



DIFFERENCES IN MOTIVATION FOR PARTICIPATION IN SPORTS AMONG MALE AND FEMALE YOUTH OF GOA

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ABSTRACT

Sports is undoubtedly a fantastic way to keep oneself physically fit, mentally alert, socially well-adjusted and emotionally balanced. Motivation is the foundation all athletic effort and accomplishment. It is the ability to initiate and persist at a task. Measures have to be taken to identify the key motives for sports motivation in the youth of Goa in order to keep them moving. The purpose of the present investigation was to examine the differences in motivation for participation in sports in youth of Goa on the basis of gender. The subjects for the study 254 young men (N=173) and women (N=81) of Goa state participating in sports at various levels. Minimum inter-collegiate participation was the inclusion criteria adopted for the study. Hindi translated revised version of Sport Motivation Scale (SMS-6) with six factor by Mallett, et. al. (2007) was adopted for collecting data on motivation for participation in sports. The data was collected by the investigator during spare time of the subjects with proper orientation. Independent sample 't' test was calculated along with mean and standard deviation. It is concluded that the female sports persons are higher in motivation for participation in sports as compared to their male counterparts in Goa. Female have higher external regulation, identified regulation and overall sports motivation; whereas male have higher intrinsic motivation.

Key words: Goa, globalization, sports, motivation, gender.

1. INTRODUCTION

Goa in India within the coastal region known as the Konkan in western India is bounded by Maharashtra to the north and Karnataka to the east and south, with the Arabian Sea forming its western coast. It is India's smallest state by area and the fourth smallest by population. Goa is divided into 2 districts: North Goa and South Goa, which are further divided into 12 talukas. Goa was one of the major trade centers in India, thus it had always been attracting the influential dynasties, seafarers, merchants, traders, monks and missionaries since its earliest known history. Throughout its history Goa has undergone persistent transformation, leaving a profound impression on various aspects of its cultural and socio-economic development. Goa is popularly known for Sun, sand, and Sea (Sawant, 2013) but also a great repository of varied cultural forms. The State has a growing interest in the promotion of various forms of arts and hence its cultural ethos has led to fostering social understanding and emotional integration among the people of the State (Gokhale, Sawant, Ugavekar, 2014).

It is not at all an astonishing fact that the youth of Goa are unconditionally attached to its socio-cultural uniqueness. They always try to associate with their land, food, Konkani language, tourism and other aspects. Problems faced by Goa due to globalization in no way hinders the self-identification vehemence (Krishna Menon, 1993).

State being a world famous beach destination has witnessed the consequences of tourism and its impact on the culture mainly due to globalization and international tourists. In the last two decades, the traditional Goan culture like folk dances, music, festival celebrations etc. has taken a backdrop and western culture such as pub dancing, rave parties, casinos, nudism on the beaches, and sex trade has been at the forefront such (Gokhale, Sawant, Ugavekar, 2014).

Sports, leisure and recreation has been deeply rooted in the life style of Goans. Goa state has been contributing to National sports considerably since past. Due to immigration and out migration problems the youth of Goa are unable to focus on their health and fitness (Fernandes, Hayes and Patel, 2012). Sports is undoubtedly a fantastic way to keep oneself physically fit, mentally alert, socially well-adjusted and emotionally balanced (Shridhar, et. al., 2016). Motivation is the foundation all athletic effort and accomplishment. It is the ability to initiate and persist at a task. Motivation in sports is so important because it is inevitable to be willing to work hard in the face of fatigue, boredom, pain, and the desire to do other things. Measures have to be taken to identify the key motives for sports motivation in the youth of Goa in order to keep them moving. The purpose of the present investigation was to examine the differences in motivation for participation in sports in youth of Goa on the basis of gender.

2. METHODOLOGY

The subjects for the study 254 young men (N=173) and women (N=81) of Goa state participating in sports at various levels. Minimum inter-collegiate participation was the inclusion criteria adopted for the study. However, some of the subjects have participated at inter-University state levels and even National levels. Hindi translated revised version of Sport Motivation Scale (SMS-6) with six factor by Mallett, et. al. (2007) was adopted for collecting data on motivation for participation in sports. There are total six dimensions in the questionnaire: Amotivation, External regulation, Introjected regulation, Identified regulation, Integrated regulation and Intrinsic motivation. Four scattered questions were related to each dimension of the scale. The answers were scored on a 7 point Likert scale and ranged from 1 (does not correspond at all) and 7 (corresponds exactly). The data was collected by the investigator during spare time of the subjects with proper orientation. Independent sample 't' test was calculated along with mean and standard deviation.

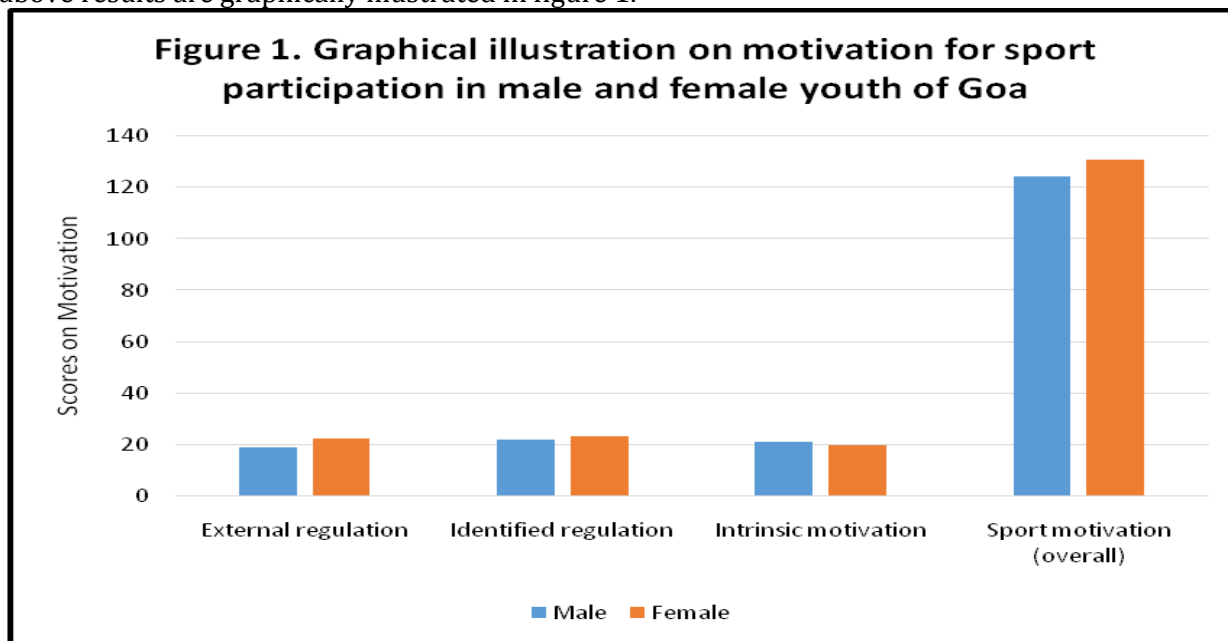
3. RESULTS

The raw data on sports motivation was subjected to descriptive statistics and to independent sample 't' test for comparing the mean score of men and women. the results are given in table 1.

TABLE 1
SUMMARY ON DIFFERENCES IN SPORTS MOTIVATION BETWEEN MALE AND FEMALE YOUTH OF GOA

	Gender	Mean ± S.D.	MD	σ_{DM}	't'	Sig (2 tailed)
Amotivation	Male	18.84±6.65	1.16	0.85	1.36	.173
	Female	20.00±5.54				
External regulation	Male	18.95±5.74	3.58	0.66	5.36	.000
	Female	22.53±2.54				
Introjected regulation	Male	21.36±5.29	0.89	0.65	1.35	.177
	Female	22.25±3.69				
Identified regulation	Male	22.17±4.93	1.20	0.61	1.97	.050
	Female	23.37±3.45				
Integrated regulation	Male	21.72±5.05	0.19	0.59	0.32	.753
	Female	21.91±3.61				
Intrinsic motivation	Male	21.29±5.26	1.40	0.68	2.05	.041
	Female	19.89±3.75				
Sport motivation (overall)	Men	124.34±21.00	6.55	2.52	2.59	010
	Women	130.89±12.53				

From table 1 it is evident that there is significant difference between male and female sportspersons in external regulation, identified regulation and overall sports motivation. It is observed that the external regulation, identified regulation and overall sport motivation is higher in female as compared to male. Male have higher intrinsic motivation as compared to female. The above results are graphically illustrated in figure 1.



4. DISCUSSION

In a study by Sarmento, Catita and Fonseca (2008) amateur football players had reported higher levels of amotivation when compared with the professionals. Self-determination theory (Deci & Ryan, 1985) suggests that athletes who compete in higher levels, characterized especially by focusing on winning, probably will be less self-determined and will present superior levels of amotivation and introjected regulation when compared with athletes who practice this sport at lower competitive levels. Wilson et al. (2004) concluded that in the female gender, introjected regulation was an important motivational force, because it appeared to strongly predict behaviours such as persistence, importance and effort put on a physical activity. The present results are contrary to that of Jiteshwar, et al. (2013) suggesting that there is no difference between male and females in sports achievement motivation level. In a study by Sarmento, Catita and Fonseca (2008) professional athletes had attributed significant higher levels of identified regulation when compared with the amateur players. It has been observed that the points of power need, approaching success and avoiding success motives of female handball players was higher than those of male handball players (Gacar, 2013). The differences found concerning the several motivation determinants in function of the competitive level, underline the existence of a complex relation between the competitive level and motivation (Sarmento, Catita and Fonseca, 2008). Soyera, Sari and Talaghirb (2014) believes that the democratic behavior, training and instruction behavior and social support behavior could be used more often by sport coaches. It seems that, in this way, athletes do not avoid failing and they could try to make more effort to be successful.

5. CONCLUSION

It is concluded that the female youth are higher in motivation for participation in sports as compared to their male counterparts in Goa. Female have higher external regulation, identified regulation and overall sports motivation; whereas male have higher intrinsic motivation.

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LEADERSHIP AND SELF-CONTROL AMONG ALL INDIA INTER UNIVERSITY MEN AND WOMEN NETBALL PLAYERS

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ABSTRACT

Leadership (Ld) is the ability to direct and control the attitude or actions of others. This is especially true when this person exhibits such influence on a group. High Leadership (Ld) individuals usually occupy such positions in a group that commands a certain authority or potential for controlling the behaviour of this group. Low scoring individuals are undependable, obstructive and prefer to be sound followers. They are group dependent and impatient and are likely to escape when faced with responsibility. Self Control may be treated as the ability to bind anxiety. High scoring individuals generally have strong control over emotional life and behaviour in general. The high Self Control person shows socially approved character responses, behaviour control, persistence, foresight, considerateness of others and conscientiousness. Low Self Control (Sc) is major contributor to the anxiety pattern and serves as important signaling the individual's inability to keep his/her emotions in order. To achieve the purpose of the study, 264 men and women netball players who took part in "All India Inter University netball Championship" held at Punjab University Chandigarh in the year 2015-2016 were selected as population. To assess Leadership (Ld) and Self- Control (Sc) of the players, Multi Dimensional Assessment of Personality (MAP) series was administrated for all 264 Netball players, out of which 214 netball players scored 1-6 in Validity Index; these 214 Netball players were selected as subjects for this study. Further these 214 netball players are divided into two equal groups on the basis of gender (men and women) between the age group of 18 to 26 years. Leadership (Ld) and Self Control (Sc) scores were analyzed by t-test. Results revealed that there is significant difference between mean scores of Leadership (Ld) and Self-Control (Sc) among men and women netball players.

Keywords: Leadership, Self- Control, Gender, MAPS and Netball Players.

1. INTRODUCTION

Personality reveals the psychological make-up of an individual through his behaviour. In fact, it is the quality of a person's total behaviour. Personality is a dynamic and continuous process of learning in which the individual acquires the typical modes of responses. The word personality is used to subsume all the factors, inherited or acquired, which make up an individual. It is the total sum of what one is (his psychological make-up), one's typical response patterns (to adjust in the environment or how one responds to the world around him), and behaviour patterns how one behaves differently in different situations (Singh, 2016)¹. Personality refers to the characteristics patterns of the behaviour and ways of thinking that determine a person's adjustment to his environment. Personality can also be defined as individual's characteristics, thoughts, emotional responses, and behaviours that are comparatively stable over time and across circumstances. Personality is also defined as an individually unique, consistent pattern of behaviour and psychological attributes that over time and across situations (Wani, 2016)². Personality is the set of characteristics and inner tendencies that determine those traits that are common and those that differ in behaviour (thoughts, feelings and emotions) of persons that have sort of continuity in time and that may not be easily understood in terms of the immediate situation alone (Maddi, 1976)³.

Personology is the study of personality which personologists think as the underlying, relatively stable, psychological structures and processes that organize human experiences and also a person's actions and reaction to the environment (Lazarus, 1979)⁴. Morgan examined that athlete from various sub groups possess different personality structures such as different psychic needs which should be handled in personalized ways (Morgan, 1980)⁵. When athletes participate in many competitive sport, their underlying personality characteristics inevitably contribute to how they behave. Personality has been defined as "psychological qualities that contribute to an individual's enduring and distinctive patterns of feeling, thinking and behaving (Cervone, 2010)⁶. Hampson (2012), found that personality traits can Predict outcomes for individuals (e.g. happiness, health), dyads (e.g. relationship Commitment), groups (e.g. team cohesion), and society (e.g. criminal behaviour). With such a strong foundation of research evidence it is surprising that personality traits and their Contribution to athletic success has often been viewed in rather cynical and pessimistic manner (Hampson, 2012)⁷.

Personality is normally measured using a self-report questionnaire on which respondents indicate their feelings or behaviors, yielding measurements of traits such as neuroticism, anxiety, extraversion, dominance, sensitivity, assertiveness, conscientiousness, and agreeableness. Personality either predicts or is related to many things, as well as performance motivation (Judge, 2012)⁸. Personality is the collection of emotional and behavioural traits that characterize a person. That is, individual's personality is how he/she presents himself/ herself to the world. It is important for leadership effectiveness. Person's public persona is the catalyst for enrolling followers (Aurthur, 2016)⁹.

Main aim of the study was to find out the Leadership quality and level of self control among Men and Women Netball Players. It was hypothesized that there would be no significant differences between all Indian inter university Men and Women netball players on the variable Leadership. It was also hypothesized that there would be no

significant differences between all India inter university Men and Women netball players on the variable Self Control.

2. METHODOLOGY

2.1 Selection of subjects

264 Subjects were selected for the purpose of present investigation. Out of which 214 players were scored 1-6 in Validity Index (VI). The respondents were equally divided into two equal groups on the basis of gender 107 men and 107 women, between the age group of 18 to 26 years.

2.2 Selection of tool

Multi Dimensional Assessment of Personality (MAP) series Form-A, standardized by Sanjay Vohra (2011) was used to assess the leadership qualities and self control among players. The questionnaire consists of 147 items with three alternatives in each item.

2.3 Data collection

To achieve the purpose of the present study, the investigator has selected 264 Netball players from different universities of India who took part in All India Inter University Netball championship Men and Women (M & W) held at Punjab University Chandigarh during the year march 2016.

2.4 Statistical Technique

For analysis of collected data Mean and Standard Deviation, and t-test was applied for testing the hypothesis at 0.01 level of significance .

3. RESULTS

TABLE 1
MEAN AND STANDARD DEVIATION, STANDARD ERROR MEAN, MEAN DIFFERENCE
AND T- VALUE OF RESPONDENTS IN RESPECT TO THEIR LEADERSHIP SCORES

Variable	Gender	N	Mean	S.D	SEM	M.D	df	t-value
Leadership	Men	107	6.67	0.99	0.09	0.98	212	7.57**
	Women	107	5.69	0.90	0.08			

**significant at 0.01 level

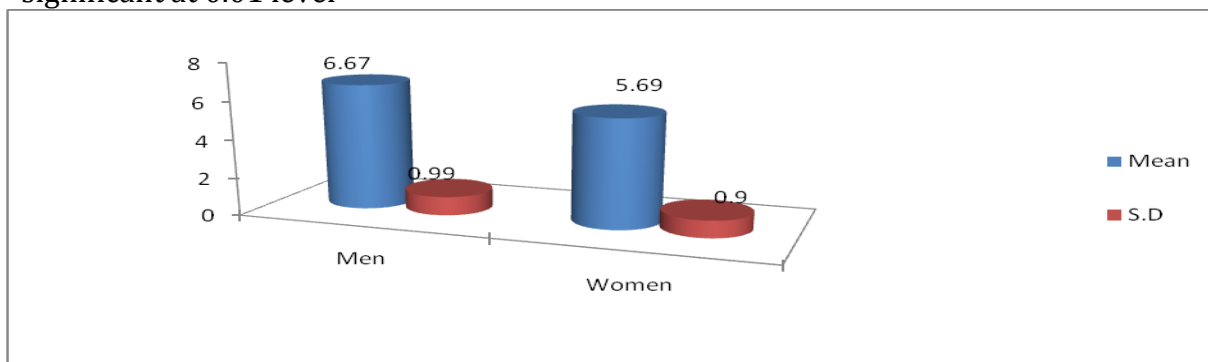


Fig - 1: Graphical representation of mean and standard deviation of respondents in respect to their leadership scores

TABLE 2
MEAN AND STANDARD DEVIATION, STANDARD ERROR MEAN, MEAN DIFFERENCE
AND T- VALUE OF RESPONDENTS IN RESPECT TO THEIR SELF CONTROL SCORE

Variable	Gender	N	Mean	S.D	SEM	M.D	df	t-value
Self Control	Men	107	6.61	1.06	0.10	0.92	112	6.79**
	Women	107	5.96	0.93	0.08			

**significant at 0.01 level

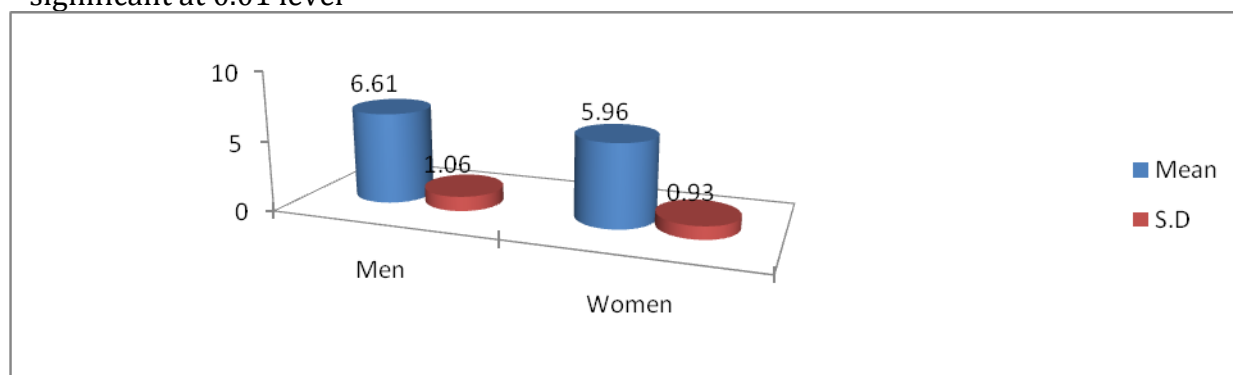


Fig - 2: Graphical representation of mean and standard deviation of respondents in respect to their Self control scores

4. DISCUSSION

The present study aimed to find out the Leadership quality and self control among Men and Women Netball Players. For that purpose out of 264 Netball players, 214 players scored 1-6 in validity index; were selected as subjects for this study. Further these 214 players are divided into two equal groups on the basis of gender (men and women) between the age group of 18 to 26 years. Multi Dimensional Assessment of Personality (MAP) series Form-A, standardized by Sanjay Vohra (2001)¹⁰ was used to assess the leadership qualities and self control among players. The questionnaire consists of 147 items with three alternatives in each item.

The results of the present study demonstrated that there is a significant difference found between the mean scores of Men and Women Netball Players in respect to their leadership qualities, the mean, S.D, SEM, M.D and t- value of this group was found [(Men Players (M= 6.67, S.D= 0.99, SEM= 0.09, Women Players (M= 5.69, S.D= 0.90, SEM=0.08), M.D =0.98, and t- value was found 7.57] respectively. The results also revealed that men players have more leadership qualities than women players, the obtained t- value was found significant at 0.01 level of significant, hence the first hypothesis is rejected.

The results of the present study also highlighted that men netball players have higher self control than women players as the mean score (6.61) of men players is more than mean scores (5.96) of women players. The S.D, SEM, and M. D of this group was found [(Men Players (S.D= 1.06, SEM= 0.10, Women Players (S.D= 0.93, SEM=0.08), and M.D =0.92)] respectively. The second hypothesis is also rejected as the obtained t- value (6.79) of men and women players in respect to self control was found more that tabulation value at 0.01 level of significance therefore on the basis of the present study we can status that men have more self control than women players.

5. CONCLUSION

On the basis of the findings of the present we may conclude that men netball players have higher leadership qualities and self control than women netball players respectively.

