERN LIFE

- 6.1 Yoga's first importance is to understand the nature of the present modern lifestyle to explain the significance of yoga in modern life.
- 6.2 Yoga is based on the philosophy aspects that are practical and useful for our daily living activities. Yoga constructs desirable physiological changes which further led to create a sound scientific foundation for the people's living in this modern world.
- 6.3 The people living in the modern society involves themselves not only in a single activity but in diversities of activities for earning to continue their life which does not let them to maintain their minimum level of fitness and healthiness which required for the daily living, that's why people of this modern world engaging themselves in Yoga to maintain the minimum level of fitness and healthiness.
- 6.4 Yoga starts changing lifestyle of an individual by developing positive contribution for physical, mental and spiritual health.
- 6.5 Yoga asana practice for a longer period of time brings different changes in each step of life. It is useful for creating emotionally, physically and mentally healthy citizens.
- 6.6 Yoga practices without a doubt involve- discipline, willpower, determination, and effort, and it creates the experience of yoga unexpectedly.
- 6.7 To consider Yoga as a Physical exercise is not correct, but we all knows that it goes beyond the physical fitness to maintain posture and to create a healthy body.
- 6.8 Yoga creates a relationship between the mind and the whole body. When the body is physically healthy then only one's mind is clearly focused.
- 6.9 Yoga is the only way remaining which provides best solutions through its yogic practices in case of problem with systematic exercise, modern lifestyle and sedentary behavior of the people.
- 6.10 Yoga helps to live in harmony with our environment; it helps us to give recognition for ourselves, the natural environment in which we are living and also help us to peacefully interact with the society to which we belong and with the whole world.

7. INFLUENCE OF YOGA ON FITNESS AND HEALTHINESS

Now-a-days in today's modern world to remain healthy and fit, has become an essential thing and thinking too. The whole world is facing a problem of lack of time due to which one is unable to maintain his or her fitness and healthiness. Yoga before 21st century and after 21st century, it has its great impact on the individual health status and fitness level directly or indirectly. In this competitive world each and everyone is trying to be fit in their limited time, that's why every individual in this world trying to be depends on Yoga, to keep themselves healthy, fit, free from diseases and mentally stable.

The whole world is indulging in Yoga and Yogic Science for having a better and positive attitude towards their body fitness level and level of healthiness too. The people living in this planet earth are being benefited by Yoga in every aspects of their life and even in their daily living activities. Yoga, through its several poses of asana has provided beneficial effects on fitness and healthiness levels of the whole population of the whole world wide. Yogic science is a branch of Yoga which launches different yogic program and training program on fitness and healthiness through which one and the whole community along with the whole world will motivate themselves in engaging in Yogic activities. Each and every yogic asana poses has its own way of benefiting the world in different manner and aspects. Now, in this present world, yoga is creating a positive environment and

influencing the people and the whole world to be the part of yoga to maintain the minimum level of fitness and healthiness.

8. CONCLUSION

In day to day life scope of yoga in this modern life style has increased to a great extend. Through yoga human being can attain physical and psychological satisfaction. Yoga is good an invention it has ever been running for so many years. There is no time for the people to go for physical activities. Yoga is a physical program which helps the individual to have a stable mental health to have a good level of health status and fitness. Yoga is a procedure to control and advance the fitness and mental health which will further led to healthiness.

Yoga is the science which deals with all the aspects of one's health and self realization. Yoga has its effects in increasing great health status; in adjusting of mental state and self acknowledgement. If an individual is performing yoga then he/she is able to achieve the ideal level of keeping himself physically fit and also to maintain the same status of fitness for a longer period of time. In this modern world Yoga is the simplest and easy way remaining to maintain fitness and healthiness. Yoga is the only medium remaining to keep oneself fit and fine, to keep the stable and healthy mental status for a longer period of time which will further led to maintain a perfect status of healthiness within him. Through yoga the whole world is benefited which is proved which is also supported by T. F. Gulhane and Arndt Bussing et al.

T. F. Gulhane (2015) stated in his paper and highlighted the yogic benefits for reaching optimum level of physical fitness of an individual. The human body needs sound relation to nature and its natural remedies which are available in our surround in this seminar I tried to highlight the need of yoga and its benefits for human being to be in physically fit. Yoga is a procedure to control and advance the psyche and figure to increase great health, adjust of psyche and self-acknowledgement. Fitting comprehension and rehearse one can achieve the ideal level to keep physical fitness. Equalize between activity abstain from food and unwinding will furnish the sound mental and physical capacities.

Arndt Bussing et al. (2012) reviewed and stated that, this report summarizes the current evidence on the effects of yoga interventions on various components of mental and physical health, by focusing on the evidence described in review articles. Collectively, these reviews suggest a number of areas where yoga may well be beneficial, but more research is required for virtually all of them to firmly establish such benefits. The heterogeneity among interventions and conditions studied has hampered the use of meta-analysis as an appropriate tool for summarizing the current literature. Nevertheless, there are some meta-analyses which indicate beneficial effects of yoga interventions, and there are several randomized clinical trials (RCT's) of relatively high quality indicating beneficial effects of yoga for pain-associated disability and mental health. Yoga may well be effective as a supportive adjunct to mitigate some medical conditions, but not yet a proven stand-alone, curative treatment. Larger-scale and more rigorous research with higher methodological quality and adequate control interventions is highly encouraged because yoga may have potential to be implemented as a beneficial supportive/adjunct treatment that is relatively cost-effective, may be practiced at least in part as a self-care behavioral treatment, provides a life-long behavioral skill, enhances self-efficacy and self-confidence and is often associated with additional positive side effects.

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EFFECT OF FUNCTIONAL TRAINING AND RESISTANCE TRAINING ON REACTION TIME AND BLOCKING AMONG INTER SCHOOL VOLLEYBALL PLAYERS

Y.Udaya Bhaskar¹ Dr.P.P.S.Paul Kumar²

Affiliations:

¹ Research Scholar, University College of Arts, Commerce & Law, ANU

² Principal, University College of Physical Education & Sports Sciences, ANU

ABSTRACT

The purpose of the study was to investigate the effect of functional training and resistance training on reaction time and blocking among inter school volleyball players. The study was formulated as a true random group design consisting of a pre-test and post-test. The subjects (N=60) were randomly assigned to three equal groups of twenty male inter school volleyball players in each. The groups were assigned as experimental group I – (Functional Training), Experimental Group II (Resistance Training) and control group respectively. Pre-tests were conducted for all the 60 subjects on selected physical fitness and performance variables. After the experimental period of twelve weeks post-test were conducted and the scores were recorded. The post-tests were conducted on the above said dependent variables after a period of twelve weeks training on functional training and resistance training. The difference between initial and final scores of selected variables was the effect of respective experimental treatments. The statistical significance was determined using statistical application ANCOVA. In all cases 0.05 level was fixed to test the significance.

Keywords: Reaction time, Blocking, Resistance & Functional training, Volleyball Players

1. INTRODUCTION

The science of sports training is a recent to the field of sports science. The sports science discipline have improved at a very fast pace in the past few decades. The knowledge gained by these disciplines has to be understood by the coaches and trainers to apply it correctly to the training process. But majority of the coaches do not have sufficient scientific background and training to make full and effective use of the knowledge acquired by the sports science disciplines. This creates a gap between scientists and coaches. The science of training with its workers having sufficient background of science and sports are able to fill this gap and can become mediator between the scientists and the coaches.

1.1 Objective

The objective of this study was to assess the effect of functional training and resistance training on selected physical fitness and performance variables among inter school volleyball players. The investigator also interested to assess the levels of selected physical fitness and performance variables who undergo this training schedule. As an interventional programme, the investigator suggested two different packages of training, namely, functional training and resistance training for the benefit of inter school volleyball players. The initial and final scores on selected variables would prove the varied effect of experimental treatment and thus the objective of this study was to find out the effect of functional training and resistance training on selected physical fitness and performance variables among inter school volleyball players.

1.2 Statement of Problem

The purpose of this study was to find out the Effect Of Functional Training And Resistance Training On Reaction Time And Blocking Among Inter School Volleyball Players

1.3 Delimitations

- 1.3.1 Only sixty men inter school level volleyball players who participated in inter school tournaments were selected as subject at random and their age was between 14 to 16 years.
- 1.3.2 The subjects were divided into three groups. Each group consisting of twenty each, namely, experimental group I, experimental group II and control group.
- 1.3.3 Only selected functional training were provided to the experimental group I for 12 weeks as functional training.
- 1.3.4 Only selected weight training exercises were provided to the subjects of experimental group II for 12 weeks as resistance training.
- 1.3.5 Control group was kept strictly in control, that is, not involving in any special training which could directly or indirectly influence their physical fitness and performance in volleyball.

1.4 Limitations

The study was limited in the following ways, which would be taken into consideration at the time of findings of this study.

- 1.4.1 The investigator has not taken into consideration of the past experiences of the subjects in different training methods underwent.
- 1.4.2 The climatic conditions, diet and other daily routines of the subjects were not controlled.
- 1.4.3 The economical and social background of the players was not taken into consideration.

2. METHODOLOGY

2.1 Selection of Subjects

The purpose of the study was to find out the effect of functional training and resistance training on selected physical fitness and performance variables among inter school volleyball players. To facilitate the study, 60 male inter school volleyball players from different schools in Andhra Pradesh were randomly selected as subjects and their age were 14 - 16 years. They were assigned into three groups, namely, experimental group I, experimental group II and control group. Experimental group I served as functional training group, experimental group II served as resistance training group and the third group served as control group (CG).

The requirement of the experiment procedures, testing as well as exercise schedule were explained to the subjects so as to get full co-operation of the effort required on their part and prior to the administration of the study. The investigator got individual consent from each subject.

2.2 Selection of Variables

2.2.1 Dependent Variables:

- (a) Reaction time (Physical Fitness Variable)
- (b) Blocking Performance Variable

2.2.2 Independent variables

- (a) Twelve weeks of Functional training in Volleyball
- (b) Twelve weeks of resistance Training

2.3 Research Design

The study was formulated as a true random group design consisting of a pre-test and post-test. The subjects (N=60) were randomly assigned to three equal groups of twenty male inter school volleyball players in each. The groups were assigned as experimental group I - (Functional Training), Experimental Group II (Resistance Training) and control group respectively. Pre-tests were conducted for all the 60 subjects on selected physical fitness and performance variables. After the experimental period of twelve weeks post-test were conducted and the scores were recorded.

The post-tests were conducted on the above said dependent variables after a period of twelve weeks training on functional training and resistance training. The difference between initial and final scores of selected variables was the effect of respective experimental treatments. The statistical significance was determined using statistical application ANCOVA. In all cases 0.05 level was fixed to test the significance.

2.4 Statistical Analysis

To compare the initial and final means of Reaction Time and Blocking skill of volleyball due to Functional training and Resistance training among inter school men volleyball players and the initial and final means of Reaction time due to Functional training and Resistance training among inter school men volleyball players, mean, SD, and ANACOVA were computed.

As the F-ratio was found to significant, Scheffe's Test of Post-hoc Comparison was applied to determine the significant difference between ordered paired means of experimental and control groups of volleyball players.

4. RESULTS

To investigate the effect of functional and resistance training on reaction time and blocking ability in Volleyball, means, standard deviations and ANCOVA was computed and data pertaining to this, has been presented in Table 1 to 4 and Depicted in Figure 1 & 2.

TABLE I
ANCOVA RESULTS ON EFFECT OF FUNCTIONAL TRAINING AND RESISTANCE TRAINING COMPARED WITH CONTROLS ON REACTION TIME

Test	Functional Training	Resistance Training	Control Group	Source of Variance	Sum of Squares	Df	Mean Squares	F-Ratio
Pre-test Mean	0.279	0.264	0.281	Between Within	0.004 0.169	2 57	0.002 0.003	0.603
Post-test Mean	0.253	0.242	0.286	Between Within	0.020 0.216	2 57	0.010 0.004	2.701
Adjusted Post-test Mean	0.249	0.252	0.280	Between Within	0.012 0.085	2 56	0.006 0.002	3.863*
Mean Diff	0.026	0.022	0.005	Between Within				

*Significant at .05 level

F- 0.05 (2, 57) & (2, 56) =3.16,

As shown in Table 1 the obtained pre-test means on Reaction time on Functional training group was 0.279, Resistance training group was 0.264 was and control group was 0.281. The obtained pre-test F-value was 0.603 and the required table F-value was 3.16, which proved that there was no significant difference among initial scores of the subjects.

The obtained post-test means on Reaction time on Functional training group was 0.253, Resistance training group was 0.242 was and control group was 0.286. The obtained post-test F-value was 2.701 and the required table F-value was 3.16, which proved that there was no significant difference among post-test scores of the subjects.

Taking into consideration of the pre-test means and post-test means adjusted post-test means were determined and analysis of covariance was done and the obtained F-value 3.863 was greater than the required value of 3.16 and hence it was accepted that there was significant differences among the treated groups.

Since significant differences were recorded, the results were subjected to post-hoc analysis using Scheffe's Confidence Interval test. The results were presented in Table-II.

TABLE 2
MULTIPLE COMPARISONS OF PAIRED ADJUSTED MEANS AND SCHEFFE'S CONFIDENCE INTERVAL TEST RESULTS ON REACTION TIME

Mean Scores				
Functional training Group	Resistance training Group	Control Group	Mean Difference	Confidence Interval (C.I.)
0.249	0.252	-	0.003	0.031
0.249	-	0.280	0.031*	
-	0.252	0.280	0.028	

* Significant at .05 level

The post-hoc analysis of obtained ordered adjusted means proved that there was significant differences existed between Functional training group and control group (MD: 0.031). There was no significant difference between Resistance training group and control group (MD: 0.028). There was no significant difference between treatment groups, namely, Functional training group and Resistance training group (MD: 0.003). The ordered adjusted means were presented through bar diagram for better understanding of the results of this study in Figure-1

TABLE 3
ANCOVA RESULTS ON EFFECT OF FUNCTIONAL TRAINING AND RESISTANCE TRAINING COMPARED WITH CONTROLS ON BLOCKING

Test	Functional Training	Resistance Training	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	F-Ratio
Pre-test Mean	7.20	7.15	7.45	Between Within	1.03 40.70	2 57	0.52 0.71	0.72
Post-test Mean	8.95	8.10	7.70	Between Within	16.30 44.95	2 57	8.15 0.79	2.701
Adjusted Post-test Mean	9.01	8.20	7.54	Between Within	21.18 15.536	2 56	10.589 0.277	3.863*
Mean Diff	1.75	0.95	0.25	Between Within				

*Significant at .05 level

F- 0.05 (2, 57) & (2, 56) =3.16,

As shown in Table-3 the obtained pre-test means on Blocking' on Functional training group was 7.20, Resistance training group was 7.15 was and control group was 7.45. The obtained pre-test F-value was 0.72 and the required table F-value was 3.16, which proved that there was no significant difference among initial scores of the subjects.

The obtained post-test means on Blocking' on Functional training group was 8.95, Resistance training group was 8.10 was and control group was 7.70. The obtained post-test F-value was 10.33 and the required table F-value was 3.16, which proved that there was significant difference among post-test scores of the subjects.

Taking into consideration of the pre-test means and post-test means adjusted post-test means were determined and analysis of covariance was done and the obtained F-value 38.17 was greater than the required value of 3.16 and hence it was accepted that there was significant differences among the treated groups.

Since significant differences were recorded, the results were subjected to post-hoc analysis using Scheffe's Confidence Interval test. The results were presented in Table-4

TABLE 4
MULTIPLE COMPARISONS OF PAIRED ADJUSTED MEANS AND SCHEFFE'S CONFIDENCE INTERVAL TEST RESULTS ON BLOCKING

Mean Scores				
Functional training Group	Resistance training Group	Control Group	Mean Difference	Confidence Interval (C.I.)
9.01	8.20	-	0.81*	0.42
9.01	-	7.54	1.46*	
-	8.02	7.54	0.66*	

* Significant at .05 level

The post-hoc analysis of obtained ordered adjusted means proved that there was significant differences existed between Functional training group and control group (MD: 1.46). There was significant difference between Resistance training group and control group (MD: 0.66). There was significant difference between treatment groups, namely, Functional training group and Resistance training group. (MD: 0.81).

The ordered adjusted means were presented through bar diagram for better understanding of the results of this study in Figure-2