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EXAMINING MOTIVATION FOR SPORTS PARTICIPATION IN YOUTH OF GOA PARTICIPATING IN INDIGENOUS AND NON-INDIGENOUS SPORTS

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ABSTRACT

The state of Goa has one of the most extensive health systems in India, prevention, early detection and management of lifestyle disorders and other non-communicable diseases is of prime importance. Youth concerns have been recognized by the National Youth Policy. Research led by the authors in the state of Goa has reported strong relationships between reproductive tract complaints, tobacco and alcohol use, depression, and experiences of violence, indicating that these diverse outcomes may influence each other and/or may share similar risk factors. Physical activities, sports and other allied activities play an important role in dealing lifestyle related disorders prevailing in the state of Goa. A detailed assessment of motivations for participation in physical activities and sports is the need of the hour. Hence, researcher was of specific interest to examine and compare the motivation for sports participation in youth of Goa participating in indigenous and non-indigenous sports. The subjects for the study were 254 young men (N=173) and women (N=81) belonging to the state of Goa. Their age ranged between 16 to 25 years. All the subjects were amateur sportspersons playing from inter-collegiate to National level. The sports persons in indigenous sports events (N=43 in boys and N= 29 in girls) included Kabaddi and Kho-kho; and the non-indigenous (N=130 in boys and N= 52 in girls) included football, cricket, volleyball, Table tennis, Badminton, Hockey, Handball etc. Data on motivation for participation in sports was collected through The 24-item Sport Motivation Scale (Mallett, et. al. (2007). Purposive random sampling was used in the present investigation. The data was collected by the researcher himself during spare time of the subjects with proper orientation. Independent sample 't' test was calculated along with mean and standard deviation. Male and female youth of Goa participating in Non-indigenous sporting events like football and cricket have greater motivation than their counterparts in indigenous sports events.

Key words: youth, Goa, sports, indigenous, football, health, non-communicable diseases, motivation.

1. INTRODUCTION

In our Goa also called, "The pearl of the East", is one of the states of India known for attracting tourists, both national and international. Having a population of about 1.5 million people, among other things Goa is known for its churches, temples, beaches, forts, music festivals, cuisine, cultural festivals etc (Falleiro, 2015). The uniqueness of this place is the beautiful blend of Portuguese and Goan culture which is vividly seen in the cuisine, lifestyle and architecture of houses and monuments which adds to the beauty and extraordinary experience of this destination. Goa is said to be India's richest state with a per capita income of two and a half times that of the country; and it was ranked the best placed state by the Eleventh Finance Commission for its infrastructure and ranked on top for the best quality of life by the National Commission on Population based on 12 Indicators (*Economic Survey 2013-14*, 22). Fourth smallest state in India in terms of population and smallest in terms of area, Goa has a coastline of about 105 kilometers. Having a total of about 269 kms of National Highways, one major port (besides five minor ports), one airport, besides rail connectivity, Goa is well connected to other parts of the country. The Goa state, in spite of its small size, generally ranks among the top 12 tourist destination states in India (Chari, 2014).

The popular costal belt of Goa has lost its uniqueness, distinctiveness and charm due to ill effects of globalization and commercialization. This haphazard development coupled with poor quality facilities, amenities, overcrowding and littering on beaches, misbehavior by hawkers, drugs and run of the mill activities has pulled down the image of Goa (Kamat, 2010; and Falleiro, 2015).

Recent surveys and statistics showed an alarming increase in Hypertension, Diabetes Ischemic Heart Disease, Cardiovascular Disease, Cancer etc all leading to a high morbidity & mortality. The spurt in these cases is mainly attributed to the stressful life and change in lifestyle like food habits and a sedentary and affluent life. Government of Goa has attained the goal of "Health For All" by the year 2000 A.D. through its various health and medical care programmes. Goa is therefore considered as one of the best performing states in the matter of health & medical care. Although, the state of Goa has one of the most extensive health systems in India, prevention, early detection and management of lifestyle disorders and other non-communicable diseases is of prime importance (Citizen Charter, 2008).

There is a growing evidence base in developing countries of the effectiveness of interventions targeting health outcomes in youth [13-15]. There are nearly 350 million people aged between 10 and 24 years in India (un.org). Youth concerns have been recognized by the National Youth Policy (NYP, 2003). Research led by the authors in the state of Goa has reported strong relationships between reproductive tract complaints, tobacco and alcohol use, depression, and experiences of violence, indicating that these diverse outcomes may influence each other and/or may share similar risk factors (Patel, and Andrews, 2001). Conditions such as depression are associated with "non-traditional" lifestyles and urban residence (Pillai, et. al., 2008). These include school-based, curriculum-oriented psycho-education usually led by adults (Chen, et. al., 2006) information communication approaches (Mbizvo,, et. al., 1997) and community-based interventions delivered by peers, health workers, or provision of health services (Reddy, et.al, 2002).

Physical activities, sports and other allied activities play an important role in dealing lifestyle related disorders prevailing in the state of Goa. Football is a sensational non-indigenous sport having greatest impact on the youth of Goa. Indigenous sports like Kabaddi

and Kho-Kho can equally contribute to overall wellbeing of youth. Such cost effective activities need to be promoted especially in the youth to establish healthy and fit society (Speizer, Magnani and Colvin, 2003). There were pilot projects like 'YuvaMitr' ("friend of youth" in the Konkani language) to assess the acceptability, feasibility, and potential effectiveness of a multicomponent, population-based intervention in improving a range of priority health outcomes for youth aged 16–24 years in urban and rural communities in Goa (Balaji, et. al, 2010). A detailed assessment of motivations for participation in physical activities and sports is the need of the hour. Hence, researcher was of specific interest to examine and compare the motivation for sports participation in youth of Goa participating in indigenous and non-indigenous sports.

2. METHODOLOGY

2.1 Selection of Subjects

The subjects for the study were 254 young men (N=173) and women (N=81) belonging to the state of goa. Their age ranged between 16 to 25 years. All the subjects were amateur sportspersons playing from inter-collegiate to National level.

The sports persons in indigenous sports events (N=43 in boys and N= 29 in girls) included Kabaddi and Kho-kho; and the non-indigenous (N=130 in boys and N= 52 in girls) included football, cricket, volleyball, Table tennis, Badminton, Hockey, Handball etc.

2.2 Instrumentation

Data on motivation for participation in sports was collected through The 24-item Sport Motivation Scale (Mallett, et. al. (2007). The scale was based on Self Determination Thoery and consisted of six subscales with four items attached to each. The Sport Motivation Scale has strong psychometric properties (Pelletier et al.; Vallerand & Losier, 1999). Confirmatory factor analysis was used to support the factor structure, while correlations between subscales and criterion measures were consistent with theoretical predictions. The answers were scored on a 7 point Likert scale and ranged from 1 (does not correspond at all) and 7 (corresponds exactly).

2.3 Research Design

Purposive random sampling was used in the present investigation.

2.4 Statistical Technique

The data was collected by the researcher himself during spare time of the subjects with proper orientation. Independent sample 't' test was calculated along with mean and standard deviation.

3. RESULTS

The raw data on sport motivation scale was subjects to appropriate statistical analysis and the results of men section are presented in table 1.

TABLE 1
SUMMARY OF ‘T’ TEST ON DIFFERENCES IN SPORTS MOTIVATION BETWEEN MALE
YOUTH OF GOA PARTICIPATING IN NON-INDIGENOUS AND
INDIGENOUS SPORTS EVENTS

Sub scales	Events	Mean \pm SD	t	Sig. (2 tailed)	Mean Difference	Std. Error Difference
Amotivation	Non-indigenous events	21.02 \pm 4.91	1.343	.181	1.13936	.84864
	Indigenous events	19.88 \pm 4.54				
External regulation	Non-indigenous events	20.55 \pm 4.34	1.550	.123	1.22057	.78762
	Indigenous events	19.33 \pm 4.87				
Introjected regulation	Non-indigenous events	23.35 \pm 2.72	4.111	.000	2.35385	.57262
	Indigenous events	21.00 \pm 4.51				
Identified regulation	Non-indigenous events	22.64 \pm 3.97	1.084	.280	.84776	.78203
	Indigenous events	21.79 \pm 5.66				
Integrated regulation	Non-indigenous events	22.78 \pm 3.47	2.432	.016	1.59088	.65424
	Indigenous events	21.19 \pm 4.40				
Intrinsic motivation	Non-indigenous events	22.48 \pm 3.65	3.076	.002	2.26762	.73729
	Indigenous events	20.21 \pm 5.53				
Sport motivation (overall)	Non-indigenous events	132.82 \pm 13.64	3.405	.001	9.42004	2.76621
	Indigenous events	123.40 \pm 20.86				

From table 1 it is evident that there is significant difference in introjected regulation, integrated regulation, intrinsic motivation and overall sports motivation among male youth of Goa participating in non-indigenous and indigenous sports events. Results of female section on sport motivation in non-indigenous and indigenous sports events are given in table 2.

TABLE 2
SUMMARY OF 'T' TEST ON DIFFERENCES IN SPORTS MOTIVATION BETWEEN FEMALE YOUTH OF GOA PARTICIPATING IN NON-INDIGENOUS AND INDIGENOUS SPORTS EVENTS

	events	Mean ± SD	t	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Amotivation	Non-indigenous events	20.12±5.53	.250	.804	.32228	1.29120
	Indigenous events	19.79±5.65				
External regulation	Non-indigenous events	22.04±2.44	2.410	.018	1.37533	.57066
	Indigenous events	23.41±2.50				
Introjected regulation	Non-indigenous events	22.04±3.50	.678	.500	.58223	.85880
	Indigenous events	22.62±4.06				
Identified regulation	Non-indigenous events	22.73±3.38	2.290	.025	1.78647	.78029
	Indigenous events	24.52±3.33				
Integrated regulation	Non-indigenous events	20.19±2.37	6.606	.000	3.49735	.52945
	Indigenous events	23.69±2.12				
Intrinsic motivation	Non-indigenous events	19.63±3.17	4.634	.000	3.26194	.70391
	Indigenous events	22.90±2.77				
Sport motivation (overall)	Non-indigenous events	126.75±9.09	4.450	.000	10.18103	2.28774
	Indigenous events	136.93±11.15				

From table 2 it is apparent that there is significant difference in external regulation, identified regulation, integrated regulation, intrinsic motivation and overall sports motivation among female youth of Goa participating in non-indigenous and indigenous sports events.

4. DISCUSSION

It is understood that the male youth of Goa participating in Non-indigenous sports events like football, cricket, Basketball etc. have higher motivation than their counterparts in indigenous sports like Kabaddi and kho-kho in terms of introjected regulation, integrated regulation, intrinsic motivation and overall sports motivation.

It is found that the female youth of Goa participating in Non-indigenous sports events have higher motivation than their counterparts in indigenous sports in terms of external

regulation, identified regulation, integrated regulation, intrinsic motivation and overall sports motivation.

To Tsitskari, et. al. (2015) it seemed the that cultural variations may play a significant role in the conceptualization of motivation. Comparing sport motivation between sport participants of different cultures or nationalities will give a more focused approach to define and segment international sport consumer markets.

Research by Allen (2003) provided support for a social view of motivation in youth sport. Participants endorsed two types of social motivational orientations, and there was support for the social motivation approach as an additional explanation of female adolescents' sport interest and enjoyment. It is encouraging that adolescent females, for which a decline in sport participation has frequently been reported (Armstrong & Van Mechelen, 1998; U.S. Dept. of HHS, 1996), are interested in and enjoy their sport involvement. Although further research is needed to clarify the relationships among social and physical ability motivation variables, this study sheds some light on the contribution that a social motivation approach makes toward understanding the views of adolescents which may influence their motivation to participate in sport.

Motivation for sport activities has become a very popular area of interest among sport psychologists. Kondric, et. al. (2013) found the latent structure of sports students' types of motives as consisting of six factors (dimensions), similar as in other researches. Statistically significant factors of differences in motivation to participate in sport activities among sports students from three different countries were found. Significant sex differences in motivation to participate in sport activities for all sports students from three different countries were also found. Relevant age-based differences among the students was not found. The importance of the pleasure to be gained from participating in sports was reinforced.

The reasons for differences observed in motivation for sports participation may be attributed to negligence of indigenous sports and games in the state of Goa and greater emphasis laid on football and cricket. In spite of wide spread Western influence on socio-economic and cultural aspects of Goa, indigenous activities need to be promoted at youth levels in order to derive benefits of such inexpensive activities. Indigenous sports activities, in fact, uphold Indian culture in its true spirit.

5. CONCLUSION

Male and female youth of Goa participating in Non-indigenous sporting events like football and cricket have greater motivation than their counterparts in indigenous sports events.

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COMPARISION OF SELECTED MOTOR FITNESS COMPONENTS OF MALE PLAYERS BELONG TO DIFFERENT TEAM GAMES

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ABSTRACT

The Purpose of the present study was to compare the selected motor fitness components in male players of different team games. . One hundred and twenty male players belong to handball, basketball, football and volleyball having equal representation of 30 subjects each team game were selected at randomly as subjects for this study. All the subjects were tested in pull-ups and 50 meter dash, to collect data for selected motor fitness components . For testing the significance of difference among the mean in selected motor fitness components of male players of different team games groups an analysis of variance was computed for each test item, separately. The analysis of variance and scheffe's test clearly revealed the difference among male players of different team games in their speed as well as arm and shoulder strength components. of motor fitness components.

Keywords:: Motor fitness, components . Male players, handball, football, basketball, volleyball

1. INTRODUCTION

Players in various games have need of optimum physical fitness. In physical education Many complexes are easily overcome by success in physical activities. In childhood and adolescence periods, most often physical inaptitude creates inferiority complex in an individual. Athletic success can help in getting rid of it and enhances ones self esteem which ultimately depends upon the degree of physical fitness of that individual⁸.

Modern age is an age of technology which inhibits physical activity. Machines are used to perform much of our work and we are forced to lead a sedentary life. Our life span is increasing but physical fitness is deteriorating. Most of our leisure time is also passed in a very inactive way sitting before television .

There are many factors which influences growth basically heredity furnishes the frame of reference for times along which growth and development takes place. Important as heredity is in the growth and development of the individual, there are wide limits within which environmental factors may become influential. Perhaps heredity does set the boundaries but environment and the impact of mature dictate how one falls within these limits. Environmental factors which can significantly influence the growth and development are: nutrition climate, outdoor living, fresh air, sunshine, exercise and rest.

The dominance of different components of motor fitness is not uniform in various activities of game and sports. There are certain activities in which speed is dominating factors, in some sports strength dominates whereas in a large number of activities endurance is limiting factors. Therefore, after assessing the variation among components of motor fitness of children, the teacher of physical education will be in a better position to group the children according to their ages for effective participation in physical education activities.

Therefore, the study of Learner is highly specific to the learning situation for the most effective assessment of the learner. Each teacher must individually measure and evaluate the characteristics and ability of the group for which he is responsible. The purpose of the present study was undertaken to compare the motor fitness components in male players of different team games

2. METHODOLOGY

2.1 Selection of Subjects

120 Male players studying in various senior Secondary School of Tribal Welfare Department of Chhattisgarh were selected randomly from handball, basketball, football and volleyball to serve as the subjects of the study. Thirty male players from each team games age ranging from 15 to 18 years were selected randomly.

2.2 Selection of Test Items

S.NO.	Tests
1.	Pull ups
2.	50 Meter Dash

2.3 Criterion Measures

1. Number of correctly executed pull-ups,
2. Time taken to run a distance of 50 meters as fast as possible recorded to the 1/10th of a second.

2.4 Scoring of Data

Number of correctly executed pull ups and time taken to ran a distance of 50 meter as fast as possible recorded 1/10th of a second, For the purpose of making comparison among various team games male players, raw scores were directly used,

2.5 Statistical Analysis

For finding out the significance of difference of means among the various age groups an analysis of variance (F ratio) was used which was followed by Scheffe's Test of post-hoc comparison »s to determine the significance of difference between paired means.

3. RESULTS

To find out the significant difference among the means in selected Motor components of various team games male players, Mean, SD and F-ratio were computed. To find which of the differences among the paired means were statistically significant, the Scheffe's test was applied and the data pertaining to this is presented in Table 1-4.

TABLE 1
ANALYSIS OF VARIANCE OF THE MEAN DIFFERENCES OF SPEED OF MALE PLAYERS OF VARIOUS TEAM GAMES

Sources of Variance	df	Sum of Squares	Mean Square	F-ratio
Within Groups	3	91.85	27.28	11.70*
Between Groups	116	270.84	2.33	

*Significant at .05 level, $F_{.05}(3, 120)=2.68$

It is evident from Table 1 that the significant difference existed among the means of male players of various team games on speed, as the F-ratio of 11.70 was high than the required value $F_{.05}(3, 236)=2.68$. In order to find out, which of the differences among the paired means were statistically significant the Scheffes's Test was applied and data pertaining to this have been presented in Table 2

TABLE 2
SIGNIFICANCE OF DIFFERENCES BETWEEN THE OEDERED PAIRED MEANS ON SPPEED OF MALE PLAYERS OF DIFFERENT TEAM GAMES

Mean Scores					
Handball	Basketball	Football	Volleyball	Paired Mean Difference	C.I.
8.08	8.30	-	-	0.22*	0.04
8.08	-	8.23	-	0.15*	0.04
8.08	-	-	7.95	0.13*	0.04
-	8.30	8.23	-	0.07	0.04
-	8.30	-	7.95	0.35*	0.04
-	-	8.23	7.95	0.28*	0.04

*Significant at .05 level

TABLE 3
ANALYSIS OF VARIANCE OF THE MEAN DIFFERENCES OF DIFFERENT AGE GROUPS ON ARM AND SHOULDER STRENGTH

Sources of Variance	df	Sum of Squares	Mean Square	F-ratio
Within Groups	3	249.85	83.28	4.41
Between Groups	116	2186.80	18.85	

*Significant at .05 level, $F_{.05}(3,236)= 2.68$

It is evident from Table 3 that the significant difference existed among the means of male players of various team games on speed, as the F-ratio of 4.41 was high than the required value $F_{.05}(3, 236)=2.68$. In order to find out, which of the differences among the

paired means were statistically significant the Scheffes's Test was applied and data pertaining to this have been presented in Table 4

TABLE 4
SIGNIFICANCE OF DIFFERENCES BETWEEN THE OEDERED PAIRED MEANS ON ARM AND SHOULDER STRENGTH FOR DIFFREENT AGE GROUPS

Mean Scores					
Handball	Basketball	Football	Volleyball	Paired Mean Difference	C.I.
9.55	7.40	-	-	2.15*	1.61
9.55	-	11.24	-	1.69*	1.61
9.55	-	-	12.03	2.48*	1.61
-	7.40	11.24	-	3.84*	1.61
-	7.40	-	12.03	4.63*	1.61
-	-	11.24	12.03	0.79	1.61

*Significant at .05 level

4. DISCUSSION

The analysis of data using analysis of variance (F-ratio) and scheffe's test of post-hoc comparison, shows that difference exists among male players of different team games on selected motor fitness component i.e. speed, Arm and shoulder strength.

Speed with which an individual can run depends upon the length of stride and frequency of stride, steady increase in body size and its components increases in level, length and strength provide increase length and tempo to the running stride.

Increase in body weight would normally reflect increases in the amount of muscle tissue. This increase in muscle tissue coupled with increase lever length resulting from growth in height should result in greater power and thus increase in motor achievement. Growth in height in school years is apparently reflected adequately by increase in weight. With this constant increase in body size and strength, it is also to be expected that there are also consistent improvement in the basic skills of running, jumping, and throwing as the age increases.

Therefore significant difference in performance of male players of different team games on selected motor fitness components may be due nature of different games.

5. CONCLUSIONS

1. Significant difference was observed among male players of various team games in their speed as well as arm and shoulder strength Performance of boys ranging in components of motor fitness.
2. Basketball male players were found to have more speed followed by football, handball and volleyball players.
3. Volleyball male players were found to have more arm and shoulder strength followed by football, handball and Basketball players.

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PHYSIOLOGICAL RESPONSES OF ZUMBA: AN OVERVIEW UNDERSTANDING THE POPULAR FITNESS TREND

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ABSTRACT

Physical inactivity is a commonly observed cause of increasing incidence of lifestyle diseases. As dancing is a physical activity that can be tailored to fit a target population's age and culture therefore, zumba is becoming a global dance fitness activity to reduce lifestyle disease epidemic. It has a mixture of popular entertaining music, different dance styles and aerobic exercises which improves the health of all age groups. Thus, physiological effects of zumba can be used as an adjuncts to conventional medicine for prevention of various lifestyle diseases e.g. diabetics and obesity. Several neurological benefits of zumba have been identified which ranges from memory improvement to strengthened neuronal connections. Zumba is able to enhance cardio vascular endurance and cardio respiratory functions. It incorporates movement of large muscle groups for aerobic endurance, strength training and flexibility thereby contributing to improved health in all ages, especially in the geriatric population. It also maintains bone density and prevents osteoporosis in postmenopausal women. Various researchers have recorded the positive effect of Zumba on weight, BMI, body fat mass, hormonal profile and reproductive function. Psychosocial aspect of health also shows encouraging results in Zumba intervention. To summarize, these findings reflect that Zumba intervention can be explored further as a therapeutic tool in Complementary and alternative medicine for improving health and preventing lifestyle diseases.