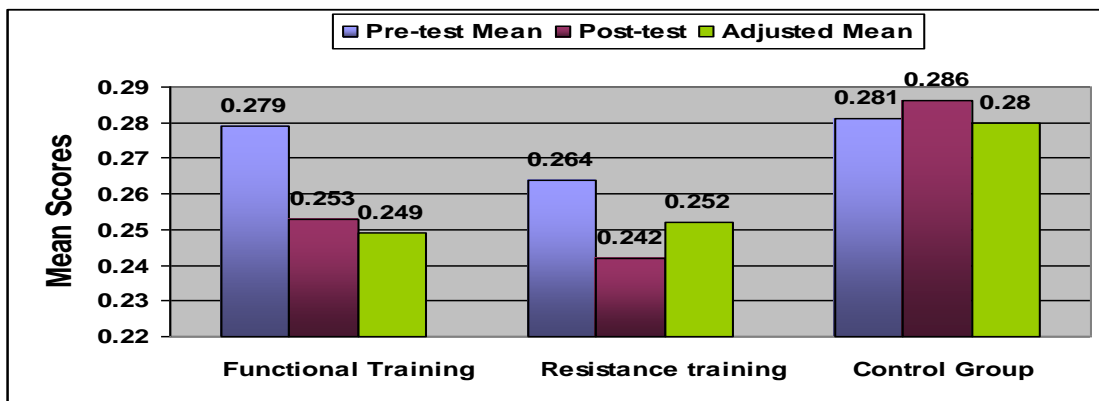


FIGURE-1: BAR DIAGRAM SHOWING PRE-TEST, POST-TEST AND ORDERED ADJUSTED MEANS ON REACTION TIME

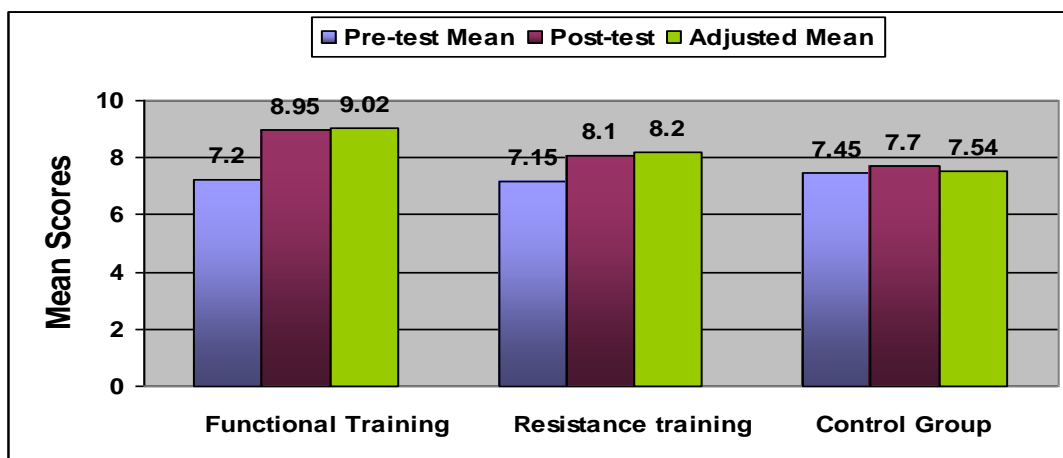


FIGURE-2: BAR DIAGRAM SHOWING PRE-TEST, POST-TEST AND ORDERED ADJUSTED MEANS ON BLOCKING

5. DISCUSSION

Reaction Time

In order to find out the effect of Functional training and Resistance training on Reaction time, the obtained pre- and post-test means were subjected to ANCOVA and post-hoc analysis through Scheffe's confidence interval test.

The effect of Functional training and Resistance training on Reaction time is presented in Table-IV. The analysis of covariance proved that there was significant difference between the experimental group and control group as the obtained F-value 3.863 was greater than the required table F-value to be significant at 0.05 level.

Since significant F-value was obtained, the results were further subjected to post-hoc analysis and the results presented in Table-II proved that there was significant difference between Functional training group and control group (MD: 0.031). There was no significant difference between Resistance training group and control group (MD: -0.028). Comparing between the treatments groups, it was found that there was no significant difference between Functional training and Resistance training group among inter school men volleyball players.

Thus, it was found that functional training was significantly better than control group in improving Reaction time of the inter school men volleyball players, while resistance training failed.

5.2 Blocking

In order to find out the effect of Functional training and Resistance training on Blocking' the obtained pre and post-test means were subjected to ANCOVA and post-hoc analysis through Scheffe's confidence interval test.

The effect of Functional training and Resistance training on Blocking' is presented in Table-VII. The analysis of covariance proved that there was significant difference between the experimental group and control group as the obtained F-value 38.17 was greater than the required table F-value to be significant at 0.05 level.

Since significant F-value was obtained, the results were further subjected to post-hoc analysis and the results presented in Table IV proved that there was significant difference between Functional training group and control group (MD: 1.46) and Resistance training group and control group (MD: 0.66). Comparing between the treatment groups, it was found that there was significant difference between Functional training and Resistance training group among inter school men volleyball players.

Thus, it was found that functional training was significantly better than resistance training and control group in improving Blocking' performance of the inter school men volleyball players.

5.3 Hypotheses

- 5.3.1 It was hypothesized that functional training would significantly improve the selected reaction time among inter school volleyball players compared to control group.
- 5.3.2 It was hypothesized that functional training would significantly improve the selected performance variables, blocking, among inter school volleyball players compared to control group.

6. CONCLUSIONS

Within the limitations and delimitations of the study, the following conclusions were drawn.

1. It was concluded that 12 weeks functional training and 12 weeks resistance training significantly improved reaction time of inter school volleyball players compared to control group. It was also found that though functional training showed superiority than resistance training on physical fitness variable, reaction time, the difference was not significant as such there was no significant difference between the experimental protocols of this study in altering of inter school volleyball players.
2. It was found that 12 weeks functional training and 12 weeks resistance training significantly improved performance variable, blocking among inter school volleyball

players compared to control group. It was also found that functional training was significantly better than functional training in improving blocking ability than resistances training of inter school volleyball players.

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EFFECT OF FUNCTIONAL TRAINING AND RESISTANCE TRAINING ON LEG EXPLOSIVE POWER AND SPIKING AMONG INTER SCHOOL VOLLEYBALL PLAYERS

Y.Udaya Bhaskar¹ Dr.P.P.S.Paul Kumar²

Affiliations:

¹ Research Scholar, University College of Arts, Commerce & Law, ANU

² Principal, University College of Physical Education & Sports Sciences, ANU

ABSTRACT

The purpose of the study was to investigate the effect of functional training and resistance training on leg explosive power and spiking among inter school volleyball players. The study was formulated as a true random group design consisting of a pre-test and post-test. The subjects (N=60) were randomly assigned to three equal groups of twenty male inter school volleyball players in each. The groups were assigned as experimental group I – (Functional Training), Experimental Group II (Resistance Training) and control group respectively. Pre-tests were conducted for all the 60 subjects on selected physical fitness and performance variables. After the experimental period of twelve weeks post-test were conducted and the scores were recorded. The post-tests were conducted on the above said dependent variables after a period of twelve weeks training on functional training and resistance training. The difference between initial and final scores of selected variables was the effect of respective experimental treatments. The statistical significance was determined using statistical application ANCOVA. In all cases 0.05 level was fixed to test the significance.

Keywords: Leg Explosive Power, Spiking Resistance & Functional training, Volleyball Players

1. INTRODUCTION

The body is the temple of soul and can be a sound mind only in healthy body. To attain the harmony body, mind and spirit, the body must be physically fit. The future of the nation depends on today's younger generation and the health of the people is the wealth of the nation. Performance sports aim at high sports performance and for most physical and psychic capacities of sports men are developed to extreme limits

1.1 Objective

The objective of this study was to assess the effect of functional training and resistance training on selected physical fitness and performance variables among inter school volleyball players. The investigator also interested to assess the levels of selected physical fitness and performance variables who undergo this training schedule. As an interventional programme, the investigator suggested two different packages of training, namely, functional training and resistance training for the benefit of inter school volleyball players. The initial and final scores on selected variables would prove the varied effect of experimental treatment and thus the objective of this study was to find out the effect of functional training and resistance training on selected physical fitness and performance variables among inter school volleyball players.

1.2 Statement of the Problem

The purpose of this study was to find out the Effect of Functional Training and Resistance Training on Leg Explosive Power and Spiking among Inter School Volleyball Players

1.3 Delimitations

1. Only sixty men inter school level volleyball players who participated in inter school tournaments were selected as subject at random and their age was between 14 to 16 years.
2. The subjects were divided into three groups. Each group consisting of twenty each, namely, experimental group I, experimental group II and control group.
3. Only selected functional training were provided to the experimental group I for 12 weeks as functional training.
4. Only selected weight training exercises were provided to the subjects of experimental group II for 12 weeks as resistance training.
5. Control group was kept strictly in control, that is, not involving in any special training which could directly or indirectly influence their physical fitness and performance in volleyball.
6. Only the following physical fitness and performance variables were considered for this study:

1.4 Limitation

The study was limited in the following ways, which would be taken into consideration at the time of findings of this study. The investigator has not taken into consideration of the past experiences of the subjects in different training methods underwent. The climatic conditions, diet and other daily routines of the subjects were not controlled. The economical and social background of the players was not taken into consideration.

1.5 Significance

The study was significant in determining different training schedules for inter school volleyball players. The study was significant in assessing the physical fitness levels of inter

school volleyball players. The study was significant in assessing the performance levels of volleyball players. The findings of this study would encourage future researches in different methods of training on volleyball players.

2. METHODOLOGY

2.1 Selection of Subjects

The purpose of the study was to find out the effect of functional training and resistance training on selected physical fitness and performance variables among inter school volleyball players. To facilitate the study, 60 male inter school volleyball players from different schools in Andhra Pradesh were randomly selected as subjects and their age were 14 - 16 years. They were assigned into three groups, namely, experimental group I, experimental group II and control group. Experimental group I served as functional training group, experimental group II served as resistance training group and the third group served as control group (CG).

The requirement of the experiment procedures, testing as well as exercise schedule were explained to the subjects so as to get full co-operation of the effort required on their part and prior to the administration of the study. The investigator got individual consent from each subject.

2.2 Selection of Variables

2.2.1 Dependent Variables:

- (a) Explosive Power (Physical Fitness Variable)
- (b) Spiking (Performance Variable)

2.2.2 Independent variables

- (a) Twelve weeks of Functional training in Volleyball
- (b) Twelve weeks of resistance Training

2.3 Research Design

The study was formulated as a true random group design consisting of a pre-test and post-test. The subjects (N=60) were randomly assigned to three equal groups of twenty male inter school volleyball players in each. The groups were assigned as experimental group I – (Functional Training), Experimental Group II (Resistance Training) and control group respectively. Pre-tests were conducted for all the 60 subjects on selected physical fitness and performance variables. After the experimental period of twelve weeks post-test were conducted and the scores were recorded.

The post-tests were conducted on the above said dependent variables after a period of twelve weeks training on functional training and resistance training. The difference between initial and final scores of selected variables was the effect of respective experimental treatments. The statistical significance was determined using statistical application ANCOVA. In all cases 0.05 level was fixed to test the significance.

2.4 Criterion Measures

By glancing the literature in consultation with professionals and experts, the following variables were selected as the criterion measures in this study. Explosive leg power was measured through vertical jump test and the scores recorded in centimeters. Volleyball performance variables, spiking, were determined using standard tests.

2.5 Test Administration

2.5.1 Vertical Jump

Purpose: The sergeant jump was used to measure explosive power. **Equipment required:** Measuring tape or marked wall, chalk for marking wall. **Procedure:** The subject stood side on to a wall and reached up with the hands closest to the wall. Keeping the feet flat on the ground, the point of the fingertips was marked or recorded. This was called the standing reach. The subject put chalk on his finger tips to mark the wall at the height of their jump. The subject then stood away from the wall, and jumped vertically as high as possible using both arms and legs to assist in projecting the body upwards. Attempt to touch the wall at the highest point of the jump was made. The difference in distance between the standing reach height and the jump height was the score. **Scoring:** The best of three attempts was recorded. The jump height was usually recorded as a distance score.

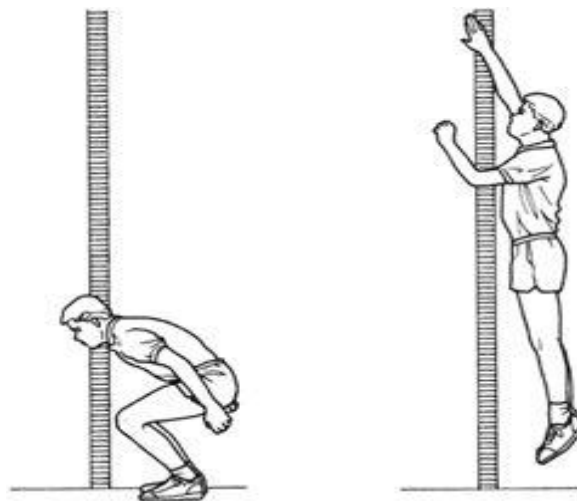


Fig. 2: Diagram for Vertical Jump Test

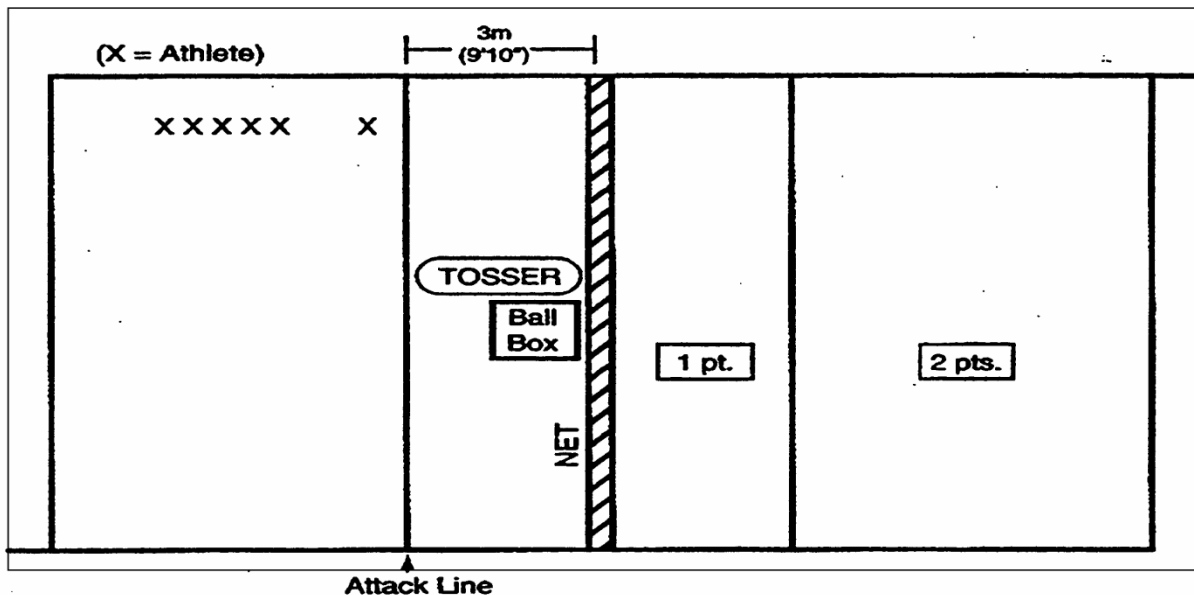
2.5.2 SPKING

Purpose: To measure the spiking ability of the subjects, they were rated in subjective manner during the match by the investigator and two coaches. **Field Marking:** Use a regulation size court of 18m (59') long and 9m (29' 6") wide, five Volleyballs, net (2.43m [7' 11 5/8"]) standards, antennas, measuring tape, floor tape or chalk and ball box as shown in Figure.

Test : Tosser will toss the ball in front of the player and 2m (6' 6 3/4") above the net. Tosses that were not at the proper height were repeated. The player stood in the court 3.05-4.57m (10-15') off the net, made a spiking approach, and spikes the ball over the net and within the boundaries of the opponent's court. Each player was given 10 attempts. **Scoring:** Subject received two points for each spike that landed beyond the attack line in the backcourt and one point for each spike that landed between the net and the attack line within the opponent's front court. A tip (dink) or half-speed shot was not recorded as a spike. The subject's final score should be the total of all 10 attempts. **Staging :** Volunteers administer the test and were not to interfere with any subject who was performing the test. Volunteer A would instruct the group doing this particular test while Volunteer B demonstrated the actual test. Volunteer C would toss the Volleyball to the subject who performed. Volunteers would retrieve the Volleyballs after they landed and would roll them

to a volunteer who was standing near the ball box. When the subject was finished, Volunteer A would give the score to Volunteer D who was the scorekeeper. Each volunteer was to administer the test and manage their area only.

X-Players



Statistical Analysis

To compare the initial and final means of explosive power and spiking ability of volleyball due to Functional training and Resistance training among inter school men volleyball players and the initial and final means of Reaction time due to Functional training and Resistance training among inter school men volleyball players , mean, SD, and ANACOVA were computed.

4. RESULTS

To investigate the effect of functional and resistance training on explosive power and spiking ability in Volleyball, means, standard deviations and ANACOVA was computed and data pertaining to this, has been presented in Table 1 to 4 and Depicted in Figure 1 & 2.

TABLE I

ANCOVA RESULTS ON EFFECT OF FUNCTIONAL TRAINING AND RESISTANCE TRAINING COMPARED WITH CONTROLS ON LEG EXPLOSIVE POWER

Test	Functional Training	Resistance Training	Control Group	Source of Variance	Sum of Squares	Df	Mean Squares	F-Ratio
Pre-test Mean	35.85	34.30	37.65	Between Within	112.43 2419.30	2 57	56.22 42.44	1.32
Post-test Mean	38.55	36.75	37.80	Between Within	32.70 1867.90	2 57	16.35 32.77	0.50
Adjusted Post-test Mean	38.62	38.17	36.31	Between Within	58.74 33.32	2 56	29.369 0.595	49.36*
Mean Diff	2.70	2.45	0.15	Between Within				

*Significant at .05 level, F- 0.05 (2, 57) & (2, 56) =3.16,

As shown in Table I, the obtained pre-test means on Leg explosive power on Functional training group was 35.85, Resistance training group was 34.30 was and control

group was 37.65. The obtained pre-test F-value was 1.32 and the required table F-value was 3.16, which proved that there was no significant difference among initial scores of the subjects.

The obtained post-test means on Leg explosive power on Functional training group was 38.55, Resistance training group was 36.75 was and control group was 37.80. The obtained post-test F-value was 0.50 and the required table F-value was 3.16, which proved that there was no significant difference among post-test scores of the subjects.

Taking into consideration of the pre-test means and post-test means adjusted post-test means were determined and analysis of covariance was done and the obtained F-value 49.36 was greater than the required value of 3.16 and hence it was accepted that there was significant differences among the treated groups.

Since significant differences were recorded, the results were subjected to post-hoc analysis using Scheffe's Confidence Interval test. The results were presented in Table-2.

TABLE 2
MULTIPLE COMPARISONS OF PAIRED ADJUSTED MEANS AND SCHEFFE'S CONFIDENCE INTERVAL TEST RESULTS ON LEG EXPLOSIVE POWER

MEANS				C.I.
Functional training Group	Resistance training Group	Control Group	Mean Difference	
38.62	38.17		0.45	0.61
38.62		36.31	2.32*	0.61
	38.17	36.31	1.87*	0.61

* Significant at .05 level

The post-hoc analysis of obtained ordered adjusted means proved that there was significant differences existed between Functional training group and control group (MD: 2.32). There was significant difference between Resistance training group and control group (MD: 1.87). There was no significant difference between treatment groups, namely, Functional training group and Resistance training group (MD: 0.45).