Keywords: Zumba, Musculoskeletal, Psychosocial, Geriatric, cardio vascular endurance

1. INTRODUCTION

Zumba is a global dance fitness program focused on whole-body rhythmic movements which fuses fitness and entertainment. It was designed by Alberto "Beto" Perez during the 1990s (Lloyd, 2011) and involved Latin dance, Aerobic exercises, Hispanic music, Latino music and a mixture of pop music. It has gained much popularity in the last two decades. Zumba is chosen as review domain as it is gaining rapid popularity especially in youngsters. Its motto is "Ditch the workout. (Join the Party. Parcher A., Zumba website). There are a wide variety of Zumba classes targeting specific participant groups, including children and elderly persons (Parcher A., Zumba website). The goals of Zumba are to improve strength, balance, coordination and cardiovascular endurance (Parcher A., Zumba website). Dimondstein (1985) states that, "The practice of making dance an adjunct of physical education has placed it in the same category as athletics or physical skills. Zumba although dance orientated is perceived as a physical exercise activity. This paper reviews the understanding of the popular novel emerging discipline Zumba which can be used worldwide as non-pharmacological form of promotive and preventive measure for various life style diseases. To summarize, the purpose of the current review was to examine the effectiveness of Zumba in improving the physical health of all, both those with health conditions and those considered healthy.

1.1 Zumba : Dance intervention

Approximately 15 million people take weekly Zumba classes in over 200,000 locations across 180 countries. Zumba classes are typically 45 minutes-1 hour long and are taught by instructors licensed by Zumba Fitness, LLC. The exercises include music with fast and slow rhythms, as well as resistance training. The music comes from the following dance styles: Cumbia, Salsa, Merengue, Mambo, Flamenco, Chachacha, Reggaeton, Soca, Samba, Hip hop music, Axé music and Tango. Squats and lunges are also included in it. There are nine different types of classes for different levels of age and exertion. Zumba Gold is a program designed for the needs of the elderly. Zumba Step is a lower-body workout that incorporates Zumba routines and step aerobics with Latin dance rhythms. Zumba Toning is for the people who do their workouts with toning sticks. Zumba Toning will target the abs, thighs, arms, and other muscles throughout the body. Zumba Toning provides participants with a cardio workout and strength training. Aqua Zumba classes are held in a swimming pool. The instructor leads the class poolside while participants follow in shallow water. Moves have been specially adapted to combine the same dance movements used in a Zumba Fitness class with those used in aqua fitness classes. Zumba in the Circuit combines dance with circuit training. These classes usually last 30 minutes and feature strength exercises on various stations in timed intervals. Zumba Kids and Zumba Kids Jr. classes are designed for children between the ages of 4 and 12. Zumba Sentao is a chair workout that focuses on using body weight to strengthen and tone the body. Strong by Zumba was launched in 2016. This specialty combines high intensity interval training with Synced Music Motivation (Wikipedia: Zumba).

1.2 Zumba: Physiological Mechanism

Zumba involves dance and aerobic exercise performed to energetic music. Convincing benefits of dancing activities on physiologic, endocrine, cognitive and psychological levels have previously been shown (Kattenstroth, J.C.; et.al. ; 2013, Belardinelli, R 2007, Kim, S.H.et.al.; 2011, Shimamoto, H.; 1998, Murrock, C.J.; 2014, Coubard, O.A.; et.al.; 2011, Duberg, A.; et.al.; 2013). Several studies revealed improved fitness, weight loss, reductions in cholesterol levels or inflammatory markers in women at risk after various forms of aerobic dancing Shimamoto, H.; et.al.; 1998, Gillett, P.A.; et.al.,1987, Murrock, C.J.; Gary, F.A. ; 2010, Gullu, E.; et.al.; 2013, Okura, T.; et.al. ; 2007, Mosher, P.E.; et.al, 2005, Williford, H.N et.al. 1998) including "aerobics", "step aerobics" and "cultural dances". Zumba as a type of fitness dance that combines Latin rhythms and aerobics has rapidly reached tremendous popularity lately (Thomson, W.R., 2012). Among the recognized benefits of doing regular aerobic exercise are: (Aerobic exercise: the health benefits. 2010.)

- Strengthening the muscles involved in respiration, to facilitate the flow of air in and out of the lungs
- Strengthening and enlarging the heart muscle, to improve its pumping efficiency and reduce the resting heart rate, known as aerobic conditioning
- Improving circulation efficiency and reducing blood pressure
- Increasing the total number of red blood cells in the body, facilitating transport of oxygen
- Improved mental health, including reducing stress and lowering the incidence of depression, as well as increased cognitive capacity .
- Reducing the risk for diabetes and lowering Hb A_{1c} levels for type 2 diabetics. (Snowling, N. J. ; Hopkins, W. G. ; 2006)

- As a result, aerobic exercise can reduce the risk of death due to cardiovascular problems. In addition, high-impact aerobic activities (such as jogging or using a skipping rope) can stimulate bone growth, as well as reduce the risk of osteoporosis for both men and women. In addition to the health benefits of aerobic exercise, there are numerous performance benefits: (Snowling, N. J. ; Hopkins, W. G. ; 2006)
- Increased storage of energy molecules such as fats and carbohydrates within the muscles, allowing for increased endurance
- Neovascularization of the muscle sarcomeres to increase blood flow through the muscles
- Increasing speed at which aerobic metabolism is activated within muscles, allowing a greater portion of energy for intense exercise to be generated aerobically
- Improving the ability of muscles to use fats during exercise, preserving intramuscular glycogen
- Enhancing the speed at which muscles recover from high intensity exercise
- Neurobiological effects: improvements in brain structural connections and increased gray matter density, new neuron growth, improved cognitive function (cognitive control and various forms of memory), and improvement or maintenance of mental health.(Aerobic exercise', Food and Fitness: A Dictionary of Diet and Exercise, Michael Kent, Oxford University Press, 1997).

Various researchers suggest that aerobic group exercise classes e.g. cycling, tabata, and Zumba taken regularly are effective in controlling weight, blood pressure, and body composition. (Delextrat.; 2016; Faulkner.; et al.; 2015; Lbujojevic.; et al., 2016; Tabata.; 1996; Thompson, 2016). Acute short term physiological responses to aerobic exercise include increased heart rate, blood pressure, breathing rate, and tidal volume. Long-term aerobic exercise participation is proven to increase the amount of maximal oxygen consumption during intense aerobic exercise (VO₂ max), lower resting blood pressure and heart rate, lower body fat mass, and increase muscle mass, while low levels of cardiovascular fitness are associated with increased risk of premature death (Ehrman.; et al.; 2009). Hence, Aerobic exercise plays an important role in decreasing the risk of cardiovascular disease (CVD), pulmonary diseases, and metabolic diseases (Pescatello; Arena; Riebe; Thompson; 2013). Both aerobic dance and Zumba incorporate large muscle groups for movement during class for aerobic endurance, strength training and flexibility. Exercise will also help to regulate hormonal changes during menopause (Eshbach.; 2016) and it reduces back pain, limit body weight gain and fat retention post pregnancy, (Ehrman et al.; 2009).

As Zumba is a form of aerobic exercise therefore, above mentioned physiological effects may be seen in Zumba dancers. These physiological benefits can be used as an alternatives or adjuncts to conventional medicines (Complementary and alternative medicine, CAM) for prevention of various diseases as well as promotion of health.

1.3 Zumba : Physiological effects on Human Body

1.3.1 Effect on Nervous System:

Various researchers began to investigate neurological effects of dance which requires complex mental coordination synchronizing music and movement. Dance constitutes a pleasurable intervention where brain's reward centers are stimulated by music and sensory motor circuits are activated by dance. Studies using PET imaging have identified regions of the brain that contribute to dance learning and performance. These regions include the motor cortex, somatosensory cortex, basal ganglia, and cerebellum. The motor cortex is involved in the planning, control, and execution of voluntary movement. The somatosensory cortex, located in the mid region of the brain, is responsible for motor control and also plays a role in eye-hand coordination. The basal ganglia, a group of structures deep in the brain, work with other brain regions to smoothly coordinate movement, while the cerebellum integrates input from the brain and spinal cord and helps in the planning of fine and complex motor actions (Brown 2006; Calvo-Merino B; 2008 Cruz-Garza J. G.; 2014).

While some imaging studies have shown which regions of the brain are activated by dance, others have explored how the physical and expressive elements of dance alter brain function. For example, much of the research on the benefits of the physical activity associated with dance links with those gained from physical exercise, benefits that range from memory improvement to strengthened neuronal connections. Dance therapy is a creative arts therapy that has been defined by the American Dance Therapy Association as "the psychotherapeutic use of movement to further the emotional, cognitive, physical, and social integration of the individual." (American Dance Therapy Association. 2013) Cross-sectional studies have shown that older adults who dance on a regular basis have greater flexibility, postural stability, balance, physical reaction time, and cognitive performance than older adults who do not dance on a regular basis. (Kattenstroth JC.; 2011) Zumba improves cognitive skills, such as visual recognition and decision-making. Hufner; et. al.; (2011) stated that

long-term balance training with its extensive vestibular, visual and sensorimotor stimulation is associated with altered hippocampal formation volumes in professional ballet dancers and hippocampus is crucial for long-term memory consolidation, learning and spatial navigation, but also for balancing. In addition, dance is included in the interdisciplinary field of neuroaesthetics, which unites the various forms of artistic expression and the neuroscientific examination of how the human brain perceives processes and executes various arts, such as dance. (Yarrow K.; 2009; Fairhall S. L.; 2008) Neuroaesthetics researchers have focused on how dance training affects the human mind in terms of the intrinsic workings of the human brain's neural architecture and the forces underlying the coordinated patterns of activity that support the thought, reasoning, action, and emotion that are involved in dance (Yarrow K.2009; Stevens C. 2010; Blasing B. 2012; Grosbras M.-H.2012; Cross E. S.2011; Cruz-Garza J. G. 2014). By neuroaesthetics studies neuroscience researchers can investigate the integration of the sensorimotor functions (Haggis J., 2010) elements of aesthetics (Cross E. S., 2011; Calvo-Merino B., 2008) and emotion (Sawada M., 2003) that arise from dance. To summarize, Dance form like Zumba seems a promising intervention for neuroplasticity in nervous system.

1.3.2 Effect on Cardio-respiratory System:

The first studies on Zumba revealed its sufficiency as a training method that is able to enhance cardio respiratory fitness (Luettgen, M.; 2012, Otto, R.M.; 201). The cardiovascular benefits of dance have been observed through aerobic dance forms such as Zumba (Jitesh. S.; et al.; 2016). The volunteers were made to practice zumba dance for two months and the variation in the blood pressure were evaluated. This study verified that blood pressure is altered by Zumba dance among hypertensive patients. Another study looked at the changes in aerobic fitness with Zumba performance (Delextrat.; Warner.; Graham.; Neupert.; 2016). It suggests that the Zumba participants showed a greater increase in VO₂ max.

Anja Rossmessl et. al. (2016) assessed the feasibility and effect of a 12-week Zumba Beat dance intervention on cardio respiratory fitness. Postmenopausal women with a body mass index (BMI) >30 kg/m² or a waist circumference >94 cm who were not regularly physically active were asked to complete a 12-week Zumba Beat dance intervention with instructed and home-based self-training sessions. Before and after the intervention, peak oxygen consumption (VO₂peak) was assessed on a treadmill. There was no apparent change in VO₂peak after the 12-week intervention period. The study concluded that 12-week Zumba Beat dance intervention may not suffice to increase cardio respiratory fitness in postmenopausal women.

A pilot study conducted in a population of middle-aged obese women with metabolic syndrome reported improvements in systolic and diastolic blood pressure after a 12-week intervention (Araneta. M. R.; Tanori. D.; [2005]).

Zumba is considered more technical than running and spinning, thus the inexperienced Zumba subjects exercised at a lower %HR max. Zumba is the only exercise session where the subjects had a significant correlation of 0.5-0.6 between rating of perceived exertion (RPE) and %HR max, accelerometer counts, and energy expenditure (EE). Zumba was perceived 18.8 to 23.3% less exhaustive. (Kjell Hausken.; Sindre M.; Dyrstad.; 2013)

As Zumba dance helps to reduce blood pressure in hypertensive patients therefore, it can be recommended as adjuvant therapy with regular hypertensive medication. (S.Jitesh et. al.; 2016) To conclude, Zumba dance intervention improves cardiovascular endurance and cardio-respiratory function.

1.3.3 Effect on Musculoskeletal System:

Researchers have shown that Zumba reduces neck-shoulder pain in the setting of a workplace intervention (Barene, S.; 2014). In young normal weight females, Zumba improves trunk strength endurance and balance (Donath, L.et.al.; 2014). Similarly resistance training, high intensity aerobic exercise and outdoor sports activities have beneficial effects on the musculoskeletal system (Paffenbarger RS.; Blair SN.; Lee IM.; 2001; Warburton DER.; Nicol CW.; Bredin SSD.; 2006.; Welsh L.; Rutherford O.; 1996.; Schuenke M.; Mikat R.; McBride J.; 2002, Borer KT.; 2005). Some of the benefits are described below:

1.3.3.1 Increased Lean Muscle and Bone Density

Exercise increases lean muscle mass which has numerous advantages e.g. improved energy metabolism, improved vascularity, improved posture, and improved support to the skeletal framework. Furthermore, exercise has also been shown to strengthen muscles and improve balance and co-ordination. These effects reduce the risk of falls and fractures especially in the elderly and contribute towards improved health. (Borer KT.; 2005)

Physical activity, esp. weight bearing exercise (resistance training) has been shown to be beneficial to bone health (Borer KT.; 2005). Exercise not only stimulates bone growth and the accumulation of minerals but also prevents osteoporosis in later life (Borer KT.; 2005; B+@rard A.; Bravo G.; Gauthier P.; 1997). Borer, in his study on neurohormonal influences on exercise induced growth, observed that high resistance training expresses

a 'growth gene' in the tissues exercised and this occurs without the intermediation of growth hormone or in the absence of abundant nutrients (Borer KT.; 1994).

Brisk walking (above 6.14 k/h and heart rate: 82.3% of age-specific maximum) provides sufficient mechanical loading on the bones to maintain bone density and prevent osteoporosis in postmenopausal women (Budgett R.; 1990).

Similarly, high impact aerobic activity was shown by Welsh and Rutherford to preserve bone density, in addition to strengthening muscles in postmenopausal women and men over 50 (Welsh L; Rutherford O.; 1996).

1.3.3.2 Strong and Supple Joints with Improved Joint Range of Motion

Exercise acts as the primary stimulus for production of synovial fluid and regular physical activity thus ensures healthy joints. Increased production of synovial fluid keeps joints well oiled, resistant to friction and makes them supple. This, combined with exercise induced improvements in suppleness of ligaments, contributes to an improved joint range of motion.

Mobility exercises like 'little circles' with arms or knees for mobilizing shoulders and knees respectively in dance interventions cause secretion of synovial fluid with resultant improvement in joint range of motion.

1.3.4 Effect on Body Weight and BMI:

A study done in two Bosnian universities showed that Zumba was effective in lowering body fat mass in women participating in the class for three times a week, for eight weeks (Ljubojevic; Jovanovic; Zrnic; Sebic; 2016).

A pilot study conducted in a population of middle-aged obese women with metabolic syndrome reported weight reductions of 2.07 pounds on average, as well as improvements in fasting triglycerides after a 12-week Zumba intervention (Araneta, M.R.; Tanori, D.; 2015).

Quite recently, studies also started to examine aspects of motivation, self-perceived fitness and autonomy. (Krishnan, S.; et. al.; 2015; Delextrat, A.A.; 2015). One of these studies found enhanced intrinsic motivation associated with fitness improvements, as well as reductions in body weight and fat mass after 16 weeks of Zumba dance in obese middle-aged women (Krishnan, S.; et.al. 2015).

Furthermore, Zumba is considered more technical than running and spinning, thus if the goal is maximum calories burned or maximum aerobic fitness, then, beginners should choose simpler exercises such as running or spinning. (Kjell Hausken; Sindre M. Dyrstad; 2013). Zumba has been shown to reduce fat mass and improve aerobic fitness in the setting of a workplace intervention (Barene, S. et. al.; 2014). The study which examined the exercise intensity of Zumba was conducted at Adelphi University (Otto et al.; 2011). It reported caloric expenditure during Zumba to be between 6.6 and 7.4 Kcal·min⁻¹ depending on the particular dance style being performed. Therefore Zumba may be promoted as a lifestyle intervention in reducing weight, BMI and incidence of obesity.

1.3.5 Effect on Reproductive System:

Several studies have shown that physical activity improves hormonal profile and reproductive function. These improvements include a decrease in abdominal fat, blood glucose, blood lipids and insulin resistance, as well as improvements in menstrual cyclicity, ovulation and fertility, decreases in testosterone levels and Free Androgen Index (FAI) and increases in sex hormone binding globulin (SHBG). Exercise will also help in controlling symptoms of menopause, including hot flashes, fatigue, weight gain, joint aches and pain, sleep disturbances, loss of bone density minerals, and depression and anxiety in elderly (Eshbach.; 2016).

In a study on dance labor group, women were instructed to do standing upright with pelvic tilt and rock their hips back and forth or around in a circle while their partner-who was instructed to stand in front of them, massaged their back and sacrum for a minimum of 30 minutes. During these movements, participants were instructed to rest their arms on their partner's shoulders. Women in this group were instructed to remain upright at least for 30 minutes to record pain score. Dance labor, which is a complementary treatment with low risk, can reduce the intensity of pain and increase the satisfaction of mothers with care during the active phase of labor. (S. Abdollahian et. al.; 2014). These studies suggest that physical activity like Zumba may improve reproductive health.

1.3.6 Effect on Endocrine System:

Ballet dancers and highly trained runners of either sex demonstrate suppression of gonadal function caused by chronic HPA activation. These subjects have increased evening plasma cortisol and ACTH levels, increased urinary free cortisol excretion, and blunted ACTH responses to exogenous CRH; males have low LH and testosterone levels, and females have amenorrhea. (Luger A, 1987;. Beitins IZ. 1986; Brooks-Gunn J, 1985)

Exercise initiates an endocrine response through activation of the sympathetic system in a feed-forward manner by the motor centre in the brain which is reflected by the increases in sympathoadrenal

activity. Exercise also leads to an increase in the production and release of growth hormone, testosterone, adrenocorticotrophic hormone, cortisol and prolactin that each has local and systemic effects (D Ball - 2015). This suggests effects of dance and exercise on the major endocrine axes in the body. Therefore further studies are needed to explore the effect of zumba on endocrine health.

1.3. 7 Effect on Psychosocial Health:

Multiple studies have also shown that the energetic dance class is effective in increasing psychological well-being and quality of life for women (Delextrat et al.; 2017; Nieri & Hughes, 2017). In young normal weight females, Zumba improves fitness and quality of life (Donath, L.; 2014). Similarly Anja Rossmeissl et. al. (2016) assessed the feasibility and effect of a 12-week Zum Beat dance intervention on psychosocial health. Postmenopausal women who were not regularly physically active were asked to complete a 12-week ZumBeat dance intervention. Before and after the intervention, several psychometric parameters (including quality of life, sports-related barriers and menopausal symptoms) were investigated. Result suggests quality of life had increased, and sports-related barriers had decreased. A 12-week ZumBeat dance intervention may increase women's quality of life. To summarize, Zumba is an exercise fitness program which can help in improving psychosocial health.

1.3. 8 Effect on Geriatric Health:

Dance has been found to be therapeutic for patients with Parkinson's disease. The primary motor symptoms of Parkinson's disease include bradykinesia (slowed movement), stiffness of the limbs and trunk, tremors, and impaired balance and coordination. It is these symptoms that dance may help alleviate. Dance can be considered a form of rhythmic auditory stimulation (RAS). In this technique, a series of fixed rhythms are presented to patients, and the patients are asked to move to the rhythms. Studies of the effects this technique has on patients with Parkinson's or other movement disorders have found significant improvements in gait and upper extremity function among participants. Interactive RAS offers a flexible, portable, low-cost, non-invasive therapeutic intervention that may improve the mobility, stability, and quality of life of Parkinson's Disease patients. (Michael J. Hove, 2012)

Similarly, Zumba Gold has been shown to be safely applied in elderly or even chronically-ill people (Bennett, P. et al; 2012; Sanders, M.E.; Prouty, J.; 2012), although two studies warn of possible injuries associated with Zumba fitness and the wrong footwear (Inouye, J. et al.; 2013; Schrimpf, C.; et al; 2014). To conclude, further research is needed to explore the role of Zumba in improving geriatric health.

2. CONCLUSION

Zumba intervention is both a dance and a fitness regime which leads to health benefits through aerobic activity. Further studies are required to have an in depth knowledge of mechanism of action of this aerobic dance form so that it can be utilized as a tool in Complementary and alternative medicine for improving health and well being.

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A STUDY ON LOCUS OF CONTROL AND AGGRESSIVE BEHAVIOUR OF SPORTSPERSON

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ABSTRACT

The study was carried out to assess the influence of locus of control on aggressive behaviour of sportsperson, To meet the objectives of the present study the data was collected at 63rd All India Inter University Athletics Championship held in January 2003 at Gulbarga University, Gulbarga by administering personal-bio-data schedule, aggressive and Locus of control was administered, the responses were scored and terminated as per the manual, after collecting data 't' test was employed to assess the significant impact of locus of control on aggressive behaviour on aggressive behaviour of sportsperson, the calculated 't' value was significant at table value at 0.05 level. The result has found that internal locus of control leads to control emotion and understand the situation in real sense with practical aspect, whereas external locus of control sportsperson would lose their temper and behaviour assertively without understanding the consequence, hence formulated hypothesis was tested and proved positively and drawn the conclusion that aggressive behaviour of sportsperson depends upon the beliefs system and mind state of the person.