TABLE 3
ANCOVA RESULTS ON EFFECT OF FUNCTIONAL TRAINING AND RESISTANCE TRAINING COMPARED WITH CONTROLS ON SPIKING

TEST	Functional Training	Resistance Training	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	F-Ratio
Pre-test Mean	8.75	8.70	9.05	Between	1.43	2	0.72	1.00
				Within	40.90	57	0.72	
Post-test Mean	10.35	9.85	9.00	Between	18.63	2	9.32	11.27*
				Within	47.10	57	0.83	
Adjusted Post-test Mean	10.41	9.95	8.83	Between	25.79	2	12.894	32.38*
				Within	22.297	56	0.398	
Mean Diff	1.60	1.15	-0.05					

*Significant at .05 level, F- 0.05 (2, 57) & (2, 56) =3.16,

As shown in Table-3 the obtained pre-test means on Spiking on Functional training group was 8.75, Resistance training group was 8.70 was and control group was 9.05. The

obtained pre-test F-value was 1.00 and the required table F-value was 3.16, which proved that there was no significant difference among initial scores of the subjects.

The obtained post-test means on Spiking on Functional training group was 10.35, Resistance training group was 9.85 was and control group was 9.00. The obtained post-test F-value was 11.27 and the required table F-value was 3.16, which proved that there was significant difference among post-test scores of the subjects.

Taking into consideration of the pre-test means and post-test means adjusted post-test means were determined and analysis of covariance was done and the obtained F-value 32.38 was greater than the required value of 3.16, and hence it was accepted that there was significant differences among the treated groups.

TABLE 4
MULTIPLE COMPARISONS OF PAIRED ADJUSTED MEANS AND SCHEFFE'S CONFIDENCE INTERVAL TEST RESULTS ON SPIKING

MEANS				C.I.
Functional training Group	Resistance training Group	Control Group	Mean Difference	
10.41	9.95		0.46	0.50
10.41		8.83	1.58*	0.50
	9.95	8.83	1.12*	0.50

* Significant

The post-hoc analysis of obtained ordered adjusted means proved that there was significant differences existed between Functional training group and control group (MD: 1.58). There was significant difference between Resistance training group and control group (MD: 1.12). There was no significant difference between treatment groups, namely, Functional training group and Resistance training group. (MD: 0.46).

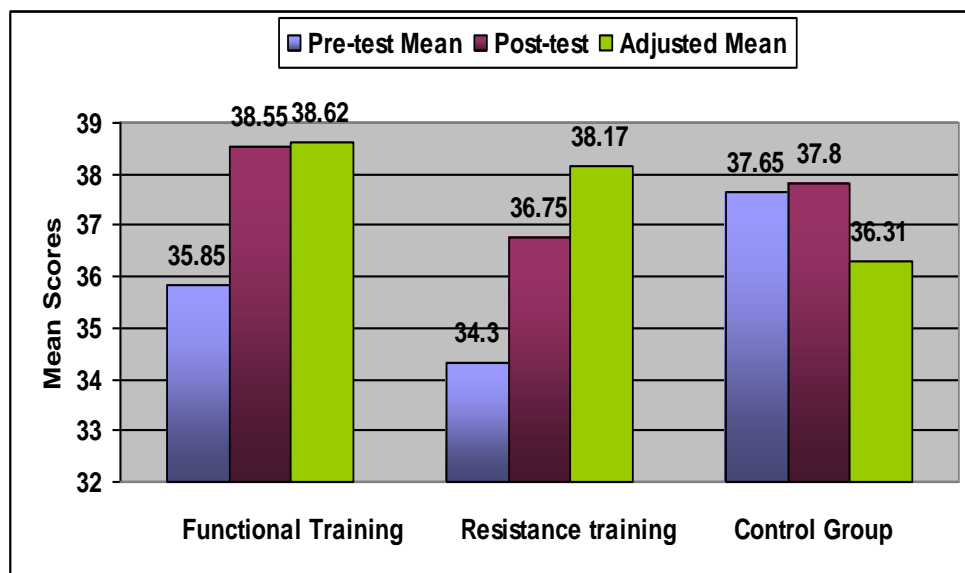


FIGURE I: BAR DIAGRAM SHOWING PRE-TEST, POST-TEST AND ORDERED ADJUSTED MEANS ON LEG EXPLOSIVE POWER

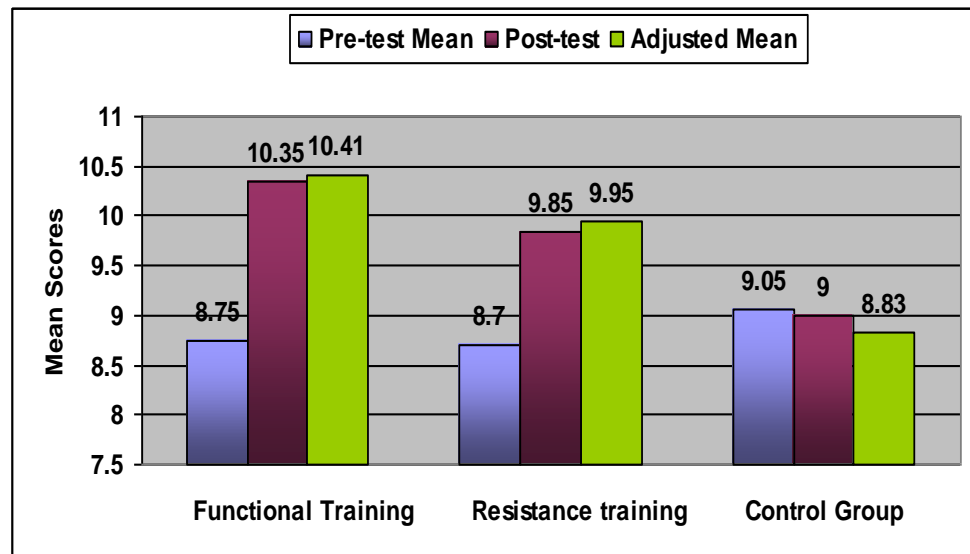


FIGURE-2: BAR DIAGRAM SHOWING PRE-TEST, POST-TEST AND ORDERED ADJUSTED MEANS ON SPIKING

5. DISCUSSION

5.1 Leg Explosive Power

In order to find out the effect of Functional training and Resistance training on Leg explosive power the obtained pre and post-test means were subjected to ANCOVA and post-hoc analysis through Scheffe's confidence interval test.

The effect of Functional training and Resistance training on Leg explosive power is presented in Table II. The analysis of covariance proved that there was significant difference between the experimental group and control group as the obtained F-value 49.36 was greater than the required table F-value to be significant at 0.05 level.

Since significant F-value was obtained, the results were further subjected to post-hoc analysis and the results presented in Table II proved that there was significant difference between Functional training group and control group (MD: 2.32) and Resistance training group and control group (MD: 1.87). Comparing between the treatment groups, it was found that there functional training was better than resistance group with mean difference of 0.45. However, this difference was not significant between Functional training and Resistance training group among inter school men volleyball players.

Thus, it was found that Functional training and Resistance training were significantly better than control group in improving leg explosive power of the inter school men volleyball players.

5.2 SPIKING

In order to find out the effect of Functional training and Resistance training on Spiking the obtained pre- and post-test means were subjected to ANCOVA and post-hoc analysis through Scheffe's confidence interval test.

The effect of Functional training and Resistance training on Spiking is presented in Table-IV. The analysis of covariance proved that there was significant difference between the experimental group and control group as the obtained F-value 32.38 was greater than the required table F-value to be significant at 0.05 level.

Since significant F-value was obtained, the results were further subjected to post-hoc analysis and the results presented in Table-V proved that there was significant difference between Functional training group and control group (MD: 1.58) and Resistance training group and control group (MD: 1.12). Comparing between the treatment groups, it was found that functional training was better than resistance training in improving passing performance, however this difference was not significant among inter school men volleyball players.

Thus, it was found that Functional training and Resistance training were significantly better than control group in improving Spiking performance of the inter school men volleyball players.

5.3 Hypotheses

This research is aimed at comparing the effect of functional training and resistance training on selected physical fitness and performance variables of inter school volleyball players. For this purpose, it was hypothesized that functional training would significantly improve the selected performance, spiking, among inter school volleyball players compared to control group.

6. CONCLUSIONS

Within the limitations and delimitations of the study, the following conclusions were drawn.

3. It was concluded that 12 weeks functional training and 12 weeks resistance training significantly improved leg explosive power of inter school volleyball players compared to control group. It was also found that though functional training showed superiority than resistance training on physical fitness variable, leg explosive power, the difference was not significant as such there was no significant differences between the experimental protocols of this study in altering leg explosive power of inter school volleyball players.
4. The results of this study made to conclude that 12 weeks functional training and 12 weeks resistance training significantly improved performance spiking among inter school volleyball players compared to control group. It was also found that there was no significant difference between the experimental protocols of this study in altering spiking ability of inters school volleyball players.

7. RECOMMENDATIONS

The training protocols suggested in this study may be included in the training schedule of training inter school volleyball players.

The training methods of this study may be implemented to other sports and games which require leg strength which in turn would improve performances of the game.

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INVESTIGATION OF EFFECTS OF DIFFERENT TRAINING MODALITIES ON PASSING SKILL FOR ACCRACY IN AIR OF FOOTBALL PLAYERS

Dr. Vishal 'O' Banne ¹

Affiliation:

¹ Assistant Professor, Rani Durgawati Viswavidhalaya, Jabalpur (M.P.)