Keywords: Locus of control. Aggressive behaviour, Sportsperson

1. INTRODUCTION

The participation in modern sports is influenced by various physical, physiological, sociological and psychological factors. During training, besides good physique and fitness of the athlete, main emphasis is laid on the development of various types of skills involved in the game as well as on teaching the strategies, techniques and tactics of the game. Until recently, the coaches have been paying inadequate attention to the social and psychological factors which although have been proved to contribute to performance in events in the higher competitive sports. It is only recently that sports administrators and coaches have realised the importance of the psychological preparation and training of players to enable them to bear the strain and stresses inherent in sports participation. So, now the sports trainer and coaches have started giving more importance to the psychological conditioning or the building the mental make-up of the players before their contests in the national and international competitions.

Many research studies in the psychology of sport men and women studied separately not much interest has been focused on the socio-economic status, which plays a major role in determining the personality factors of the sportsmen, which could play a important role in their performance. In the face of more and more men and women belonging to different strata of society are entering the sports arena every year and sharing the laurels with their counterparts it was felt necessary to “find out influence of locus of control on aggressive behaviour among sportsperson “

The reliance aggression in sports has been traditionally cantered round the usefulness of sports in providing an outfit for aggression and controlling violence in the society. Adjustment attempts to satisfy needs by over-coming both inner and outer abstracts and by adopting circumstances. The learning about adjustment means analyzing two things interval make-up and internal personal or social behavior. Adjustment is dynamic process by which organizes mart their needs. Physical education and related activities satisfy many of these needs. The aggressive constructs is a complex one, that there are individual differences in the invite, potential to aggress and that the aggression can also be learned or stimulated by specific situations. When aggressive energies are expressed within the rules of a sport and channeled in to skill by a mature athlete, then one may witness a peaceful and inspiring performance. Aggression for aggression sake should not be sanctioned. It is self defeating and debilitating to others. The aggressive athlete will be more active, eager, strong, highly motivated and likely to seek to vanquish any opponent. Athlete is who is highly motivated by emotional aggression should not be confused with the athlete who has primary motivation, but who aggression because he or she is placed in an athletic situation that demands it. Football, Hockey and Boxing would be expected to attract more aggressively motivated individuals than Curbing, Golf and Badminton: latter sports require their own form of aggression. Even nonphysical sports have been described as fiercely aggressive.

1.1 Review of related literature

Bandura as well as others had observed the aggressive behavior of children. Rather than have them participate in the complex teacher learner situation, researchers permit children to play with toy, some of which give an idea of their aggressiveness punching a doll or a punching bag may be indicative of a child's level of hostility, and such measures are often used in studying children's aggression (Baron). Johnson and Hutton founds that measures of aggressive feelings obtained from a projective, test (tree house person) in eight wrestlers, taking 4 to 5 hours before the first intercollegiate match of the season, were greater than apparent feelings projected by them the morning after completion. The heightened aggression before the match, the writers suggested, was connected with possible feeling of guilt, paralleling the anticipated aggressive sport. This aggression was thus hypothesized as intropunitive in nature or aggression directed towards themselves rather than their opponents.

Locus of control is a term introduced by psychologist Julian Rotter that represents social learning theory's concept of internal versus external control of reinforcement (Kormanik & Rocco,

2009). Locus of control refers to a predisposition in the perception of what causes reinforcement (Kormanik & Rocco, 2009). Essentially, it is the degree to which individuals feel that they have control over reinforcements or outcomes of behaviours (Rotter, 1990). One would have an internal locus of control if he or she feels as though consequences of his or her actions are contingent on personal behaviours or characteristics (Rotter, 1990). On the other hand, an individual with an external locus of control would expect that the outcome or reinforcement is a function of luck, fate, or chance and that this consequence is generally unpredictable (Rotter, 1990). Locus of Control, Stress and Performance 129 A multitude of research has been conducted regarding Rotter's aspect of locus of control. Kormanik & Rocco (2009) referenced a study that looked at the relationship between locus of control and life stress, as measured by depression and anxiety. It was found that the less internal locus of control an individual perceives, the greater the likelihood for stress and depression (Kormanik & Rocco, 2009). In addition, Bemardi (2001) explained that when an individual perceives that he or she has control over a situation, he or she will be less likely to perceive the situation as stress-inducing. Also, internal-locus-of-control individuals tend to experience lower anxiety than others; therefore, externality may act as a stress buffer (Bemardi, 2001). Likewise, externality was found to be positively correlated with general stress (Bemardi, 2001). With regard to locus of control and task performance, studies have found that internal tend to perform better than external (Blau, 1993). However, more concrete and significant results are obtained when a variable such as stress is incorporated into the study (Wolk & Bloom, 1977). Wolk and Bloom (1977) carried out a study where students encountered various levels of stress designed to disupt their performance on verbal and mathematical tasks. It was found that under the no stress condition, both external and internal performed similarly (Wolk & Bloom, 1977). However, when under the high stress condition, internal l participants made significantly fewer errors on both verbal and mathematical tasks relative to their external counterparts (Wolk & Bloom, 1977). At the same time, the internal participants did not report higher levels of stress or anxiety than the external participants did when they found themselves under the same condition (Wolk & Bloom, 1977). Therefore, it seems as though internality acted as a stress buffer.

The purpose of the present investigation was to assess the influence of locus of control on aggressive behaviour of sportsperson. It was also hypothesized that There is significant influence of locus of control on aggressive behaviour among the sportsperson. The External locus of control leads to produce more aggressive behaviour comparing to the internal locus of control

2. METHODOLOGY

2.1 Selection of the subjects

Selection of the subjects in this study 200 male students those are participated in all India inter university tournament

2.2 Selection of Variables.

The Variables selected for this study were as follows: 1. Aggression behaviour 2. Locus of control

2.3 Tool used

Tool used to measure the Aggression behaviour and Locus of control, the following tests were selected and scores were considered as criterion measure for the study was A. Kumar (Aggression) and Dr. Romapal (Locus of control) and test were administered to the study.

2.4 Collection of Data

To meet the objectives of the present study the data was collected at 63rd All India Inter University Athletics Championship held in January 2003 at Gulbarga University, Gulbarga by administering personal-bio-data schedule, aggressive and Locus of control was administered, the responses were scored and terminated as per the manual

2.5 Statistical Technique

To analysis the data, 't' test was applied to assess the significant difference and influence of locus of control on aggressive behaviour of sportsperson,

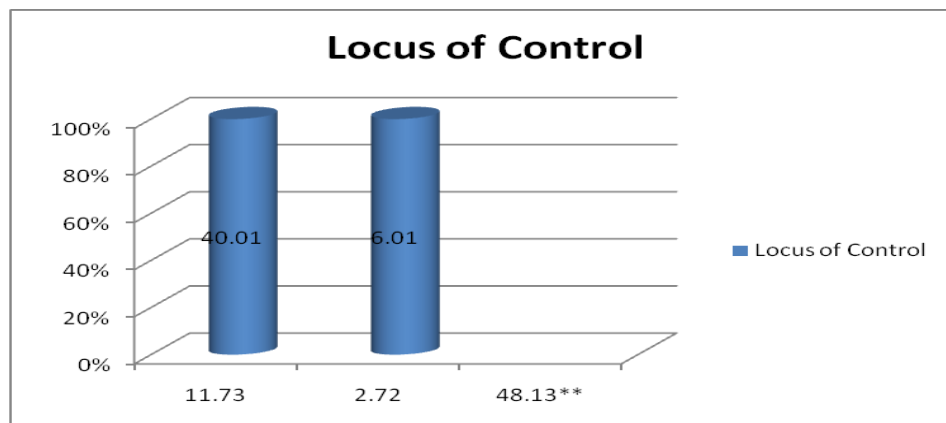
3. RESULTS AND DISCUSSION

TABLE 1
SHOWING THE MEAN, SD AND 'T' VALUES OF LOCUS OF CONTROL AND AGGRESSION OF MALE SPORTSMEN

Variables	Aggression	Locus of Control
Mean	11.73	40.01
SD	2.72	6.01
t-value	48.13**	

Table-1 presents us the mean, SD and 't' value of aggression and locus of control of male sportsmen. The male sportsmen mean scores of locus of control is 40.01 and on aggressive behavior is 11.73. This suggests us that the male sportsmen are having internal locus of control and the moderate level of aggression. The obtained' value is 48.13 which is significant at 0.01 level. The significant' value suggests that there is a significant influence of locus of control on the aggressive behavior of sportsmen. In other words, the internal locus of control of the male sportsmen has significant influence on moderate aggressive behavior. This is because the sportsmen with the internal locus of control would be rational, optimistic and would gain control over their emotions and aggression. Therefore, the sportsmen with an internal locus of control would definitely control the aggression and help to adopt the moderate level of aggressive behavior and boost his achievement or performance.

Graph showing the locus of control



CONCLUSION

The result has shown the fact and information about the consequence of locus of control, internal locus of control person have control their emotion and ability to manage situation in real sense and external locus of control person would lose their temper without understanding real causes for their behavior

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**A COMPARATIVE STUDY OF ACHIEVEMENT MOTIVATION BETWEEN
HANDBALL MALE AND FEMALE PLAYERS**

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ABSTRACT

The present study has been designed to investigate the achievement motivation of male and female handball inter-university players. For accomplish the study total 54 (27 male players and 27 female players) handball players were randomly selected as sample. All samples were selected from the MDU Rohtak. The age of the subjects was ranged from 16-27 years. For measure the achievement motivation Dr. M.C. Kamlesh questionnaire was used. The obtained data were analyzed by applying t test in order to determine the achievement motivation of handball players. The level of significance was set at 0.05. We find out that male handball players are having more achievement motivation in comparison to female handball players.

Keywords: Achievement motivation, Handball, Female, Male, Interuniversity level

1. INTRODUCTION

The motivation of completion can be defined as the predisposition of the athlete approaches or evidence of a competitive situation. The motivation of the realization includes the concept of desire or desire for improvement. Motivation is an internal force that speeds up a response or behavior. Some students learn the same subject or task more effectively than others, some find it more rewarding and interesting than others; and a value more than others. At any one time, students vary in that they are willing to direct their energies towards achieving the goals, due to the difference in motivation. The reason for success comes when a person knows that their performance will be evaluated, as a result of their actions will be a success or a failure and that good performance will produce a sense of pride in the performance. Therefore, the reason for success can be considered as a willingness to address success or ability to rely on successful fulfillment when any activity is achieved.

The purpose of the study is to compare the achievement motivation between handball male and female players. It was also hypothesized that There would be no significant difference in achievement motivation between handball male and female players.

2. METHODOLOGY

2.1 Sample:

The sample for the present study was 27-27 players of handball male and female players who had participated at inter-university level. The age of the subjects was ranged from 16-27 years.

2.2 Tool and Techniques

For measure the achievement motivation Dr. M.L. Kamlesh questionnaire was used.

2.3 Statistical Method

The obtained data were analyzed by applying t test in order to determine the achievement motivation of handball players. The level of significance was set at 0.05. For obtaining reliable result special statistics software (SPSS) was used.

3. RESULTS AND DISCUSSION

TABLE 1
MEAN DIFFERENCE OF ACHIEVEMENT MOTIVATION BETWEEN MALE AND FEMALE HANDBALL PLAYERS

Sex	N	Mean	SD	MD	σ DM	t-ratio
Male	27	27.55	4.78	3.95	1.178	3.35*
Female	27	23.62	3.72			

Table 1. Shows that 't' value (3.35*). The mean score of male handball players is more than the female handball players in their achievement motivation. The mean achievement motivation of male handball players (27.55) is higher than the female handball players (23.62), which show the significant difference at 0.05 level. It means that male handball players have more achievement motivation in comparison of female handball players. It was also hypothesized that "There would be no significant difference in achievement motivation between handball male and female players." formulated earlier was not accepted. The significant difference was observed in achievement motivation of male and female handball players

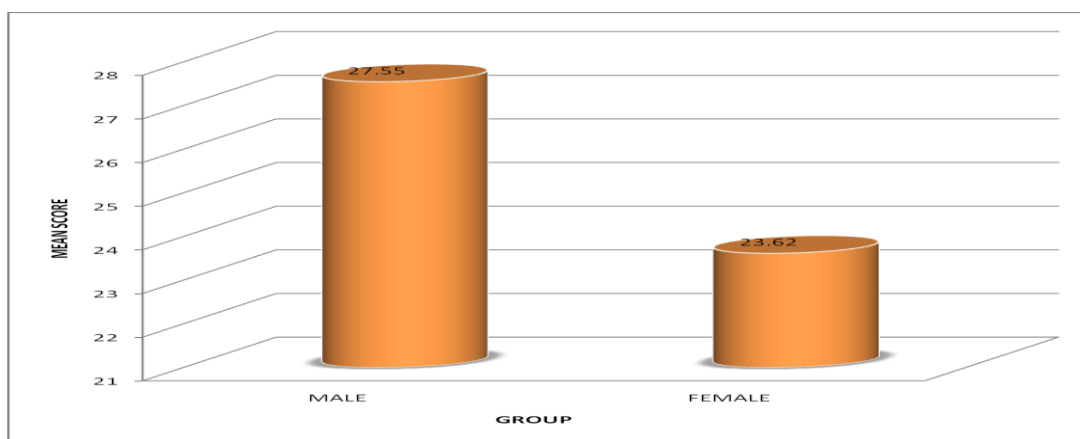


Figure 1: Mean difference of achievement motivation between male and female handball players

4. CONCLUSION

We observed that male handball players are having more achievement motivation in comparison to female handball players.

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PERSONALTY AND ACHIEVEMENT OF RANVEER SINGH- INTERNATIONAL VOLLEYBALL PLAYER AS WELL AS COACH : A CASE STUDY

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ABSTRACT

The purpose of this research was to study relative efficacy of 16 personality factors, in predicting self confidence, achievement motivation and locus of control, taking into account the internal relations among the personality factors. The standardized tools personality questionnaire Cattell's 16 personality factors questionnaire, Sanjay Vohra's Levenson's Locus of Control of control scale, Self Confidence questionnaire (SCQ), Achievement Motivation Bhargava's achievement motive test were used to collect data a sample is a case study of volleyball player representing state, national, and international level the descriptive statistical analysis were used to analyze the data. The findings of the study : The potency of personality factor A, B, C, D, E, F, H, I, L, M, N, O, Q1, Q2, Q3 and Q4 taken together in the prediction of Self Confidence, Achievement Motivation and Locus of Control of an a volleyball player. Personality factor the maximum contribution and factor F, H & Q3 makes considerable contribution for prediction.

Keywords: Personality, Achievement, Locus of Control, self Confidence, Volleyball Player.

1. INTRODUCTION

Experts of personality theories like Allport and Eysenck, who have made substantial studies, consider that every individual is unique in himself. Personality has been called as a mirror of the culture. For the growth and development of an individual's mind and personality, genetic and environmental circumstances play major roles. Eventually, personality development is the outcome of a process of interaction between genetic inclinations and environmental conditions. The human being by nature first tries to accommodate himself with the environment around him and then he starts striving to establish his superiority over it.

Sigmund S. Freud, Maslow, Allport and other have been shown the way in this regard by case studies of individuals. The findings of these psychologists have greatly impacted the world view; the explanation and modification of human behavior for better such studies always throw new light and provide new understanding of people, their nature, personality and social achievement etc.

Personality, Allport, G.W. (1937) Personality can be defined in terms of characteristics (traits) of the individual which are directly observable in his behavior or in terms of characteristics, such as unconscious processes, which are inferred from behavior. Personality can be defined strictly in terms of the roles an individual has ascribed to him and adopts for himself in his functioning in society.

The term personality is derived from the Latin term "persona". The meaning of the term persona is the actors mask. The mask was chosen and worn to indicate the character that was to be played by the individual. In olden days the actors used to put on the mask while coming on the stage so that their identity will not be known to the audience and at the same time the role they play will be nearer to reality.

Term "Case Study" may be defined "A qualitative analysis involving a very careful and complete observation of a person situation or an institution". "What a person does is distinguished from what his potential is".

The purpose of the study is to reveal the facts that influenced the successful performance of Ranveer Singh volleyball player at State, National and International competitions. The study may provide an opportunity to assess the background of the performance of Ranveer Singh. It may help to ascertain the reason behind the subject's high level performance from state, national and international competitions

2. METHODOLOGY

2.1 SAMPLE

International legendary volleyball player and Coach Ranveer Singh of Uttar Pradesh was the sample for present case study.

2.2 TESTS USED

Following standardized tests and questionnaires were used in the present study:

1. The Sixteen Personality Factor Questionnaire (16 P.F), Raymond B. Cattell (1969)
2. Locus of Control Scale, Sanjay Vohra (1992), Levenson's (1973)
3. Achievement Motivation, V.P. Bhargava (1994)
4. Self Confidence, M. Basavanna (1971)

2.3 Interview Technique

David H. Clark and Harrison H. Clark, the interview or visit is a better method of obtaining survey information than using a mailed questionnaire. Rather than rely on the personal approach inherent in the latter technique, the interviewer gathers data directly from individuals in face to face contacts. The interview has been linked to an oral questionnaire it has the obvious advantage of nursing a greater return.

2.4 RELIABILITY OF THE INTERVIEW

The purpose of the study was clearly explained to the respondent well in advance, which is in no way meant for commercial purpose and only for research study. Mr. Ranveer Singh willingly accepted to give information which is highly truthful to the best of his knowledge. The following statement given by Mr. Ranveer Singh at the beginning of the conversation would enlighten the study. The information furnishing in the form of questions and answer based on truth.

2.5 Statistical Analyses

Descriptive statistical analyses were used to analyze the data.

3. RESULTS AND DISCUSSION

TABLE I
ANALYSIS OF 16 PRIMARY PERSONALITY FACTORS AND SCORES OF Mr. RANVEER SINGH (SCORES IN POINTS)

Sl. No.	Sixteen P.F.	Stens
1	A	8
2	B	9
3	C	8
4	E	9
5	F	10
6	G	9
7	H	10
8	I	3
9	L	3
10	M	6
11	N	9
12	O	3
13	Q1	9
14	Q2	3
15	Q3	10
16	Q4	3

According to Table No. I scores the subject have shown a tendency or inclination towards the higher direction or high sten score description in ten (A,B,C,E,F,G,H,N, Q1 and Q3) out of sixteen personality factors. The subject was average in one (M) out of the sixteen factors. Towards the lower direction or low sten score description in five (I, L, O and Q4) out of the sixteen personality factors.

TABLE II
ANALYSIS OF LOCUS OF CONTROL FACTORS SCORES OF Mr. RANVEER SINGH (SCORES IN POINTS)

Sl.No.	Factors	Name of Factors	Raw scores	Sten scores
1	P	Powerful by others	15	4
2	C	Chance control	19	4
3	I	Individual control	34	7

Table No. II presents the scores of locus of control factors. The scores early indicate that the subject having lower strength in powerful by others (15) a chance control (19) factors. The scores of individual control (34) clearly indicate that Mr. Ranveer Singh having greater strength in this factor.

TABLE III
ANALYSIS OF ACHIEVEMENT MOTIVATION SCORES OF Mr. RANVEER SINGH (SCORES IN POINTS)

Sl. No.	Variable	Score
1	Achievement motivation	34

Table No.III presents the score of achievement motivation. The score (34) clearly indicates that the Mr. Ranveer Singh having high level of achievement motivation.

TABLE IV
ANALYSIS OF SELF CONFIDENCE SCORES OF Mr. RANVEER SINGH (SCORES IN POINTS)

Sl. No.	Variable	Score	Category
1	Self confidence	16	High level

Table No. IV presents the score of self confidence. The score (16) clearly indicates that the Mr. Ranveer Singh having level of self confidence.

4. CONCLUSION

Mr. Ranveer Singh is good natured, easy going, emotionally expressive, ready to cooperate, attentive to people, softhearted, kindly, adaptable, quick to grasp ideas, a fast learner, intelligent, emotionally mature, stable, realistic about life, unruffled, possessing ego strength, better able to maintain solid group morale, assertive, self assured, independent minded, cheerful, active, talkative, frank, expressive, effervescent and carefree.

1. He is exacting in character, dominated by sense of duty, preserving, responsible, thoughtful, "fill the unforgiving minute, sociable, bold, ready to try new things, spontaneous and abundant in emotional response. His "thick skinned" enables them to face wear and tear in dealing with people and grueling emotional situations, without fatigue.
2. He is tough, realistic, "down to earth", independent, responsible but skeptical of subjective, cultural elaborations, free of jealous tendencies, adaptable, cheerful, uncompetitive, concerned about others, a good team worker, anxious to do the right things, attentive to practical matters, polished, experimental and shrewd, unruffled and to have unshakable nerve. He has a mature, unanimous confidence in themselves and their capacity to deal with things.
3. He is experimenting, interested in intellectual matters, he has doubts on fundamental issues, prefers to work and make decisions with other people and like and depend on social approval and administration.

4. He has undisciplined self conflict and significant control of his emotions and general behavior. Inclination to be socially aware, careful and he has lot of self respect and high regard for social reputation. He is sedate, relaxed, composed and satisfied person.
5. He has high level of Self confidence, high level of Achievement motivation and he has greater strength of Locus of control.
6. He has positive goal discrepancy and attainment discrepancy and also he was under aspirant i.e., does more and expects less.
7. Positive and significant interrelationship between the Sixteen Primary Personality factors scores of Mr. Ranveer Singh.
8. Positive and significant relationship between LOC factors like powerful by others and chance control scores of Mr. Ranveer Singh.
9. No significant relationship between LOC factors like chance control and individual control, powerful by others and individual control scores of Mr. Ranveer Singh.

5. RECOMMENDATIONS

A further study may be conducted on the same subject about the Anatomical, Physical or Physiological and genetic aspects and their influence on his performance.

1. A comparative study involving our subject and other volleyball player at national and international levels may be undertaken.
2. Measures to improve the sport of volleyball and popularizing the sport may be analyzed.
3. Facilities provided for volleyball and training in the various volleyball players of Uttar Pradesh and Tamil Nadu states may be studied and facilities provided by two states may be evaluated.
4. Volleyball players should be made to gain an adequate knowledge of skills and techniques and other associated aspects of sports like diet and nutrition habits, training and competitions, etc.
6. The importance of balanced diet and personality in enhancing sports performance must be taught at school and college levels.
7. The coaches and trainers should convince young volleyball players about the importance of favourable behaviour habits, nature, attitude, etc., in sporting Performances.
8. The volleyball players should be made to realize the importance of concentration, hard work, discipline, punctuality, regularity, sincerity, self interest, diehard attitude and optimistic approach and sincere efforts and their positive influence on performance and emphasis to train volleyball players for developing. Such qualities must be given along with training for emotional control and regulation.

6. SUGGESTIONS

1. The study may be repeated on other present international volleyball player including many other biogenic and psychogenic variables.
2. The study may be extended to find out and verify personality traits, and locus of control relationship with other variables like anxiety, aggression and other psycho motor variables.
3. Similar studies on individual front ranking athletes and players to document their personality and achievement may be conducted.
4. A comparative study of the best individual players in different games on their life and personality may be undertaken.

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EMOTIONAL INTELLIGENCE AND PERSONALITY CHARACTERISTICS OF COLLEGE LEVEL STUDENTS

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ABSTRACT

Emotional Intelligence includes self-awareness and impulse control, persistence, zeal and motivation, empathy and social adequacy. These are the attributes that mark people excel : whose relationships flourish, who are stars in the work place. The aim of study was to find out the emotional Intelligence of adolescent girl's personality type. A sample of 120 girls equally of all faculties-Arts, Commerce and Science was taken on random basis as moderating variable. The results of the study revealed the significant differences in Arts and Commerce and Science in their emotional intelligence. Neuroticism personality factor was found to be negatively related with emotional Intelligence

Keywords: Personality, Achievement, Locus of Control, self Confidence, Volleyball Player.

1. INTRODUCTION

Emotional Intelligence (E.I.) is a fascinating concept in recent years because now intelligence quotient alone is not sufficient for success in life. Peter Salovey and John Mayer (1990) proposed a comprehensive theory of Emotional Intelligence, but recently Daniel Goleman (1996) brought this concept in limelight. He refers it as the copacity for recognizing our own feeling and those of others, for motivating ourselves, and in our relationships.

Gardner (1989) thinking about the multiplicity of intelligence continues to evolve. Gardner (1983) published his theory and provided the nutshell, summaries the personal Intelligence.

Salovey (1990) subsumes Gardner's personal intelligence in his basic definition of emotional Intelligence, expanding the abilities and traits. These are expression in terms of behavior, experience aspirations, interest values. Ambitions and temperament. It is the characteristic patterns of action behavior, thoughts and feelings which may experienced by the individuals. It is the dynamic organization within the individuals which determines his unique adjustment to the environment. A person behaves in a given situation according to his personality is the mirror of once total behaviour.

It is rightly held that the academic intelligence has little to do with emotional life. The brightest with high IQ can stunningly poor pilots of their private lives is no guarantee of prosperity, prestige, or happiness in life. Our education and culture fixate on academic ability only but ignores emotional intelligence. Emotional intelligence is a act or trait some might call it character and that also matters immensely for our personal destiny.

There is need to develop the emotional intelligence. Life in youth is a domain that surely as reading or can be handled with greater and lesser skill and requires its unique set of competencies. Emotional aptitude is a mata ability, determining how well we can use whatever other skills we have, including raw intellect people with well developed emotional skills are also more likely to be content and effective in their lives, mastering the habits of mind that faster their own productivity.

There has been scarcity of studies on the Emotional intelligence and personality types among adolescent girls. Allport (1961) defines personality as a dynamic organization within the individual of those physical system that determine his unique adjustment with his environment. But El is believed to be an indicator of success and happiness (Nathawat, 1998) and therefore it must relate with emotional stability as agent to neuroticism. As such it may not relate to Introversion and Extroversion. However both the continuum of this dimension may be related with El. Thus both introverted emotionally stable and Extroversion emotionally stable may be high on El. Whether it is there or and artifact, the present study aims at assessing. The emotional intelligence and personality of adolescent girl's of different faculties and to see the relationship between emotional intelligence and personality. The adolescent is marked by heightened emotionality during the years of early adolescence healthy personality is difficult to maintain even if the foundations laid in childhood were sound. The upsets in body homeostasis that accompany radical physical and glandular changes, the changed social expectations for the roles the young people will be expected to play, and the generally unfavorable social attitudes toward early adolescent- all contribute to made these years difficult for these people to adjust. It is the transitional period of life which ranges between the ages 13 to 21 years. So that some sort of suggestion and counseling can be given to improve emotional intelligence. More specifically study aims (1) to study the

relationship between emotional Intelligence and personality type of adolescent girls. (2) is there any relationship between emotional intelligence and the course of study (faculty).

1.1 Hypothesis

To test above aims following hypothesis were formulated :

- (1) There would be significant difference in students of different faculties (Arts, Commerce, Science) regarding their emotional intelligence.
- (2) There would be no difference in EI of extroverts and Introverts.
- (3) There would be negative relationship between neuroticism and EI.

2. METHODOLOGY

2.1 Sample

The present study was carried out on adolescent female students of different faculties : Science, Commerce and Arts studying in Maharani's College. Total 120 Students were taken 40 from each faculty. Intelligence level is being controlled by taking the students. Who have more than 65% in the 12th grade.

2.2 Tools

- (1) Test of emotional intelligence developed by N.K. Chadha(1998).
- (2) Neurotism, Introversion – Extroversion Inventory developed by I.S. Muhar (1992).

2.3 Procedure

The study was conducted on three groups Arts, Commerce and Science. 40 female students of each faculty were selected on availability basis they were first given personality inventory than test of emotional intelligence to each student to test the proposed hypothesis mean, t-test and correlation of coefficient were used.

3. RESULTS

TABLE 1
Mean, t-value and level of significance of art; commerce
And science adolescents girls.

Groups	N	Mean	t-Value	Level of Significance
Art & Commerce	40	208	4.91	0.01
	40	172		
Art & Science	40	208	1.36	N.S.
	40	198		
Commerce & Science	40	172	3.64	0.01
	40	198		
Extrovert & Introvert	96	184.3	0.43	N.S.
	24	187		

The correlation coefficient between neuroticism and emotional intelligence was calculated. It was found that there was negative relationship between neuroticism and EI i.e. .21 that was not significantly different but the trend was in negative direction and it supports partly the hypothesis No.3

Further it is obvious from data analysis that there would be significant differences among student of different faculties. Results Partly support the hypothesis.

4. DISCUSSION & CONCLUSION

It was found in the present study that the mean EI was 192 (50 percentile) which is equal to average EI, while their academic intelligence is more than average. Intelligence level was controlled by selection, only those girls were selected who scored minimum 65% in 12th

grade. It clears that EI is different than intelligence. It is obvious from Table 1 that there is significant difference between the students of Arts and commerce at level, in their EI. The students of commerce and Science also differ significantly in their EI. But Arts and Science students do not differ significantly in their EI. The result Table 1 depicts that EI scores of Arts students was highest (208), in comparison to science students 198, commerce students 172. The proposed hypothesis is partially by the results. Our emotional capacities are not given, with the right learning they can be improved. Reasons for this lie in how the human brain matures. The habits of emotional management That are repeated over and over again during childhood and the teenage years will themselves help mold this circuiting.

Further it was clear from the Table 1 that introvert and extrovert type of personality do not differ significantly in their level of emotional intelligence. But introverts have slightly more EI extroverts. The results of the present study support the hypothesis 2. Many researches had been conducted (Muthayya, 1968; Shantamani and hafeej, 1968; Muthayya and Rajeshwari, 1968; De and Khan, 1969; De and Jha, 1978) regarding introverts and extroverts with different variables. Yet no attempt had been done to find out the relation with emotional intelligence. The present study is a small attempt in this direction. It was found that few characteristics of introverts and few characteristics of extroverts are in favor of emotional intelligence. Introverts oriented towards self, avoid social contact, shy sensitive and anxious in new situation, while extroverts are outgoing, social, like to interact and mix with others.

The hypothesis 3 states that there would be negative relationship between neuroticism and EI. The correlation of coefficient was calculated and it es-0.21, which is not significant. It can be said that trend is in support of hypothesis 3. it requires further investigation, as it is obvious that Emotional Intelligence is a new concept. The hypothesis was formed on this basis that neuroticism is the cluster of negative personality traits; such as high anxiety, excessive self-consciousness, hostility, depression, impulse control, persistence, zeal, motivation, empathy and social adequacy. Thus, it was assumed that this variable would be negatively related.

The present findings indicate that EI is not moderated by type of personality but neuroticism is negatively related. The level of EI is average while their intelligence level is higher, so there is great need to improve their EI level by counseling and Training. The faculty of course also has some role in determining EI.

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COMPARATIVE STUDY AMONG FEMALE CRICKET AND HANDBALL PLAYERS ON HAND REACTION TIME AND EYE HAND CO-ORDINATION

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ABSTRACT

The aim of the study was to analyze the hand reaction time and eye hand co-ordination among female cricket & handball players. The study was conducted on 50 female players in which 25 crickets & 25 handballs selected as a sample from different colleges of Punjabi University, Patiala. All the samples participated at least Intervarsity level tournament. The age of the sample ranged from 18-25 years & all the samples were selected from random basis. To measure the hand reaction time, Digital Reaction Time Tester was preferred & to assess eye hand co-ordination, Ball transfer test was used. The scoring was done according to rule led down by the authors. This test is highly reliable & valid for measuring hand reaction time & eye hand co-ordination of selected subjects. The 't' test was used to find out significant difference between two groups i.e. cricket players & handball players. Results found that Female cricket players have slow auditory reaction time (ART) & faster visual reaction time (VRT) as compared to female handball players. Female cricket players have poor eye hand co-ordination (EHC) as compared to female handball players.

Keywords: Hand Reaction Time (HRT), Eye Hand Co-ordination (EHC), Female Players (Cricket & Handball) etc.

1. INTRODUCTION

Sport activities often have a close relationship between perception and action therefore temporally constrained sport tasks require that players extract the most valuable source of visual information and use this information to quickly anticipate the opponent's movement outcome (SHIM et al., 2006). There are evidences which support the claims of vision playing an important role in the perceptual ability of an athlete relating proportionately to his/her motor response. Revien & Gabor (1981) stated that visual abilities affect sports performance and the acquisition of motor skills, which can be improved with training. Supporting the same Quevedo et al. (1999); stated that sports vision training is conceived as a group of techniques directed to preserve and improve the visual function, with the goal of incrementing sports performance through a process that involves teaching the visual behavior required in the practice of different sporting activities. West & Bresson (1996) indeed indicated a positive effect on the performance of cricketers to judge the length of ball after specific visual training program. Salmela & Fiorito (1980), showed improved performance in hockey players, when accurate pre shot visual clues were obtained. The results of several other studies also assert the claim that visual skills training can improve sports performance.

Reaction time is defined as the period of time that elapses between the occurrence of a stimulus and initiation of the movement. It involves reception of the stimuli by the sense organ, conduction of the information through the nerve to the brain and from the brain to the muscle contraction, and the movement of the muscle. The contribution of the central processes in the brain is usually far larger than all the others put together (Welford 1977). Visual reaction time is the time taken by an individual to react to a visual stimulus. (Bamne, Fadia, Jadhav 2011)

An essential skill, hand-eye coordination involves your visual system coordinating what you see to guide the hands in a specific task. Different activities entail various degrees of co-ordination development; catching a ball requires a greater sense of coordination than pouring a glass of milk, for example. Improving your hand-eye co-ordination can make every day and athletic movements easier (www.livestrong.com. 2017).

Many things that you do throughout your day that you probably don't even think about require hand-eye coordination. Applying makeup, brushing your hair, pouring water into the coffee maker, writing and folding your clothes are all examples of simple tasks that use hand-eye coordination. Drills to improve hand-eye coordination can be borrowed from sports; the simple act of playing catch, horseshoes or handball can help you to develop a better sense of overall coordination (www.livestrong.com., 2017)

There are so many activities in the field of Physical Education. That is performing with the help of Eye Hand coordination. Eye hand coordination is compulsory in our body like steam. Team games help the player to work in the group. This team is used to identify those games in which the group of player represents a single unit.

2. METHODOLOGY

2.1 Sample

The total no. of 50 Female subjects in which 25 cricket players & 25 handball players were selected as a sample. All the samples selected from different colleges of Punjabi University, Patiala & all the selected players represented in at least intervarsity level

tournament. The age of the selected subjects ranged from 18-25 years and all the samples were selected from random basis.

2.2 Tool Used

To assess the hand reaction time, of selected female players, Digital Reaction Time Tester was used. For measuring eye hand co-ordination, Ball transfer test was adopted. The scoring was done according to the rule led down the authors. This test is highly reliable & valid for measuring hand reaction time & eye hand co-ordination of selected samples.

2.3 Statistical Analysis

To find out significant difference among cricket & handball players ‘t’ test was used.

3. RESULTS & DISCUSSION

To compare cricket & handball player’s on eye hand co-ordination, mean, standard deviation & ‘t’ test were computed and data pertaining to this have been presented in table 1. To 3 and depicted figure 1 to 3.

**TABLE 1
COMPARISON BETWEEN FEMALE CRICKET & HANDBALL PLAYERS ON AUDITORY REACTION TIME (ART)**

Groups	N	Mean	SD	MD	t-value
Handball Players	25	1.09	0.69	0.06	0.69
Cricket Players	25	1.09	0.69		

‘t’ (0.05) = 1.98, ‘t’ (0.01) = 2.61

From table no. 1, result showed that female handball players have faster auditory reaction time (ART) (M=1.09, SD= 0.69) as compared to female cricket players (M=1.15, SD= 0.44). The ‘t’ value is 0.69, so there is no significant difference has been found at 0.05 level , because the calculated value which is less than the tabulated value.

FIG.NO.1



**TABLE 2
COMPARISON BETWEEN FEMALE CRICKET & HANDBALL PLAYERS ON VISUAL REACTION TIME (VRT)**

Groups	N	Mean	SD	MD	t-value
Handball Players	25	0.76	0.32	0.06	0.35
Cricket Players	25	0.69	0.18		

‘t’ (0.05) = 1.98, ‘t’ (0.01) = 2.61

From table no. 2, result indicated that female handball players have slow visual reaction time (VRT) (M=0.76 SD= 0.32) as compared to female cricket players (M=0.69, SD= 0.18 because greater the timing lesser the VRT. The ‘t’ value is 0.35, so there is no significant

difference has been found at 0.05 level because the calculated value which is less than the tabulated value.

FIG.NO.2

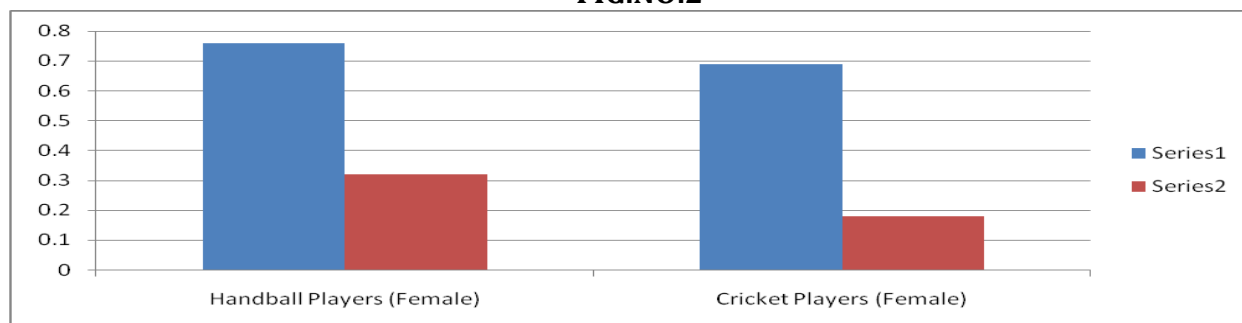


TABLE 3

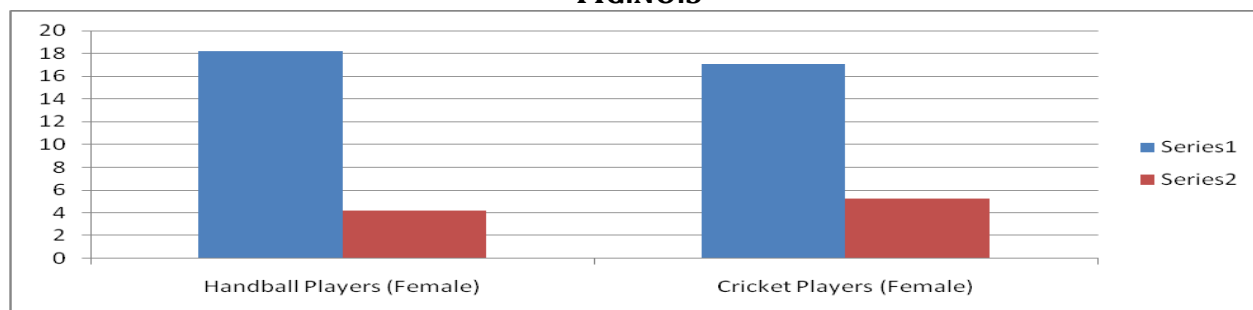
COMPARISON BETWEEN FEMALE CRICKET & HANDBALL PLAYERS ON EYE HAND COORDINATION (EHC)

Groups	N	Mean	SD	MD	t-value
Handball Players	25	18.16	4.22	1.08	0.88
Cricket Players	25	17.08	5.25		

't' (0.05) = 1.98, 't' (0.01) = 2.61

From table no. 3, result found that the female cricket players have poor eye hand coordination (EHC) (M=17.08, SD= 5.25) as compared to female handball players (M=18.16, SD=4.22). The 't' value is 0.88 so there is no significant difference has been found at 0.05 level because the calculated value which is less than the tabulated value.

FIG.NO.3



4. CONCLUSIONS

- i) Female cricket players have slow auditory reaction time (ART) as compared to female handball players.
- ii) Female cricket players have faster visual reaction time (VRT) as compared to female handball players.
- iii) Female cricket players have poor eye hand co-ordination (EHC) as compared to female handball players.

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THE EFFECT OF BACKPACK ON DYNAMIC POSTURAL STABILITY IN YOUNG HEALTHY INDIVIDUALS

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ABSTRACT

Background : Several studies have studied the effect of external disturbances on postural stability. However spinal loading and its effects on dynamic posture have not been reported so far. Objective : To study the effect of backpack on dynamic postural stability in young healthy individuals. Study Design : Observational study. Methodology : 85 healthy, young adults (female, male) fulfilling the inclusion and exclusion criteria were recruited. SEBT was performed with backpack worn on high spinal level on 3 consecutive days with 20% , 10% and without weight. The maximum excursion distance were recorded in 3 excursion directions which are Anterior(A), posteromedial(PM) and posterolateral(PL) directions. Data Analysis : : was done by using SPSS version 16. Tukey's method was used for Pairwise comparison Result : The result of the study shows that Backpack has significant effect on Dynamic Postural stability. Dynamic Postural Stability affected more by Backpack weighing 20% BW than Backpack weighing 10% BW. Posterolateral Direction without weight has maximum excursion distance i.e. 123cms. Conclusion: The study concluded that spinal loading significantly affects the postural stability.

Key words : Postural stability, backpack, SEBT, spinal loading.

1. INTRODUCTION

The ability to control our body's position in space relies on the complex interaction of the musculoskeletal and neural systems, collectively referred to as the *postural control system*. Human posture is inherently unstable since two-thirds of the body mass is located two-thirds of body height above the ground.

1.1 Biomechanical aspects and movement strategies of postural control

Postural stability depends on the control of both gravitational forces to maintain posture and acceleration forces to maintain equilibrium^{1,2}. Acceleration forces may be elicited from within the body as a result of voluntary movement or from outside as a consequence of unexpected external disturbance³. Mandatory to postural stability is the ability to maintain the body's center of mass (COM) within the limits of the base of support (BOS)^{2,4}. When this condition is satisfied, the standing person can resist destabilizing influences of gravity and actively move the COM. Postural control, even during quiet stance, is dynamic, since standing is a quite unstable position characterized by small amounts of spontaneous postural sway and periodic corrections to overcome the destabilizing influence of gravity^{2,5}. Dynamic stability describes the neuromuscular system's capacity to restore or maintain a function successfully, despite naturally occurring disturbances. Because quiet stance is characterized by body sway, movement strategies are required to maintain dynamic postural stability.