ABSTRACT

The purpose of the study was to assess the Comparative effect of different training modalities on passing for accuracy in air skill of football players. The subjects for present study were 60 male football players between the age of 16 – 20 year of age from Jabalpur, Chinndwara and Tikamgarh (M.P.) those who regularly participate in training and represented their districts in inter district competitions. All the subjects were randomly assigned to three groups (N=20), out of which two group were experimental and one group served as a control group. Based on review of available literature, passing for accuracy in air skill of football players was identified for the present study. Random group design was used to evaluate the effect of different training modalities. The selected subjects (N=60) were randomly divided into three groups with subjects in each group out of which experimental group-I underwent the plyometric training. Experimental group II underwent specific training thrice in a week along with two days match practice. Group-III (control group) participated in their regular game for 12 weeks the 80 minutes to 90 minutes training was devoted towards warming up and stretching. Researcher concluded that The plyometric exercises or football specific competitive exercises used in the study were not significant effective for improving the passing for accuracy in air, of football players.

Keywords: Passing, Skill, Accuracy, Air, football, Plyometric, Competitve Exercise

1. INTRODUCTION

Football refers to a number of games that involve, to varying degrees, feints, kicking a ball with the foot to score a goal, in general it is known as just "football" or "soccer". The word football applies to whichever form of football is the most popular in the regional context in which the word appears, including association football, as well as American football, Australian rules football, Canadian football, Gaelic football, rugby league, rugby union, and other related games. These variations of football are known as football codes.

Most of the sports require a combination of physical fitness factors. For instance, a football player is suppose to perform tackling , feinting, dribbling, passing, receiving and shooting with the combination of short-duration strength, speed and endurance workouts. In different sports and games, athletes perform strength training differently and soccer players today are more than ever involved in strength training. Strength plays a significant role in increasing power and speed. Many soccer movements such as tackling, jumping, running, and changing direction are primarily based upon forceful and explosive activities. During such movements, the power efficiency depends on the strength of the involved muscles. Therefore, having high muscle strength which can be achieved through strength training is prerequisite to soccer players.

Plyometric training Fred Writ (1920-1994) a coach from Unites state of America first introduce the term Plyometric training. The word plyometric can be divided into two parts into Latin roots. Polio which means more and metric means measurable this implying measurable increase (Chu, 1998). According to Russian literature, Plyometric training had its early roots in the mid 1960's (Radcliff & Farentino's, 1999). In the 1970 other eastern Europeans countries such as Germany, Bulgaria and Romania began and it calling 'Jumptraining' (Chu, 1998).

Plyometric exercise movement involves rapid eccentric and concentric muscle action this type of training develops explosive muscular performance (Fowler & Kravitz 2011). In the study by Bruce & Smith (2007), Recommended after critical review of literature explosive exercise poses considerable injury risk and encompasses that slow, controlled weight training in combination with sports specific training is all necessary to enhance both muscular strength and power. In turn improve actual sporting performance. Slow training increase acceleration performance and fast training improve speed maintains

The sports scientist mentioned that the players have to spend a considerable amount of time trying to improve performance through practice related activities Ericsoon et al., 1993, David & Slabode 1998 and Kramer & Romer 1993). The skill performance of the soccer player depends upon the player's physical, tactical, technical and socio psychological abilities (Stolen, 2005).

Athletes achieve high level of performance through resistance training. This training is used to develop the athlete's strength, power, flexibility and speed. The improvement of these factor help to enhancing the athletes' performance on her respective playing field (Pearson and Gehlsen, 1998). Physical Characters and skill performance level of football player have a major impact by resistance training (Arthur & Baileys, 1998).

Skill is the capability or faculty of nervous system by which a person may master new movement quickly and easily, consciously control his movement; orientate himself in difficult and unexpected situation and choose the method which will be most effective in meeting each situation, (Singh, 1995.)

Passing is considered to be a very essential skill for a good footballer. It is used to pass the ball to a team-mate in the most accurate way. But if in case of long pass more force is applied and if player standing quiet close to you less force is needed. Football is a team game. Playing as a team requires each player to be able to pass the ball well. Through passing, a team can quickly counter attack from defense maintain possession in mid field and set up opportunities to score (Special Olympic Football Coaching Guide, 2004). According to the Russell et al., (2011), football specific exercise influenced the quality of performance in gross motor skill such as passing. Russell & Kingsely (2011) found that aerobic training fluid-electrolyte provision and acute carbohydrate supplementation have been to improve the proficiency in technical action performed after soccer specific exercises.

The purpose of the study was to assess the Comparative effect of different training modalities on passing for accuracy in air skill of football players.

2. METHODOLOGY

2.1 Selection Of Subjects

The subjects for present study were 60 male football players between the age of 16 – 20 year of age from Jabalpur, Chhindwara and Tikamgarh (M.P.) those who regularly participate in training and represented their districts in inter district competitions.

All the subjects were randomly assigned to three groups (N=20), out of which two groups were experimental and one group served as a control group. For all three groups training was imparted thrice in a week with two days of regular game and control group participated in regular game for five days in a week.

2.2 Selection of Variable

Based on review of available literature, the current research in the area and the feasibility criteria, passing for accuracy in air skill of football players was identified for the present study.

2.3 Criterion Measure

Passing for accuracy (in air):- maximum number of points scored by the subject by passing the ball on the concentric circles marked on the ground with different radius of 4,8,12 and 16 feet's with 4,3,2 and 1 scores respectively. Total score of 05 kicks from both the legs from a distance of 20 yards line was recorded.

2.4 Research Design

Random group design was used to evaluate the effect of different training modalities.

2.5 Administration of Tests

The selected subjects (N=60) were randomly divided into three groups with subjects in each group out of which experimental group-I underwent the plyometric training. Experimental group II underwent specific training thrice in a week along with two days match practice. Group-III (control group) participated in their regular game for 12 weeks the 80 minutes to 90 minutes training was devoted towards warming up and stretching. The pre and post tests were administered to the subjects at the play grounds of R.D.V.V., Jabalpur before the starting of and at the end of experiment. Before administering the tests the subjects were given proper warming up under the supervision of the research scholar.

3. RESULTS

In order to compare the effectiveness of plyometric training, competition exercise training, The data were subjected to mean & standard deviation, one way Analysis of Covariance (ANCOVA). In case of significant F-ratios, the Least Significant Difference (L.S.D)

Test of Post hoc Comparison between ordered pair means to find out the specific group differences and data has been presented in table no. 1 & 2 and depicted in Figure 1 and 2. The level of significance was set at 0.05 level of confidence.

TABLE 1
DESCRIPTIVE STATISTICS OF PRE AND POST TEST SCORES ON PASSING FOR ACCURACY AIR OF FOOTBALL PLAYERS.

S.NO.	Test	Mean	Standard Deviation
1	Pre-test	13.35	5.72
2	Post-test	16.57	9.94

The pre-test and post-test data of the experimental group and the control were analyzed using analysis of co-variance-as the subject of the experimental and control groups were selected at random and were not equated with reference to the parameters examined, therefore the difference between the initial means of the groups at the pre-test level had to be taken on to account during analysis of post-test difference between the means. The final means were adjusted for the difference in initial means and adjusted means were tested for significance of difference.

The skill component of subjects of experimental and control groups were evaluated through passing for accuracy in air. The data obtained on pre-test and post-test on respective skill were analyzed using Analysis of Co-Variance

TABLE 2
ANALYSIS OF CO-VARIANCE FOR EXPERIMENTAL GROUP AND CONTROL GROUP ON PASSING FOR ACCURACY IN AIR (NUMBERS)

Means	Plyometric Group	Specific Training Group	Control Group	Source of Variance	Sum of Squares	Mean Square	df	F-ratio
Pre-test Means	13.25	12.80	14.00	Between Groups	14.70	7.35	2	0.22
				Within Groups	1914.95	36.60	57	
Post-test Means	18.15	14.95	16.60	Between Groups	104.43	52.22	2	0.52
				Within Groups	5732.30	100.57	57	
Adjusted Post Test Means	18.22	15.31	16.17	Between Groups	15.05	7.53	2	0.51
				Within Groups	1256.05	22.43	56	

Insignificant at .05 level

$F_{.05} (2,57;2,56)=3.15$

The Finding concerning the pre mean score on passing in air in table 2 indicated that the two experimental groups and control group did not differ significantly as the obtained F-ratio (0.22) was much less than the tabulated F-ratio of 3.15 with (2,57) df at 0.05 level of significance, indicating that different groups were more or less equal on passing in air. An insignificant F-ratio (0.51) for the post mean scores on passing in the air among the two experimental groups and control group indicated insignificant difference from the pre to post test means among the groups In case of adjusted post means, the obtained F value (0.51) was less than the required F value of 3.15 for (2,56) df at 0.05 level. This indicated that there was insignificant differences from pre and post mean score after adjusting pre test score on passing in air for accuracy.