Controlling postural stability during walking also is quite different and far more complex than maintaining upright stance.⁶ The only stabilizing period during walking is the double-support phase, when both feet are in contact with the ground and the whole-body COM remains within the BOS⁷.

1.2 Sensory system in postural control

Sensory control essentially contributes to the regulation of postural stability while standing as well as walking. Under normal conditions, peripheral sensory inputs from the visual, vestibular, and somatosensory systems are available to detect the body's position and movement in space with respect to gravity and the environment. Each of these sensory systems provides different information and therefore a specific frame of reference for postural control⁸.

1.3 Neurophysiology of postural control

The involvement of spinal, brainstem, cerebellar, and basal ganglia circuits in mediating postural responses during standing could be demonstrated in animal models^{9,10} and by clinical studies in humans^{11,12,13}. The spinal neural circuitry by itself appears to be able to activate anti-gravity (extensor) muscles tonically for appropriate anti-gravity support¹⁴. However, postural stability is not solely organized at the spinal level, but requires control by higher supraspinal centers like the brainstem and the cerebellum. Brainstem nuclei were shown to contribute to the regulation of anti-gravity muscle tone¹⁵, the integration of sensory inputs for balance control¹⁶, the organization of anticipatory control accompanying voluntary movements¹⁷, as well as the restoration of equilibrium following disturbance of balance¹⁸. The cerebellum is an important site for the integration of sensory information into the postural control scheme¹⁹. It is involved in the adaption and coordination of reactive postural adjustments based on prior practice and experience²⁰. Furthermore, the cerebellum is thought to ensure the appropriate scaling of postural response magnitudes for anticipatory postural adjustments¹². The basal ganglia have been

proposed to contribute to the ability to quickly modify muscle patterns with respect to changing task and environmental conditions. Correspondingly, it was shown that the dysfunction of basal ganglia due to Parkinson's disease results in an inability to alter the magnitude and pattern of postural responses for changes in postural demands^{21,22}. Therefore, it has been suggested that the basal ganglia are critical for pre-selecting a brainstem response pattern optimal for the initial conditions, with the result that an appropriate response can be rapidly triggered. Cortical involvement in shaping postural responses has been proposed to contribute (1) via a cerebellar-cortical loop to the adaptation of postural responses based on prior experience, and (2) via a ganglia-cortical loop to the pre-selection and optimization of postural responses based on current context²³.

1.4 Star Excursion Balance Test

SEBT is dynamic postural control test requires balance on one leg with maximum reach of the opposite leg. There are 8 directions for the stance leg, only 3 directions were assessed in this study limited to Anterior(A), posteromedial(PM) and posterolateral(PL) directions²⁴.

1.5 Additional loading & postural stability

The postural stability is also result of voluntary or involuntary movements in response to unexpected external disturbances.³ These disturbances can be overloading(OL) or underloading(UL). It is suggested that in OL, augmented ankle joint torques are compensated by quick reflex-induced postural reactions in distal muscles. Contrarily, UL is associated with diminished joint torques and thus, postural equilibrium may be controlled by the proximal segments to adjust the center of gravity above the. However spinal loading and its effects on dynamic posture have not been reported so far.²⁵

The purpose of the study was to find out whether backpack affects the postural stability of young healthy individuals. To find out which affects dynamic postural stability more, backpack weighting 10% BW or 20% BW. To find out in which direction reach distance is maximum.

2. METHODOLOGY

2.1 Design Overview : The study is observational

2.2 Sampling : Convenience sampling method

2.3 Sample

The Subjects for the study were recruited from T.D.T.R. DAV institute of physiotherapy and rehabilitation Yamunanagar and M.D.M. Dental College, Yamunanagar.

2.4 Inclusion criteria

- Age 18 to 25
- Both males and females
- Young healthy individual
- Not engaged in any athletic activity
- No joint pain
- No surgical procedure

2.5 Exclusion criteria

- prior balance training
- History of any dizziness
- Any inner ear disorders
- Any nervous system problems

- Any bone or joint abnormalities
- Any uncorrected problems with vision

2.6 Procedure

85 healthy, young adults (female, male) fulfilling the inclusion and exclusion criteria were recruited. All participants prior to the study signed a voluntary consent form that was approved by the college review board. Height, weight and leg length was measured. The test was explained to each participant verbally, allowing the participants to ask any questions regarding the test. Testing for each individual was separated. A test separation goal of 3 days was determined:

- On day 1st all participants performed SEBT without weight.
- On day 2nd all participants performed SEBT with a backpack worn at high spinal level i.e. (superior aspect of backpack being placed at C7) weighing 10% of their body weight.
- On day 3rd all participants performed SEBT with a backpack being placed at same level, weighing 20% of their body weight.

2.7 Tool Used

Star Excursion Balance Test- 3 excursion directions were assessed which are Anterior(A), posteromedial(PM) and posterolateral(PL) directions. The reach directions were evaluated by affixing three Measuring Tape to the gymnasium floor, one orientated Anterior (A) to the Apex and two aligned at 135° in the Posteromedial (PM) and Posterolateral (PL) directions. The participants was asked to reach as far as possible along each 3 reach directions. The researcher recorded each reach distance with a mark on the Measuring tape as the distance from the center to the point of maximum excursion by the reach leg. And return the reaching leg back to the center. All trials were conducted barefoot to eliminate additional balance and stability gained from shoes. Each participant undertook 4 practice trials in each direction to minimize learning effect immediately prior to the test session following a 5 min rest period, participants performed 3 trails in each of 3 reach directions. The trial was discarded and repeated if the Participants:-

- Failed to maintain unilateral stance.
- Lifted or moved the stance foot from the center of 3 consecutive lines.
- Failed to return the reach foot to the center point.



3. RESULTS

To find out the effect of backpack on dynamic postural stability in young healthy individuals, descriptive statistics, F-ratio, Pearson Moment coefficient correlations were computed by using SPSS version 16 and data pertaining to this, has been presented in Table 1 to 4 and depicted figure 1 to 6.

TABLE 1 (a)
COMPARISON AMONG ANTERIOR (A), POSTEROMEDIAL (PM) AND POSTEROLATERAL (PL) DIRECTIONS WITHOUT WEIGHT

Directions	M	SD	N	Max. Excursion	Mini. Excursion	Range	F-test
Anterior Direction	88.52	13.69	85	115	58	57	6.79*
Posteromedial Direction	92.48	13.81	85	120	61	59	
Posterolateral Direction	96.27	13.63	85	123	64	59	

Significant at .05 level.
 F.05 (2, 252)=3.032

TABLE 1 (b)
TUKEY'S METHOD FOR PAIRWISE COMPARISON

A	PM	PL	MD
88.52	92.48	-	3.96
88.52	-	96.27	7.75*
-	92.48	96.27	3.79

*Significant at .05 level

Table 1 (a) and (b) indicates that calculated F value 6.79 is more than Table value that is 3.032 at 5% level of significance. So, Result is significant b/w Directions without wt. Pairwise comparison showing 7.76 significant difference b/w A and PL directions. So, Result is significant b/w A and PL directions. The difference were not significant b/w A and PM, PM and PL directions.

TABLE 2 (a)
COMPARISON AMONG ANTERIOR (A), POSTEROMEDIAL (PM) AND POSTEROLATERAL (PL) DIRECTIONS WITH 10% BODY WEIGHT.

Directions	M	SD	N	Max. Excursion	Mini. Excursion	Range	F-test
Anterior Direction	85.15	13.87	85	109	52	57	6.16
Posteromedial Direction	88.91	13.52	85	116	58	58	
Posterolateral Direction	92.48	13.44	85	119	60	59	

*Significant at .05 level
 F.05 (2, 252)=3.032

TABLE 2 (b)
TUKEY'S METHOD FOR PAIRWISE COMPARISON

A	PM	PL	MD
85.15	88.91	-	3.76
85.15	-	92.48	7.33*
-	88.91	92.48	3.57

*Significant at .05 level

Table 2 (a) and (b) indicates that calculated F value 6.16 is more than Table value that is 3.032 at 5% level of significance. So, Result is significant b/w Directions with 10% BW. Pairwise comparison showing 7.33 significant difference b/w A and PL directions. So, Result is significant b/w A and PL directions. The difference were not significant b/w A and PM, PM and PL directions.

TABLE 3 (a)
COMPARISON AMONG ANTERIOR (A), POSTEROMEDIAL(PM) AND POSTEROLATERAL(PL) DIRECTIONS WITH 20% BODY WEIGHT.

Directions	M	SD	N	Max. Excursion	Mini. Excursion	Range	F-test
Anterior Direction	81.94	13.81	85	106	50	56	5.50*
Posteromedial Direction	85.36	13.35	85	111	55	56	
Posterolateral Direction	88.80	13.27	85	113	57	56	

*Significant at .05 level
 F.05 (2, 252)=3.032

TABLE 3 (b)
TUKEY'S METHOD FOR PAIRWISE COMPARISON

A	PM	PL	MD
81.94	85.36	-	3.42
81.94	-	88.80	6.86*
-	85.36	88.80	3.44

*Significant at .05 level

Table 3 (a) and (b) indicates that calculated F value 5.50 is more than Table value that is 3.032 at 5% level of significance. So, Result is significant b/w Directions with 20% BW. Pairwise comparison showing 6.86 significant difference b/w A and PL directions. So, Result is significant b/w A and PL directions. The difference were not significant b/w A and PM, PM and PL directions.

TABLE 4
CORRELATION BETWEEN HEIGHT AND LEG LENGTH.

Correlations	Age	Height (in cms)	Leg length (cms)
A without wt	-.229*	.450**	.513**
A '10% BW	-.231*	.436**	.490**
A '20% BW.	-.223*	.413**	.455**
PM without wt	-.228*	.430**	.505**
PM '10% BW	-.217*	.437**	.500**
PM '20% BW	-0.212	.437**	.490**
PLwithoutwt	-0.208	.427**	.533**
PL'10% BW	-0.195	.452**	.544**
PL'20% BW	-0.191	.443**	.529**

Significant at the 0.05 level $r_{.05} (83)=0.213$

Table 4 indicates that there is strong correlation between height and leg length at 5% level of significance.

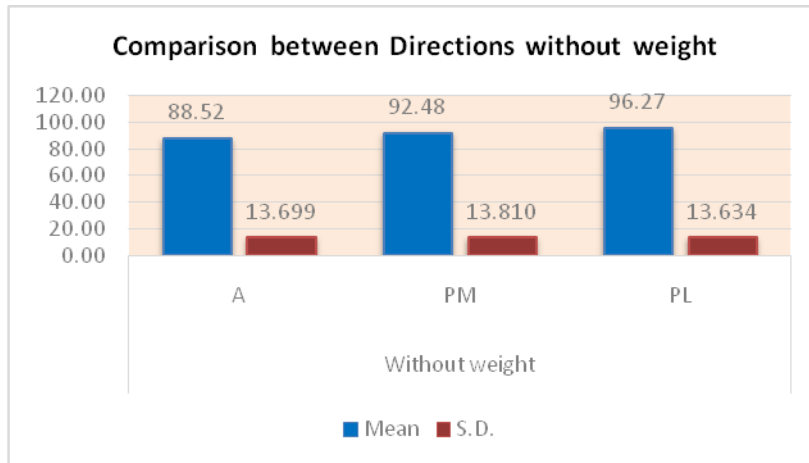


Figure1: Comparison between directions without weight.

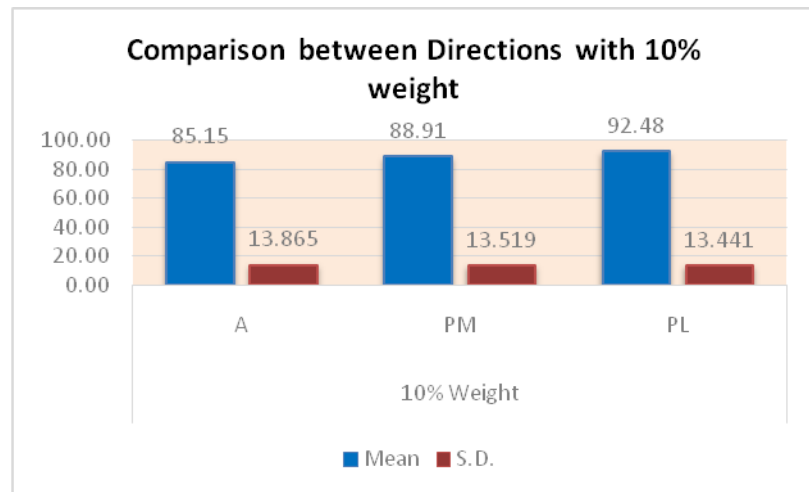


Figure 2: Comparison between directions with 10 % BW.

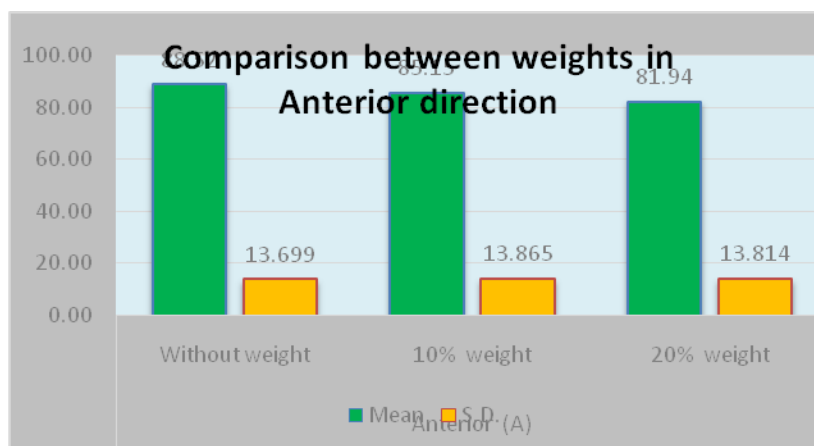


Figure 3: Comparison between Weights in Anterior direction.

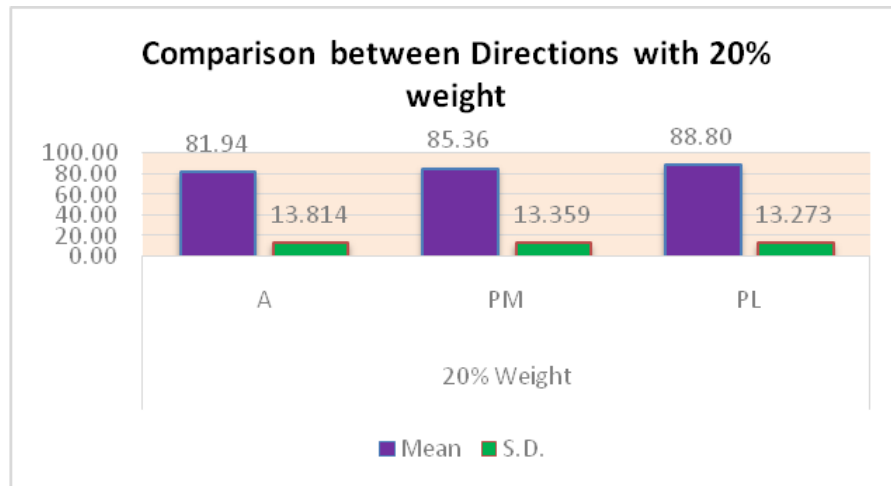


Figure 4: Comparison between directions with 20% BW.

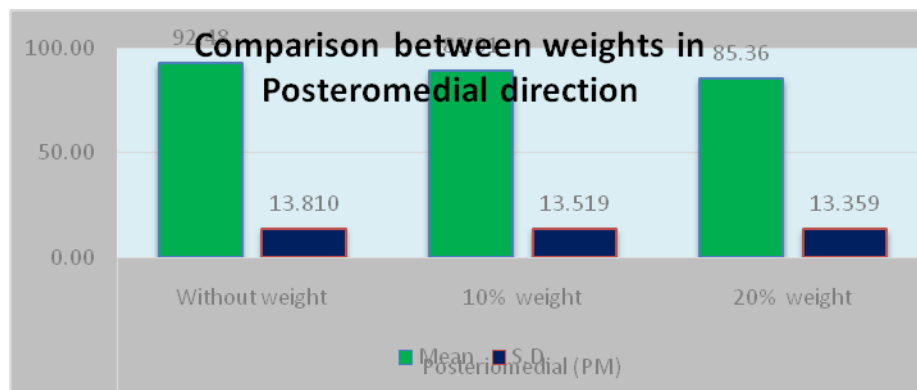


Figure5: Comparison between Weights in Posteromedial direction.

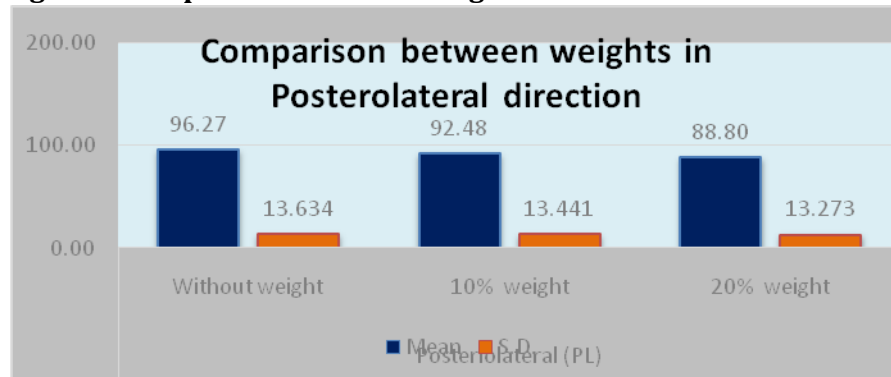


Figure 6 : Comparison between weights in Posterolateral direction.

4. DISCUSSION

While carrying a Backpack, it may happen that the total weight on the body increases. Due to this the direction and magnitude of the resultant force changes that leans the body in forward direction. Finally the body's center of gravity changes affecting the postural stability. A healthy body compensates for this change to maintain stability commonly; the head is raised up to prevent falling forward. If body's adjusting capacity is exceeded, health is affected.

Depending upon the magnitude, direction, frequency and duration of the external forces due to Backpacks one or more of the following may happen either instantaneously or over time: Tiredness or muscle fatigue, swelling, pain in the head, neck, back, shoulders arms or hands, muscle spasms or stiffness, tingling or numbness, curved or rounded back, Altered gait.

The immediate result of carrying too much unbalanced weight for too long is muscle soreness and strained ligaments. Researchers have found that Backpacks lead to restricted movement of spine and altered the fluid content of discs, making the individuals a prime candidate for permanent structural damage such as herniated ("slipped") disc and degenerative arthritis of spine later in life. This arthritis leads to LBP. Chronic LBP leads to reduced proprioception in spine causes altered balance and postural stability.

Spinal joints between adjacent vertebrae are rich in mechanoreceptor nerve fibers that supply information to the brain. This reflex pathway is necessary for vestibular and ocular righting reflex actions, normal spinal coupling motions, balance and proprioception. As a joint is compressed inflammation result, as well as a decreased mobility of nutrients getting into the joint. Joints are not lubricated or nourished as efficiently and joint pathology results, which destroys the reflex arc to the brain. As the arc is destroyed: the individual will gradually lose his/her expected coupling motion, righting reflex actions, ability to maintain static and dynamic postural stability and balance under gravity. So, carrying external weights affect the dynamic postural stability.

5. CONCLUSION

- It is concluded that Backpack has significant effect on Dynamic Postural stability in young healthy individuals.
- Both Backpack weighing 10% BW and 20% BW affect the dynamic Postural Stability but Dynamic Postural Stability affected more by Backpack weighing 20% BW than Backpack weighing 10% BW.
- Posterolateral Direction without weight has maximum excursion distance i.e. 123cms.

6. LIMITATION

- Non-highly equipped instruments.
- This study recruited both males and females. Males and females are different in many aspects for example, there Anthropometric estimates are different. Hence, the application of different backpack weights may lead to different responses between genders.
- Learning effect may has being present since practice was provided before data collection these effects are throughout unlikely to have substantially influenced the experimental findings.

7. FUTURE SCOPE

- Effects of backpack weight on postural deviation.
- To determine gender differences on posture stability.

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POSTURAL COMPARISON OF DEXTRIOUS AND AMBIDEXTROUS PLAYERS AND THE EFFECTS OF MEDICINE BALL EXERCISES ON POSTURAL CORRECTION

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ABSTRACT

The purpose of the study was the postural comparison of dexterous and ambidextrous players and the effects of medicine ball exercises on postural correction. This study aims to take postural comparison between the players who are using their one side of the body and the players are using their both side equally. In this study, the subjects were selected from various institutions in Kerala, India namely Kannur University Mangattuparamba Campus, Christ College Irinjalakuda, S N College Kannur, LNCP Trivandrum, Center for Physical Education Calicut University, ST. Thomas College Pala, ST. Thomas College Thrissur and St. Pius College Rajapuram . The investigator has visited these institutions and collected data directly from the subjects. A total of hundred (N=100) subjects were selected for this study and the fifty (n=50) from the each dextrose and ambidextrous groups. The New York Posture Rating Scale was utilized to measure the posture of subjects. Depending up on the deformity, the players were scored according to the specific norms of the test like 5 for good posture, 3 for average, 1 for poor posture. For the experimental purpose, a total of twenty (N=20) deformed players were selected to this study and divided them in to two groups namely experimental group and control group. The experimental group was undergone for an experiment with the duration of 6 months by using medicine ball. There was no experiment has taken by control group. At the end of the experimental period, there was a postural measurement has done by investigator for both experimental and control group. After taking the raw scores of the subjects, the percentage of postural deformity was calculated by using independent ' t ' ratio. From the findings we would make understand that the ambi- dexterous players show comparatively good posture than the dexterous players. Posture of the cricket players was the most fatly than the other players. In the case of the anterior postural region cricket players and the lateral postural region the volleyball players had the poor postural level as compared to the other players. The swimmers had the good posture among the anterior and lateral region of posture. On regarding the findings of postural correction, the experimental group has shown a significant difference in the posture than the control group.

Keywords: Medicine Ball, Posture, University Players, Dexterous, Ambidextrous

1. INTRODUCTION

Human posture is the basic thing that a sports man need for his sports performance at an optimum level. The postural development of a player is depends up on several factors like nature of physical activity, life style, heredity.

In sports and games, different types of movements are there. In some games the players use their one side of the body predominantly. In the case of a right hand bowler in cricket, his right hand side is stronger than the left hand side because he needs to use his right side to perform the skill. The continuous use of the hand is leads to developing strong muscles on that particular area. These developments are causes to imbalance between muscles on the basis of its strength. In the case of a right arm fast bowler, his right deltoid muscles are stronger than the left side, and left oblique muscles are stronger than the right side. This improper toning of the muscles is slowly leads to the improper alignment of the spine. .E.g.: Badminton, cricket, javelin throw. In sports like weight lifting and swimming both hand come into play. So the both side of our body get equal strength. In the case of swimming, the swimmer uses his both hands equally for the execution of the skill. In this case his body gets equal strength on each side. This study aims to take postural comparison between the players who are using their one side of the body and the players are using their both side equally. In sports and games, different types of movements are there. In some games the players use their one side of the body predominantly. In the case of a right hand bowler in cricket, his right hand side is stronger than the left hand side because he needs to use his right side to perform the skill. The continuous use of the hand is leads to developing strong muscles on that particular area. These developments are causes to imbalance between muscles on the basis of its strength.

2. METHODOLOGY

2.1 Selection of subjects

In this study, the subjects were selected from various institutions in Kerala, India namely Kannur University Mangattuparamba Campus, Christ College Irinjalakuda, S N College Kannur, LNCP Trivandrum, Center for Physical Education Calicut University, ST. Thomas College Pala, ST. Thomas College Thrissur and St. Pius College Rajapuram . The investigator has visited these institutions and collected data directly from the subjects. A total of hundred (N=100) subjects were selected for this study and the fifty (n=50) from the each dextrose and ambidextrous groups. The New York Posture Rating Scale was utilized to measure the posture of subjects. For the experimental purpose, a total of twenty (N=20) deformed players were selected to this study and divided them in to two (n=10) groups namely experimental group and control group.

2.2 Selection of variables

2.2.1 Criterion Variable - Body Posture

2.2.2 Independent Variables - Medicine Ball Exercise

2.3 Selection of test:

New York postural test* was utilized for measuring the posture of selected players

2.4 Experimental design

In this study purposive random group design was utilized to determine the effect of resistance band exercise on postural corrective process.

2.5 Administration of training program

Total duration of the training program was 6 months with 2 days per week. The total duration of each training period was 60 minutes, including warm up, training and cooling down. There were two groups in this study named as band exercise group and control group. The control group hasn't take part in any training program.

Medicine Ball Exercises for experimental group

Medicine Ball Exercises	1. Up Hold Squat, 2. Standing Back Hold, 3. Single Arm Up Hold 4. Upper Body Anterio-Medial Twist 5. Upper Body Posterio- Medial Twist
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Monthly intensity setting chart for six month plan

S.No.	Month	Intensity
1	October	Low
2	November	Moderate
3	December	Moderate
4	January	High
5	February	High
6	March	High

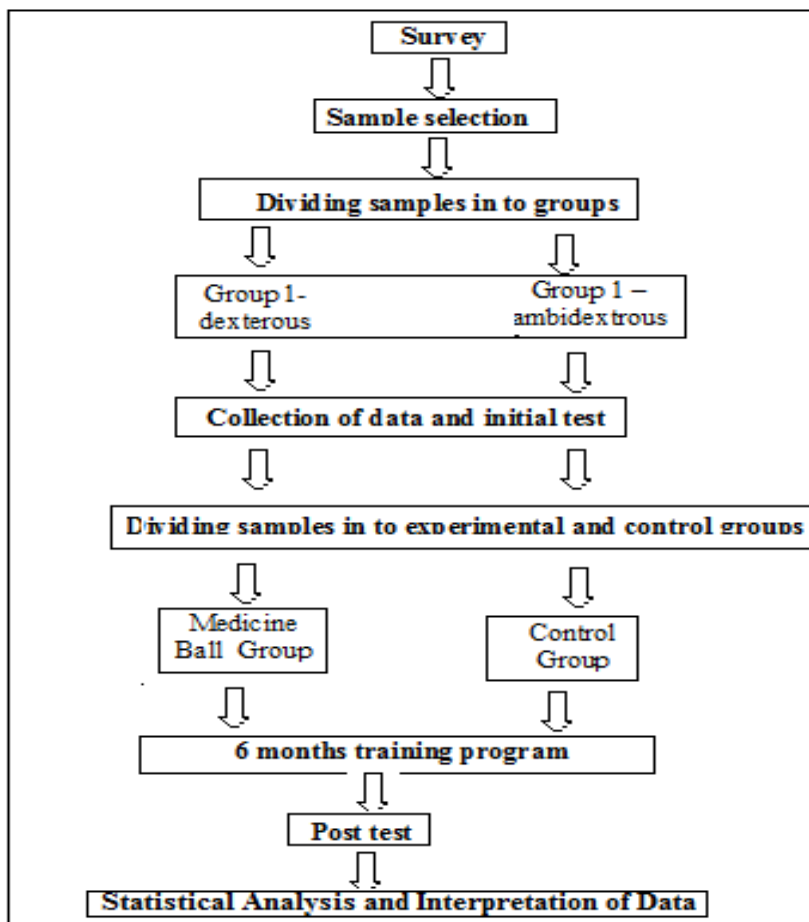
Note-Load was depends on the personal improvement and ability

Weekly workout sessions chart

Days	Sessions	
	Exercise band group	Control group
Sunday	No experiment	No experiment
Monday	*	No experiment
Tuesday	No experiment	No experiment
Wednesday	No experiment	No experiment
Thursday	No experiment	No experiment
Friday	*	No experiment
Saturday	No experiment	No experiment

(* = work out sessions)

FLOW CHART



3. RESULTS AND DISCUSSION

Independent ‘t’ test was utilized for comparing the mean difference between dexterous and ambidextrous players on their posture and the difference of Medicine ball exercise group and control group on posture

TABLE 1
TOTAL SCORE OF ANTERIOR POSTURE GRADE OF SELECTED PLAYERS.

S. No.	Game/Sport	N
1	Badminton	240
2	Cricket	162
3	Handball	204
4	Throwers in Athletics	177
5	Volleyball	210
6	Weightlifters	300
7	Power lifters	300
8	Bodybuilders	300
9	Runners	286
10	Swimmers	300

From the table 1, it is clear that the ambidextrous players (**last five**) scored more than the dexterous players (**first five**) in anterior region.

TABLE 2
TOTAL SCORE OF LATERAL POSTURE GRADE OF SELECTED PLAYERS

S. No.	Game/Sport	N
1	Badminton	299
2	Cricket	322
3	Handball	328
4	Throwers in Athletics	332
5	Volleyball	327
6	Weightlifters	336
7	Power lifters	344
8	Bodybuilders	340
9	Runners	346
10	Swimmers	348

From the table 2, it is clear that the ambidextrous players (**last five**) scored more than the dexterous players (**first five**) in lateral region.

TABLE 3
TOTAL SCORE OF ANTERIOR AND LATERAL POSTURE GRADE OF SELECTED PLAYERS.

S. No.	Game/Sport	N
1	Badminton	539
2	Cricket	484
3	Handball	532
4	Throwers in Athletics	509
5	Volleyball	537
6	Weightlifters	636
7	Power lifters	644
8	Bodybuilders	640
9	Runners	632
10	Swimmers	648

From the table 3, it is clear that the ambidextrous players (**last five**) scored more than the dexterous players (**first five**) in both anterior and lateral region.

TABLE 4
STATISTICAL ANALYSIS OF DATA ON THE POSTURE OF DEXTEROUS AND AMBIDEXTRIOUS PLAYERS

GROUP	N	M	SD	Calculated 't'	REQUIRED 't'
Dextrous	5	5.202	23.50957	11.003	2.015
Ambidextrous	5	6.400	6.32456		

The obtained 't' score was more than the required t score, there for there were a significant difference in between dextrous and ambidextrous groups.

TABLE 5
TOTAL SCORE OF ANTERIOR AND LATERAL POSTURE GRADE OF EXPERIMENTAL AND CONTROL GROUP

	Experimental group	Control group
Pre- test score	479	490
Post test score	526	481

TABLE 6
STATISTICAL ANALYSIS OF DATA ON POST TEST SCORE

GROUP	N	M	SD	Calculated 't'	REQUIRED 't'
Experimental	10	50.30	6.52	4.14	2
Control	10	48.46	3.93		

4. CONCLUSIONS

1. There was a significant difference in between the scores of dexterous and ambidextrous players
2. The ambidextrous players had good body posture than the dexterous players
3. The experimental group has shown significant difference in the post test score than the pre test score there for the exercise band exercise is beneficial for postural correction
4. There weren't any significant chances in the pre and post test scores of control group.

5. RECOMMENDATIONS

This study can be conducted for different levels of players by opting different loading and equipment. It can be conducted for both sexes separately. It can be conducted for athlete and non-athlete.

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PSYCHOLOGICAL FACTORS IN SPORT PERFORMANCE: IMPACT ON TRAINING, PERFORMANCE, RECOVERY AND HEALTH

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ABSTRACT

Even though Psychology preparation is a component that has been often neglected by athletes and coaches alike, studies have shown that mental readiness was felt to be the most significant statistical link with Olympics ranking. Players need every now and again been cited will state how the mental perspective may be the A large portion imperative and only one's execution. That mental wellbeing model about sport execution purports that an opposite association exists between psychopathology additionally game executions. The model postulates that as an athlete's mental health either worsens or improves performance should fall or rise accordingly and there is now considerable support for this view. Investigations bring demonstrated that the middle of 70 Furthermore 85% of great What's more unsuccessful Competitors could make identifier utilizing general mental measures from claiming identity structure Also temperament state, An level better than opportunity Anyhow insufflate for the reason for selecting players. Longitudinal the Mental Health Model (MHM) Examination demonstrates that those temperament state reactions of players show a dose-response relationship for their preparing load, a discovering that need indicated possibility for diminishing that frequency of the staleness syndrome done players who experience escalated consideration physical preparation. The MHM also has implications for the general care of athletes as support services have traditionally been limited to preventing or treating physical problems. Despite its simple premise and empirical support, the MHM has often been mischaracterized in the sport psychology literature and recently some authors have questioned its validity. This diagram will rundown MHM research, including those more later fill in directing, including the model's progressive offers over an exert to purpose debate encompassing the model[1].

Keywords: Players, Psychological Factors, Staleness Syndrome, Sport Performance, Impact on Training, Health.

1. INTRODUCTION

Individuals have come to see the vitality of sports exercises for reference to Different viewpoints for exists additionally due to this, fact that sports preparing need also expanded with a significant degree. Sports preparation need aid a procedure which prepares players to diverse level about sports competitions. Sports preparing are recognized concerning illustration essential methodology for single person who take part for different games occasions. Sports preparation help a competitor should accomplish finer brings about sports exercises. Sports preparing help On Taking in abilities and strategies which brings about accomplishing top execution in sports[2].

Sport psychology is an interdisciplinary science that draws on knowledge from many related fields including biomechanics, physiology, kinesiology and psychology. It includes the examine of how mental variables influence execution what's more entryway support done game What's more practice influence mental What's more physical Components. As well as instruction and training of psychological skills for performance improvement, applied sport psychology may include work with athletes, coaches, and parents regarding injury, rehabilitation, communication, team building, and career transitions.

Psychological factors are the mental factors that help or prevent sportspeople from being in the right 'frame of mind' to perform well. Previously, game you must need to perform Furthermore will enhance your execution. Your determination to would this will be called inspiration. The power for it may be called arousal. If training leads to boredom you will lose motivation. If you are 'wound up' you are suffering from anxiety; you will feel tension in your body and this can prevent you from performing well. Feedback is information about the outcome of a performance and it can greatly affect future performances. Your personality can affect your choice of sports and performance. Extroverts are socially outgoing. They need high arousal levels to perform. Coaches and team mates need to keep them 'excited' about performing. They prefer team games with open skills and lots of unpredictability. Open skills are used in sports where you cannot predict what will happen next, e.g. in an invasion game such as hockey[3].

Introverts are generally shy. They perform better at lower arousal levels. Coaches and team mates need to allow them to stay calm and focused. Too much stimulation will cause them to be over-aroused and they will not perform well. They incline toward sports for fine movements, shut aptitudes and standard schedules. Shut aptitudes need aid utilized within sports the place you might control the environment, e. G. Placing previously, golf.

1.1 History

For its shaping, sport psychology was primarily the domain of physical educators, not researchers, which can explain the lack of a consistent history. However, numerous instructors sought to explain the various phenomena related physical activity and developed sport psychology laboratories. Sport psychology has a relatively short past, and in latest years is it becoming far more accepted and utilized as a valued competitive edge among athletes and coaches. In 1897, an Indiana University psychologist, Dr. Norman Triplett, wrote what was considered the first scientific paper on sport psychology, on the social facilitation behavior of bicyclists. In the initial 1920's, that main game brain research center might have been made to Berlin, Germany, by Dr. Carl Diem. Quickly after, game brain research landed to America At Dr. Coleman r. Griffith made those to start with sport brain research lab in the u. Encountered with urban decay because of deindustrialization, innovation developed,

government lodging. In the state for Illinois, Dr. Griffith likewise made Also taught those principal college level courses for game brain science toward that college about Illinois, to 1923. To addition, Dr. Griffith might have been the initial game therapist at any point procured Eventually Tom's perusing a expert sports team, those Chicago Cubs baseball group. For as much pioneering efforts, he is recognized those father tan of the science for game brain research in the United States [4].

We might define brain science as that study of the mankind's mind, feelings Furthermore conduct. Brain science may be an academic also connected field. Those American mental companionship states that game brain science will be those "exploratory study of the mental factors that would identified with investment Furthermore execution for sport, exercise, Also Different sorts of physical action. " those mossy cup oak paramount certifying body to sport psychology, those Acquaintanceship to connected sport Psychology, states that they "promote those moral practice, science, and backing for game and exercise psychology".

1.2 Psychological Factors Affecting Sports Training

In present, it is referred to that a sufficient preparing of the players will be those basic states for the advancement about sports elites. On the great holders kept all it will be also an actuality that sports preparing could influence toward a few variables. These Components incorporate Physiological, mental also socio-economically. Physiologically, a debilitated conduct makes a debilitating in the weight slant transversely through cell layers, settling on it harder for those tissues of the physique to consume Furthermore utilization oxygen. Same time discovered that mental Components in mentor behavior, inspiration Furthermore dread of damages Around Competitors fundamentally influence the procedure from claiming preparing. Concerning illustration shown toward that players for the most part favor co-operative honing Furthermore preparing style which incorporates cooperation on choice making. He further expressed that players feel solace to co-operative preparing system. Inspiration is recognized likewise imperative apparatus to sway players on carry on in a specific way. On the hand absence of inspiration influences that procedure for preparing also. Inspiration instigates the Competitors on show greatest brings about sports preparation. Verbal appreciation, respecting one's execution Also acknowledgement were those inspiration Components proposed by writer done as much investigation. Physical training Also sports need aid physical situated disciplines, same time sports preparing would those transform from claiming deliberate physical hones to which the possibilities for harm happen. Due to this fear, competitor preparing procedure could influence. Athlete's dread of physical damage could have impacts on the procedure from claiming sports preparation. An exploration study highlighted a portion variables impact on sports preparing project. These factors incorporated dread of physical wounds coming about because of training, dread of strenuous physical works out what's more a greater amount fundamentally preparing authority conduct technique [5].

1.3 How can psychology affect performance?

Psychology refers to the many aspects of the mind and how it affects the body. It is one of the biggest determinants of winning and losing at the elite level. Athletes, who have their psychology right, perform at their pinnacle more consistently over time and in different contexts and under various types of pressure. An athlete needs to be able to cope with pressure well, whether it be external or internal, so that they can focus on the competition. Some sports have particular psychological aspects to them, including trash talk or banter that

the athlete needs to be able to deal with effectively. World class Competitors have Different inspirations to succeed what's more think how brain research influences their execution. They after that create methodologies on upgrade inspiration Furthermore wrist binding's uneasiness. An incredible sample from claiming a competitor with beneficial brain science may be Roger Federer, who is known to as much quiet nature on the tennis court, in any case of the circumstances[6].

1.4 Referring Athletes to Mental Health Providers

Athletes experience emotional responses to injury, and most of these responses are transient. The athletic care network and supportive social network are often effective in helping the athlete deal with these issues. However, athletes with problematic emotional reactions who necessity treatment should be referred to a licensed mental health provider, preferably one with experience working with athletes. Licensed mental health providers have met the minimum educational and training requirements by their state. These are the only mental health providers licensed to treat problematic emotional reactions. Along with other providers, they may also offer "sport psychology" consultation. For treating both transient and problematic passionate responses, competitor secrecy is for specific vitality. Around athletes, there are distinctive levels for solace with referral with authorized mental wellbeing suppliers. Obstacles will referral incorporate general apprehension, secrecy concerns, recognition from claiming others, dread of uncovering symptoms, What's more misconception of mental wellbeing medicine. Mentors What's more less group physicians' attitudes towards mental wellbeing need an effect What's more impact once Competitors. Furthermore, accessibility to providers and issues related to reimbursement may serve as obstacles to obtaining treatment [7].

1.5 Stress and Sports Performance-

Sports performance may be not basically an item of physiology Also biomechanical in any case mental elements likewise assume an essential part clinched alongside figuring out execution. On the different hand, each competitor need a specific anxiety level that is required should streamline as much alternately her diversion. That bar relies on factors for instance secret word experiences, adapting reactions Furthermore heredity. Stress Throughout sports, such as previously, anything else in life, might be acute, wordy or unending. For the practically a component over sports, it will be episodic, if throughout an aggressive match the middle of friends, or a title amusement. Same time intense anxiety might really go about as like a challenge, in not harnessed, it camwood develop with not best a wordy stressor that cam wood influence one in the in length term, yet all the might also hamper one's assume.

1.6 How does Stress Affect Performance?

The affiliation between stress and performance has been portrayed by the stress response curve created by Nixon P. in 1979. Furthermore, pressure, an important stressor, has also a crucial influence on an individual's response to stress. One of the most noticeable effects of stress in one's life is the changes in his performance. While we can easily recognize the consequences of normal or excessive amounts of stress through mere observation, it's best to learn about the scientific relationship between stress and performance[8].

1.7 Sport Psychology Skills and Relative Performance

As is hopefully evident at this juncture in the article, sport psychology cannot make you a better athlete in an absolute sense. The thing that it could do will be help you perform during a level closer on your supreme possibility once any provided for day. To finishing so,

mental abilities preparation need the capacity to “level those playing field” between Competitors who have diverse outright abilities. As demonstrated to figure 6, we at the end of the day have our two Competitors on the beginning line of the 100-m dash. Athlete A possesses several of the physiological gifts that allow him or her to excel as a sprinter and as such has the capacity to run the 100 m in 13.72 s. Athlete B, but, was not born with these gifts and therefore only has the absolute potential to run the 100 m in 16.95 s. On paper then, Athlete A has important absolute performance advantage. On race day, nevertheless, both athletes are staring into a fairly strong headwind. This headwind is obviously going to slow both athletes down and thus affect their relative performance that day. Those fascinating relic over Ecological execution inhibitors will be that they overwhelmingly influence every one athletes’ just as. To completing so, Ecological Components the table no true execution playing point will an athlete, similarly as those competitor with the bigger supreme execution possibility still understands those same inalienable advantage

1.8 How to Prevent Anxiety in Sports Performance

1.8.1 Diaphragmatic Breathing: The diaphragm may be a muscle the middle of the midsection and the stomach pit. Those relaxing carried out toward contracting this muscle is known as diaphragmatic relaxing. It obliges straightforward act will take et cetera it ought a chance to be repeater a few times every day. Those join will aide you on figure out those procedure [9].

1.8.2 Relaxation Technique: Once the athlete feels the symptoms of anxiety for example increased heart rate, increased blood pressure or difficult breathing, a relaxation technique can help in controlling the anxiety. In one relaxation technique, the athlete is asked to lie down in a darkened room and think about relaxing his body from the outside inward. As a result, the blood pressure, breathing and hearth rate normalizes.