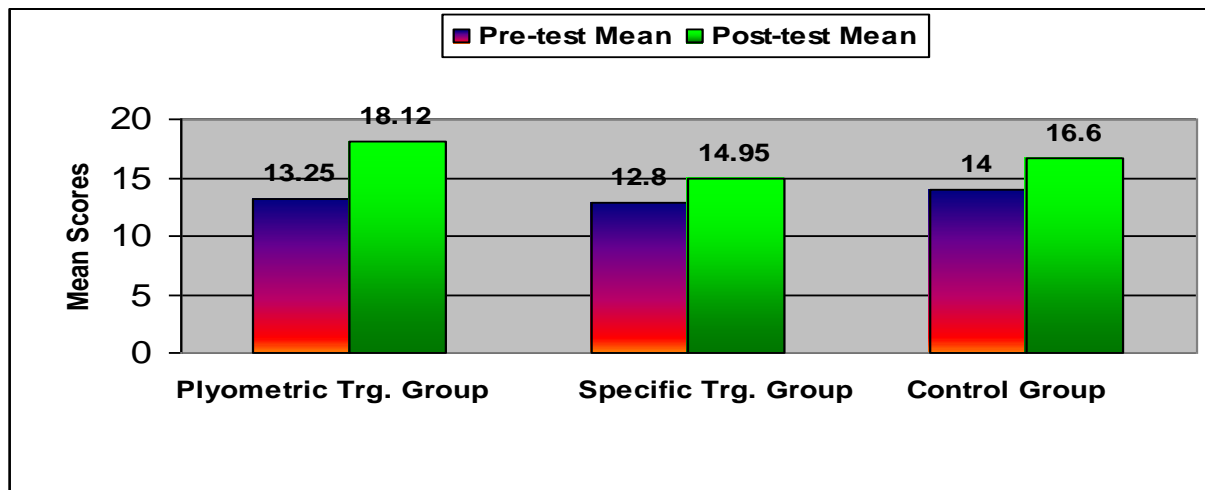


Figure1:- Pre and Post Mean Scores of Experimental Group and Control Group on Passing for Accuracy in Air.

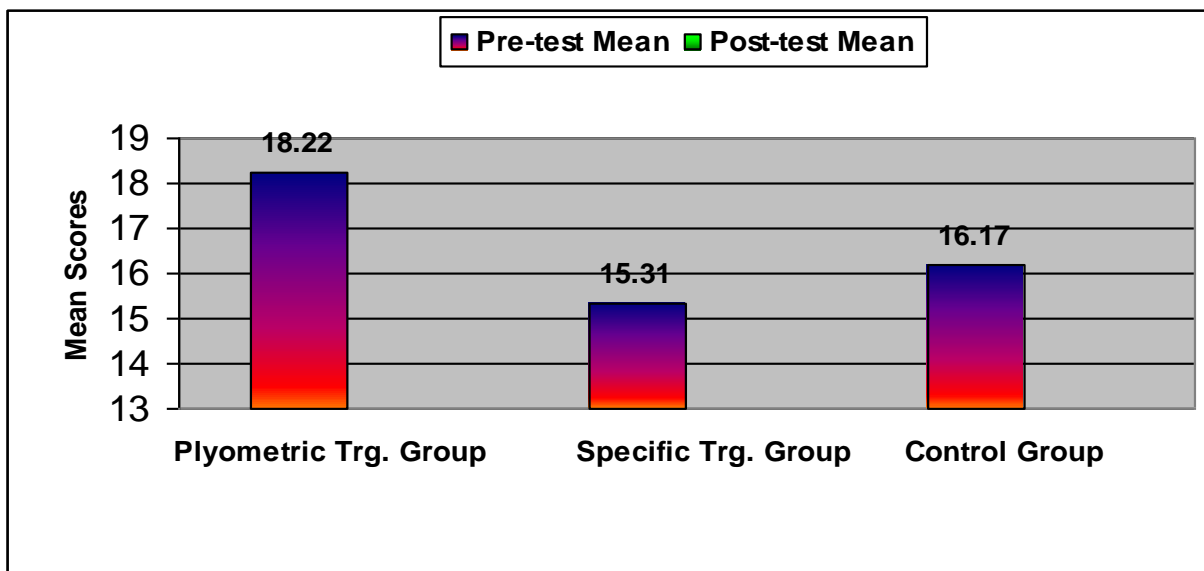


Figure 2:- Adjusted Mean Scores of Experimental Group and Control Group on Passing for Accuracy in Air

4. DISCUSSION

The purpose of present investigation was to assess the relative contribution of plyometric training and specific competitive exercises programme on soccer skill of football players. The finding pertaining to the effect of different training modalities on selected soccer skill produced insignificant results. Though both the experimental groups had higher mean gain on accuracy tasks, but in cases of passing for accuracy in air the improvement was not statistically significant. The mean scores of different groups reflect higher mean gains by the plyometric training group. This means the different training modalities did not influence the passing in air for accuracy skill of football players.

5. CONCLUSION

The finding pertaining to the effect of different training modalities on selected soccer skill produced insignificant results. The plyometric exercises or football specific competitive

exercises used in the study were not significant effective for improving the passing for accuracy in air skill of football players.

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NORMATIVE SOCIAL BELIEF OF SPORTS WOMEN AT DIFFERENT LEVELS OF PARTICIPATION AND FITNESS GROUP

Dr. Aradhna Sakxena¹, & Dr. Alka Nayak²,

Affiliations:

- ¹ Ex-Lecturer, Department of Physical Education, Maharishi Mahesh Vedic Vishwavidyalaya, Jabalpur (M.P.)
- ² Professor, Department of Physical Education, Rani Durgawati University, Jabalpur (M.P.)

ABSTRACT

The purpose of the present investigation was to analyse and compare the normative social 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 normative social belief and motivation to comply with significant others subscale among all four levels of sports women indicated statistically insignificant in all six items

Keywords: Sports Group, fitness group, Normative, Social, belief, Females.

1. INTRODUCTION

Sports participation is grounded in decision making process involving self reflection, social support, social acceptance and cultural issues. People never take decision about sports participation once and for all time. They take them day after day, as they consider how sports are related to their live.

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, 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.

3. RESULTS

To assess the normative social belief of sports Women at different levels of participation and fitness level, mean, standard deviation and ANOVA were computed and data pertaining to this has been presented in Table 1 to 3 and depicted in Figure 1.

TABLE 1
DESCRIPTIVE STATISTICS OF NORMATIVE SOCIAL BELIEF OF SPORTS WOMEN
AT DIFFERENT LEVELS OF PARTICIPATION AND
FITNESS GROUP

S,N0.	Participation Levels	Mean	SD
1	School	6.05	0.90
2	University	6.16	0.76
3	National	6.21	0.80
4.	Fitness Group	6.13	0.86

TABLE 2
ANALYSIS OF VARIANCE OF MEAN SCORE OF NORMATIVE SOCIAL BELIEF SUBSCALE
ITEMS AMONG SPORTS WOMEN OF DIFFERENT LEVELS OF PARTICIPATION
AND FITNESS GROUP.

Items	Source of Variance	Sum of Squares	df	Mean Square	F- ratio
Your friends thinks you Should	Between Groups	0.17	3	0.05	0.04
	Within Groups	498.61	421	1.18	
Your Parents thinks you Should	Between Groups	6.27	3	2.09	2.07
	Within Groups	423.74	421	1.00	
Your Doctor thinks you Should	Between Groups	2.42	3	0.80	0.68
	Within Groups	494.58	421	1.17	
Your Boy friends thinks you Should	Between Groups	3.54	3	1.18	0.59
	Within Groups	839.54	421	1.99	
Your Family thinks you Should	Between Groups	3.62	3	1.20	1.01
	Within Groups	499.35	421	1.18	
Your Professor thinks you Should	Between Groups	7.72	3	2.57	1.79
	Within Groups	604.71	421	1.43	

Insignificant at .05 level.

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

The data in table -2 indicated that the sports women of different levels of sports achievement and fitness group did not differ significantly as F- ratios for different subscale i.e. 'your friends think you should' (0.04); 'your parents think you should' (2.07); 'your doctor think you should' (0.68); 'your boy friend think you should' (0.59); 'your family think you should' (1.01); 'your Professor think you should' (1.79) were less than the required F-ratio (2.63) to be statistically significant at .05 level.

To find out whether sports women of different levels and fitness group differ on Motivation to comply with significant others subscale items towards regular participation in sports. Analysis of variance was used and data has been presented in 3.

TABLE 3
ANALYSIS OF VARIANCE OF MEAN SCORE OF MOTIVATION TO COMPLY WITH
SIGNIFICANT OTHERS SUBSCALE ITEMS AMONG SPORTS WOMEN OF
DIFFERENT LEVELS OF PARTICIPATION AND FITNESS GROUP.

Items	Source of Variance	Sum of Squares	df	Mean Square	F-ratio
Your friends thinks you Should	Between Groups Within Groups	8.01 839.34	3 421	2.67 1.99	1.34
Your Parents thinks you Should	Between Groups Within Groups	7.75 440.47	3 421	2.58 1.04	2.47
Your Doctor thinks you Should	Between Groups Within Groups	6.43 646.13	3 421	2.14 1.53	1.39
Your Boy friends thinks you Should	Between Groups Within Groups	2.68 1153.10	3 421	0.83 2.73	0.32
Your Family thinks you Should	Between Groups Within Groups	8.57 504.32	3 421	2.85 1.19	2.38
Your Professor thinks you Should	Between Groups Within Groups	4.55 789.91	3 421	1.51 1.87	0.80

Insignificant at .05 level.8.01

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

The data in table -3 indicated that the sports women of different levels of sports achievement and fitness group did not differ significant on Normative social belief and motivation to comply with significant others subscale items as the obtained F- ratios for 'what your friend think' (1.34); 'what your parents think' (2.47); 'what your doctor think' (1.39); 'what your boy friend think' (0.32); 'what your family think' (2.38); and 'what your professor think' (0.80) were less than the required F-ratio (2.63) to be significant at .05 level.

4. DISCUSSION

Visual observation of data revealed that, the national level had higher mean score (6.21) on normative social belief for exercise followed by university level (6.16); fitness group (6.13); and school level (6.05).

The result of F-ratio indicated insignificant differences for all the 6 items of normative social belief i.e. " your friends think you should" (0.04); "your parents think you should" (2.07); "your doctor think you should" (0.68); "your boy friend think you should" (0.59); "your family think you should" (1.01); and "your professor think you" (1.79).

The result pertaining the motivation to comply with significant others revealed that sports women differ insignificantly on all the 6 items i.e. " what your friend think" (1.34); "what your parents think" (2.47); "what your doctor think (1.39)"; "what your boy friend think" (0.32); "what your family think" (2.38); and "what your professor think" (0.80).

Analysis of data pertaining to the comparison of normative social belief and motivation to comply with significant others subscale among all four levels of sports women indicated statistically insignificant in all six items

The social normative belief showed statistically insignificant differences. The results for items of social normative belief among all four levels are notably similar to the studies of Godin et al. (1986); Kendzierski and Lamastro (1988); Riddle (1980) ; and Sanstroem (1982).

The normative social belief and motivation to comply with significant other subscale result indicate to statistically insignificant differences the result support the validity as did Bagozzis (1980) study of the sequence of relationship hypothesized in the theory of reasoned action than social and personal outcome belief influence behavioural intention through their influence on attitude and subjective norms.

5. CONCLUSIONS

1. National level had higher amount of normative social belief for exercise followed by university level fitness group and school level.
2. Similarity was observed among sports Women pertaining to the motivation of different levels in all the items of normative social belief.
3. Similarity was also observed among sports Women of different levels in all the items of normative social belief.
4. Normative social belief and motivation to comply with significant others subscale among all four levels of sports women indicated statistically insignificant in all six items

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**A COMPARATIVE STUDY OF OCCUPATIONAL STRESS AMONG
MALE LIBRARIANS AND FEMALE LIBRARIANS WORKING
IN VARIOUS COLLEGES OF BHOPAL**

Rekha Marskole¹, Dr. Arun Modak²

Affiliations:

- ¹ Research Scholar, Shri Satya Sai University of Technology & Medical Science, Sehore
- ² Dr. Arun Modak, Asst. Professor, Department of Nurching Science, Shri Satya Sai University of Technology & Medical Science, Sehore

ABSTRACT

The objective of the study was to compare the occupational stress among male and female librarian of M.P.. For this purpose of the study, 100 librarians (Male= 50, Female=50) from various colleges were selected. Occupational Stress Index (O.S.I) by Dr. A K Shrivastava & Dr. A P Singh was adopted in the study to measure the level of stress among the librarians. To compare the occupational stress descriptive statistics mean, standard deviation and 't' test were employed. Researcher concluded that the significant variations existed between the male and female librarians working in various colleges of Bhopal. Female librarian of Bhopal are facing higher occupational stress when compared to male librarians. It is the time to realise that working women significantly contributes towards economic and social development of the country. It was suggested that working women must be provided with peer support, favourable working environment, less working hours, proper supervision and training, assistance with child care and developing zero tolerance policies to reduce stress.

Keywords: Stress, occupation, male, female, Librarians, colleges.

1. INTRODUCTION

Stress related to one's job is referred as occupational stress. It occurs due to unexpected responsibilities and pressure on the person. Every individual in the society is affected some kind of stress in their daily life. Stress is a feeling experienced when a person thinks that the demands exceed the personal and social resources, the individual able to mobilize (Lazarus and Folkman, 1984). Stress leads to several problems like, lowering of self-esteem, inability in doing better work, loss of appetite and mood change which results in uninterested in the work, getting angry on minute provocation and it creates problems in family as well as in the society.

Occupational stress is defined as a response to chronic job-related stress, characterised by physical and emotional exhaustion (Maslach and Jackson, 1996; Onder and Basim 2008). Occupational stress refers to the process through employees perceive, appraise and respond to adverse or challenging job demand at work (Frese and Zapf; 1988). Job stress is still a major rising concern in most countries. Job stress was defined as the occurrence of negative emotions that are evoked by demanding situation in the workplace. Job stress and strain may damage mental and physical health. Whether people perceive conditions as stressful or whether these perceptions of stress lead to psychological, physiological or behavioural outcomes, however depends on individual and situational factors-conditioning variables (House and Wells, 1978; House, 1981; LaRocco, House and French, Jr., 1980.) Stress is a state of tension experienced by individuals facing extra ordinary demands, constraints or opportunities.

Occupational stress can lead to poor health make people feel sick, both at workplace and at home. Usual early signs of job stress include headache, sleep disturbance, stomach upset and difficulty in concentration. Later this leads to major diseases like cardiovascular diseases (for example stroke, myocardial infarction) mental health problems (for example depression and burnout) and musculoskeletal disorders (for example involvement of back and upper extremity). In addition to physical and psychological signs and symptoms, occupational stress can also lead to behavioral symptoms like loss of appetite; increased consumption of alcohol, drugs and tobacco; isolation from others; poor job performance and change in close family relationships. Besides, workers who are stressed are more likely to be less productive, poorly motivated and less safe at work.

In Bhopal librarians are well qualified but some are not aware of library functions or IT services involved in libraries. The library professionals are frustrated due to low salary, status, and responsibility for the missing books, and these factors are discouraging librarians to provide better library services. Training and proper implementation of new technologies is very necessary for the development of libraries, it become the cause of occupational stress which is techno stress.

2. METHODOLOGY

2.1 Selection of Subject

For the purpose of the study, 100 librarians and asst. Librarians appointed at various colleges were selected and further divided into two groups where 50 Male librarians from various colleges were kept in first group and 50 female librarians were assigned as the second group.

2.2 Instrument

Occupational Stress Index (O.S.I) by Dr. A K Shrivastava & Dr. A P Singh was adopted in the study to measure the level of stress among the librarians.

3. RESULTS

To estimate the level of occupational stress descriptive statistics mean, standard deviation and 't' test were employed.

TABLE 1
DISTRIBUTION OF SAMPLE ON LEVEL OF OCCUPATIONAL STRESS AMONG MALE AND FEMALE LIBRARIANS

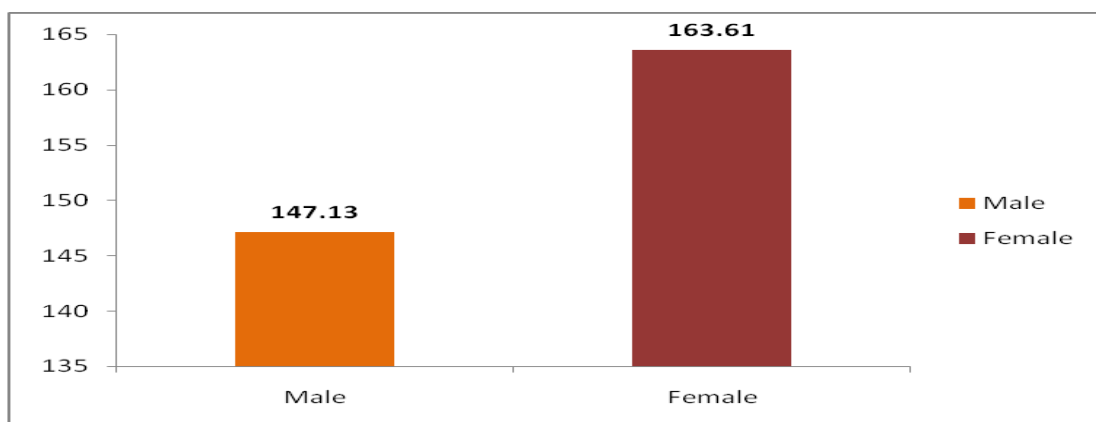
Sr. No.	Demographic Variable	Mean	Level of Stress
1	Male	147.13	Moderate
2	Female	163.61	High

Figures depicted in above table on occupational stress shows that male librarians had mean scores of 147.13 and were in moderate stress level whereas female librarians had mean score 163.61 which indicated high occupational stress among the female librarians from private colleges.

TABLE 2
COMPARISON OF MEAN SCORES ON OCCUPATIONAL STRESS AMONG male LIBRARIANS AND FEMALE LIBRARIANS

Sr. No.	Sex	N	Mean	SD	t-ratio	P-Value
1	Male	150	147.13	17.56	8.65	0.0000
2	Female	150	163.61	15.34		

From the above table mean of occupational stress score of Male Librarians mean is 147.13 and female librarians mean is 163.61. The difference between the two mean is highly significant ('t'=8.65) df =98, P < 0.05) and it is concluded that the female librarians have high occupational stress than the male librarians from various colleges of Bhopal.



4. CONCLUSION

The foregoing analysis reveals that there exist significant variations between the male and female librarians working in various colleges of Bhopal. Female librarian of Bhopal are facing higher occupational stress when compared to male librarians. It is the time to realise that working women significantly contributes towards economic and social development of the country. The growth of the working women should be looked upon from the perspective of family, state and national development. In a comparable occupational setting, working women perceive higher level of life stress and work stress It was suggested that working women must be provided with peer support, favourable working environment, less working hours, proper supervision and training, assistance with child care and developing zero tolerance policies to reduce stress

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