1.8.3 Visualization: Visualization is a technique, used by the athletes to control their anxiety. In this system one visualizes himself to a circumstance like the real occasion. That competitor visualizes himself winning in front of the whole swarm the place the off chance will be should occur.

1.9 Focus and Trends in Sport Psychology

What are the main focuses in sport psychology research? What are the main trends in applied psychological work with athletes, teams, and coaches? Noteworthy are two major focuses in sport psychology research, with two corresponding trends in applied work. The first understands the psychological factors that affect athletic performance and how athletes realize their potential in sport. The second important objective of sport psychology is to understand how athletes develop in sport and what are the “benefits” and “costs” of their multiyear sport participation. Applied aspects here include the need to help athletes cope successfully with career transitions and find a balance between sport and other spheres of life. Clinched alongside group sports, this also includes managing team-building issues also serving distinct players find parity the middle of distinctive What's more group investment What's more qualities [10].

1.10 Arousal and performance

Arousal for game could make characterized similarly as those level about actuation (both physiological Furthermore psychological) that a distinct encounters when faced with a wearing circumstances or assignment. It might a chance to be seen as a continuum extending from drowsiness/sleep should a psyched-up, hyperactive state. In the field from claiming

sports psychology, large portions models need been made on investigate arousal levels likewise they identify with physical execution [11].

1.11 Psychological Aspects of Athletic Injury

As noted, a sport-related injury can often bring about certain psychological aberrations that prohibit the patient from recovering as planned. Such negative affective responses tend to be global in nature, as evidenced by elevations on multiple scales of the Profile of Mood States. Conditions of concern may include psychological states and reactions for example general pain, stress/anxiety, exercise addiction, anger, treatment noncompliance, and depression. Fear is another common reaction in injured athletes: that is, fear of not recovering, of re injury, of losing positions, jobs, income, or family and friend support. Another common reaction is disbelief that an injury has occurred. a recent review of sports medicine practitioners indicated that an athlete's psychological state before injury may affect how the athlete reacts to the injury. Such as, athletes who express anger in the athletic arena may be prone to becoming depressed after an injury and frustrated with their inability to carry out their anger.

1.12 Performance anxiety

Performance or competitive anxiety can cause athletes to react both physically and mentally in a manner that can negatively affect their performance. Performance anxiety can manifest itself in two ways: (a) **physical (or somatic) anxiety** — butterflies, sweating, nausea, needing to go to the toilet (b) **mental (or cognitive) anxiety** — worrying, negative thoughts, confusion, lack of concentration.

A range of psychometric tests or sport anxiety questionnaires (SAQ) have been used by sports psychologists to understand and measure competitive anxiety. The Sport Competition Anxiety Test (SCAT) is one such test. Will assistance the competitor control aggressive anxiety, extend for physical strategies for example, progressive muscle unwinding also cognitive strategies for example, mental symbolism camwood be utilized [12].

2. CONCLUSION

Psychological factors have been shown to be an important antecedent to the onset of athletic injuries and also play an important role in injury rehabilitation and ultimately successful return-to play. Team physicians must consider psychological, along with physical factors, when treating and coordinating care for injured athletes. Sports psychology is the sport science that seeks to understand psychological and mental factors that affect performance in sports, physical activity and exercise, and apply these to enhance individual and team performance. Sports psychology is now so important to performance at the top level of sport that most elite sporting clubs and individuals employ sports psychologists to work with them. There would four significant execution aptitudes to a world class sportsmen What's more women, these constantly technical, physical, strategic also mental. The last ability may be one that camwood aggravate those urgent distinction for Competitors performing reliably should their abilities. Game brain research need assumed a paramount part in the understanding, preparing and extreme Frisbee the utilization of mental aptitudes to top performance.

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**EFFECT OF CHAIR YOGA AND PHYSICAL EXERCISES ON WORKING
WOMEN SUFFERING FROM STRESS AND LOW
BLOOD PRESSURE**

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ABSTRACT

The purpose of the study was to find out the effects of Chair Yoga and Physical Exercises on working women suffering from Low Blood Pressure. For this study 300 working women from Noida district of U.P. has been selected as subject at random for this study and their age was between 18-45 years. The selected groups were separated into two experimental groups and a control group. In the Experimental Group I (Chair Yoga Practice Group), Experimental Group II (Physical Exercises Practice Group). In the study, two different training approaches were adopted as independent variables, i.e., specific Yogasana Practice while sitting on a Chair and selected Physical Exercises. The Low Blood Pressure was chosen as a criterion variable. It was measured in millimetres of mercury (mmHg) with the help of a Sphygmomanometer. The result revealed that Low Blood Pressure level improved significantly over the eight weeks training period for Chair Yoga Practice and Physical Exercise among working women of Noida.

Keywords: Chair Yoga, Physical Exercises, Low Blood Pressure

1. INTRODUCTION

Man has made tremendous progress in almost every walk of the life. Modern scientists and researchers have absolutely changed the life style. However, pollution of air, water, body and mind is also the result of science. Longing for material wealth has hardened. The hearts of human beings, Human values are declining. Stress and strain are the causes of physical as well as mental distraction. Yoga has the surest remedies for man's physical as well as psychological ailments. It makes the organs of the body active in there functioning and has good effect on internal functioning of the human body.

Those women going for working in offices, they are having a lot of pressure from their superior as well as from their families. Their life is so busy that they are unable to take care of their physical fitness. When they are new in the work place at that time it didn't affect their health immediately by like slow poison, so many diseases surround them and normally it is seen Survival Pain, Lower Back Pain and Stress. The women those who used to for regular exercise they have less chance of suffering from such disease which is happening due to their working conditions.

2. METHODOLOGY

300 working women from Noida district of U.P. has been selected as subject at random for this study and their age was between 18-45 years. The selected groups were separated into two experimental groups and a control group. In the Experimental Group I (Chair Yoga Practice Group), Experimental Group II (Physical Exercises Practice Group). In the study, two different training approaches were adopted as independent variables, i.e., specific Yogasana Practice while sitting on a Chair and selected Physical Exercises. The Low Blood Pressure was chosen as a criterion variable. It was measured in millimetres of mercury (mmHg) with the help of a Sphygmomanometer.

3. RESULTS

The following tables illustrate the statistical results of the Effects of Chair Yoga Practices and Physical Exercises on Low Blood Pressure of working women of Noida.

TABLE I
ANALYSIS OF COVARIANCE FOR THE PRE TEST AND POST TEST DATA OF
EXPERIMENTAL GROUP I, EXPERIMENTAL GROUP II AND CONTROL
GROUP ON LOW BLOOD PRESSURE (Scores in mm of Hg)

Test	Exp. Group I	Exp. Group II	Control Group	Source of Variance	Sum of Squares	Degree of freedom	Mean Squares	Obtained 'F' ratio
Pre-test mean	104.72	106.45	116.13	B	7562.780	2	3781.390	60.095*
				W	18688.220	297	62.923	
Post-test Mean	106.52	109.04	116.01	B	4833.047	2	2416.523	67.177*
				W	10683.790	297	35.972	
Adjusted Post-Test Mean	107.69	109.75	114.14	B	6160.976	3	2053.659	64.973
				W	9355.861	296	31.608	

* Significant, $F(2, 297) = 3.04$ and $F(2, 296) = 3.04$

Table I shows the pre-test means of Experimental Group I, Experimental Group II and Control Group was 104.72, 106.45 and 116.13 respectively. Since the obtained 'F' ratio 60.095 was greater than the table value 3.04, there was significant difference

among the pre-test means at 0.05 level of confidence with 2 and 297 degrees of freedom.

The post-test means of Experimental Group I, Experimental Group II and Control Group were 106.52, 109.04 and 1116.01 respectively. The table value required for significance at 0.05 level was 3.04. Since the obtained 'F' ratio 67.177 was greater than the table value of 3.04 it indicates that there was significant difference among the post-test means at 0.05 level of confidence with 2 and 297 degrees of freedom.

The adjusted post-test means of Experimental Group I, Experimental Group II and Control Group were 107.69, 109.75 and 114.14 respectively. The table value required for significance at 0.05 level was 3.04. Since the obtained 'F' ratio 64.973 was greater than the table value of 3.04 which indicates that there was significant difference among the adjusted post-test means at 0.05 level of confidence with 3 and 296 degrees of freedom. Hence the Scheffe's post-hoc test was applied to find out the significance of ordered adjusted final mean differences among the groups.

TABLE I (A)
SCHEFFE'S POST HOC TEST MEAN DIFFERENCE OF EXPERIMENTAL GROUP I,
EXPERIMENTAL GROUP II AND CONTROL GROUP ON LOW
BLOOD PRESSURE
(Scores in mm of Hg)

Experimental Group I	Experimental Group II	Control Group	Mean Difference	Confidence Interval
107.69	109.75	-	2.06*	1.27
107.69	-	114.14	6.45*	
-	109.75	114.14	4.39*	

*Significant at 0.05 Level

Table I (A) shows the Scheffe's Post Hoc test results. The ordered adjusted final mean difference for Low Blood Pressure of Experimental Group I, II and Control Group were tested for significance at 0.05 Level of Confidence against Confidence Interval Value. The mean differences between Experimental Group I and Experimental Group II, Experimental Group I and Control Group and Experimental Group II and Control Group was 2.06, 6.45 and 4.39 respectively. The obtained Mean Differences of these groups was greater than the Confidence Interval Value 1.27 which shows that the comparisons were significant.

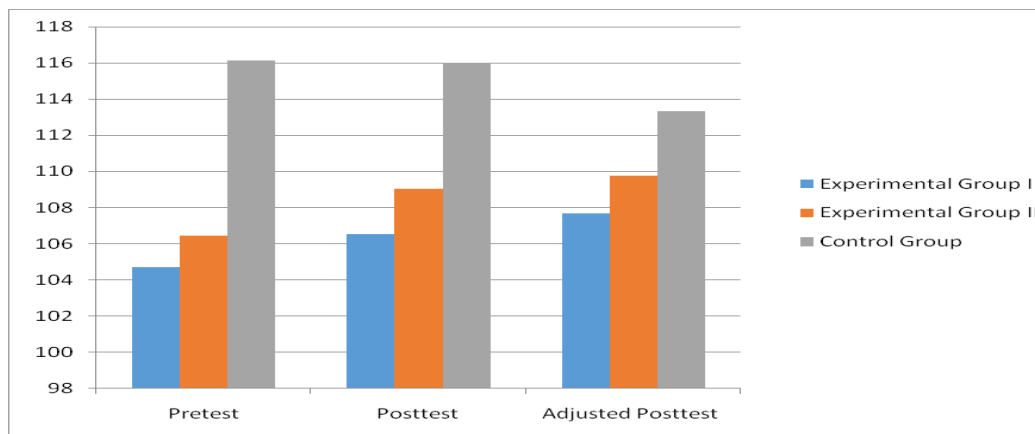


Figure I -THE PRE-TEST, POST-TEST AND ADJUSTED POST TEST MEAN VALUES OF EXPERIMENTAL GROUPS AND CONTROL GROUP ON LOW BLOOD PRESSURE

1.4 DISCUSSION

After analyzing the results, the researcher has found that there were significant differences among the experimental and control groups and there was significant improvement in between the experimental groups on Low Blood Pressure. The Chair Yoga Practices Group pre test and post test mean value observations was 104.72 and 106.52. The Physical Exercises Practices Group pre test and post test mean value observations was 106.45 and 109.04.

The results of the present study clearly indicate that Low Blood Pressure level improved significantly over the eight weeks training period for Chair Yoga Practice and Physical Exercise. However, the differences among the two experimental groups were significant. The Chair Yoga Practices Group produces greater improvement than the Physical Exercises Group and Control Group. However, the least improvement was noticed on Physical Exercises Group. The control group did not produce any significant improvement.

1.5 CONCLUSION

It was concluded from the findings of the study that Low Blood Pressure level improved significantly over the eight weeks training period for Chair Yoga Practice and Physical Exercise. However, the differences among the two experimental groups were significant. The Chair Yoga Practices Group produces greater improvement than the Physical Exercises Group and Control Group. However, the least improvement was noticed on Physical Exercises Group. The control group did not produce any significant improvement.

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A STUDY ON PHYSIOLOGICAL COMPONENTS REQUIRED BY BHANGRA DANCERS

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ABSTRACT

Bhangra is an excellent alternative exercise for improving health related physical fitness elements. Bhangra performance requires support from enhanced physiological requirements necessary for dancers including cardiovascular fitness, muscle flexibility, muscular strength/power. A reduction in muscular strength associate with injury risk and many dancers succumb to problems such as the overtraining syndrome. Improvement in lower body muscular strength appears to have positive effects on aspects of dance performance and injury prevention. The qualities and benefits offered by Bhangra depend on the Bhangra forms concerned but as a general rule, it improves physical health by developing strength, suppleness, coordination and balance in varying amounts. This literature study showed differences in fitness levels exist between in different Bhangra forms but also in levels of Bhangra performer. As in most sports, dancing is a demanding exercise form for all styles dancers, taxing both aerobic and anaerobic processes and develops high levels of muscle tension. Joint mobility and body composition are also important parts of dance fitness. Bhangra training consists of technique and style training with an aim to increase the skill level of dancers. Furthermore, it needs more investigation whether improved physical fitness has positive effect on dance performance.

Keywords: Bhangra, aerobic/anaerobic fitness, strength, flexibility, body composition

1. INTRODUCTION

Bhangra is a lively form of folk music and dance that originates from Punjab. People traditionally performed Bhangra when celebrating the harvest. During Bhangra, people sing Punjabi Boliyaan lyrics, at least one person plays the the dhol drum, and other people may play the flute, dholak drum, or other musical instruments. While Bhangra began as a part of harvest festival celebrations, it eventually became a part of such diverse occasions as weddings and New Year celebrations. Moreover, during the last thirty years, Bhangra has enjoyed a surge in popularity worldwide, both in traditional form and as a fusion with genres such as hip-hop, house, and reggae. As Bhangra continues to move into mainstream culture, an understanding of its history and tradition helps to appreciate it. Many people believe that Bhangra originated in the 1400s, however, it may be even older. Primarily men performed Bhangra, while the ladies performed their own fierce, yet elegant, dance called Giddha. The men wore the turbin, lungi (long cloth wrapped around the waist), and kurta (traditional Indian shirt), while the women, when performing Giddha, wore the salwar kameez (a long colorful shirt accompanied with a baggy style bottom piece) accompanied by their bright colored duppattas (cloth wrapped around the neck).

Bhangra is an excellent way to improve physical fitness, a set of attributes that are either health or skill-related and develop social skills, thereby improving mental health, and is something that can be taken up early in life and still provide plenty of entertainment well after retirement. The best kinds of dancing to encourage people to take up are those which develop cooperation, either with a partner or within a set. Although each type has its own qualities and makes its own demands, there should be something suitable for almost everyone regardless of location. Dance is a healthy activity also an excellent alternative exercise form for children that would participate with pleasure improving health related physical fitness elements, cardio respiratory endurance, muscular endurance, muscular strength, body composition, and flexibility. and contributes to children's cognitive and emotional development well as to the development of kinetic skills.

It is suggested that in older persons dancing has physical, psychological and social benefits, and should be promoted as a form of leisure activity (Hui, Tsankeung, Chui, & Woo, 2009). Similar it has been reported that folkloric dance (specific to countries), Turkish or Greek dances based exercise program produce both physical and mental benefits for elderly individuals (Eyigor, Karaplot, Durmaz, Ibisoglu & Cakir, 2009; Mavrovouniotis, Argiriadou, & Papaioannou, 2010). Because of quantify and score specific qualitative aspects of dance performance such as overall proficiency, full body involvement, articulation and skills (Krasnow, Chatfield, Barr, Jensen, & Dufek, 1997), has been suggested that dance performance requires support from enhanced physiological capabilities including flexibility, muscular strength, power and endurance (Chatfield, Byrnes, Lally, & Rowe, 1990). As in most sports, dance fitness depends on the individuals' ability to work under aerobic (Cohen, Segal, Witriol, & McArdle, 1982; Clarkson, Freedson, Keller, Carney, & Skrinar, 1985) and anaerobic conditions, and on their capacity to develop high levels of muscle tension, i.e. muscle strength (Fitt, 1982). Joint mobility/muscle flexibility and body composition (Claessens, Beunen, Nuyts, Lefevre, & Wellens, 1987; Hergenroeder, Brown, & Klish, 1993) are also important parts of dance fitness (Angioi, 2010).

An improvement in lower body muscular strength and power appears to have positive effects on aspects of dance performance (Brown, Wells, Schade, Smith, & Fehling,

2007; Koutedakis et al., 2007). The physiological requirements necessary for dancers is a large reserve of power, required for explosive jumps and high elevation or during the act of a lift, and muscular endurance which occurs when a relatively high power output is maintained (ex. in a dance sequence during training) (Koutedakis & Jamurtas, 2004).

According to Wyon and Redding (2005), dance is an intermittent type of exercise, seen to be equal to walking as physical activities in terms of calorific output (Ribeiro -Nunes, Irene-Monte, Ferreira-Emygdio, & Knackfuss, 2007), and similar to soccer or tennis where explosive bursts of action are followed by moments requiring precision and skill, dancers would further benefit from a good aerobic foundation (Allen & Wyon, 2008). However, although dance involves several hours of daily practice, published data reveal that female dancers have less aerobic fitness levels compared to athletes from other sports, such as gymnasts (Baldari & Guidetti, 2001), but their results are based on data deriving mainly from ballet (Kirkendall & Calabrese 1983; Koutedakis & Jamurtas, 2004). Since performing and recreational dancers in several dance forms demonstrate differences in fitness, as well as non- professional and professional athletes have also significant differences in fitness levels, which in turn, have significant implication in performance (Angioi, 2010).

As in other sports, Bhangra performance depends on a large number of technical, medical, psychological, nutritional, economic, environmental and physiological elements. For these reason, researchers have concentrated on selected fitness attributes of dancers including: aerobic and anaerobic capacities; muscular strength, anthropometric attributes, physiological demands of Bhangra. The qualities and benefits offered by Bhangra depend on the form concerned but as a general rule, it improves physical health by developing strength, suppleness, coordination and balance in varying amounts. Furthermore, it remains unclear whether improved physical fitness affects aspects of Bhangra performance in student and professional dancers. This literature study examines the differences in fitness levels exist between in different Bhangra forms but also in levels of dancers.

2. METHODS

Considering regarding the effects of Bhangra practice it is relevant to gain more insight in health related physical fitness elements benefits of dance by reviewing the existing research on this topic. Literature data were primarily collected through computer and manual searches of primary sources (e.g., journal articles, theses and dissertations). The databases (e.g., Sport Discus, Google scholar, PubMed) were searched to identify publications in English regarding fitness components of dancers using keywords such as: physical, fitness, exercise, strength, aerobic, anaerobic, performance, training, body composition, fat-free mass, in combination with “dance” and “dancers”. The results of this literature study will be described in the present review, and the possible effects of Bhangra practice on participants’ physical fitness will be discussed. Finally, a conclusion is presented and recommendations are provided for further investigation.

2.1 Bhangra and Aerobic Fitness. The aerobic (cardio respiratory) system is the most economical and long-lasting but the least powerful. Aerobic fitness declares the ability for muscular work under aerobic conditions and it includes all aspects of uptake, transport and consumption of oxygen to liberate energy from muscle fuels. A number of authors have investigated aerobic fitness levels of dancers in different levels and different dance forms. Even if the most taxed metabolism of dance exercise was the aerobic source, its percentage of utilization was related to the fitness level of the performer. A higher percentage allows a

better performance, since the anaerobic lactic metabolism is less utilized (Guidetti, Emerenziani, Gallotta, Da Silva, & Baldari, 2008).

Among different levels of dance students was found no significant differences in VO₂ max existed, beginners (40.4±4.9 ml.kg⁻¹.min⁻¹), intermediate (42.5±4.3 ml.kg⁻¹.min⁻¹), professional (43.6±2.3 ml.kg⁻¹.min⁻¹) but all dance students demonstrate significant differences in VO₂ max compared with non-dancers (36.4±4.8 ml.kg⁻¹.min⁻¹), (Chatfield et al., 1990). Between professional and dance students in ballet and contemporary dance they did not also found significant differences in VO₂ max, (Wyon et al., 2002). Similar results found between in performing (45.6±4.8 ml.kg⁻¹.min⁻¹) and recreational adolescent dancers (46.3±6.0 ml.kg⁻¹.min⁻¹), (Padfield et al, 1993).

As alternative exercise forms, dancing and walking were found to be similar in cardio respiratory fitness benefits and they had significant correlation between calorie output levels (Ribeiro-Nunes et al., 2007). Consequently in another study, senior citizens followed a 12 weeks dance program had significantly improved in resting heart rate, and 6-min timed walking test (Hui et al., 2009). Furthermore in his study Wanke, 2001 assessed the effect of an integrated endurance training program for ballet dancers (n=16) across a ballet season and found positive results.

2.2 Bhangra and Anaerobic Fitness. However, as mentioned previously, dance is intermittent and will demand an ever-changing combination of both systems for its energy. Dancers are rarely pushed to their maximum aerobic capacity during class; it can be sometimes assumed that more emphasis should be placed on the anaerobic system. Anaerobic fitness or local muscular endurance operates in the absence of oxygen and involves two high energy sources: phosphocreatine (PCr), muscular action lasts for just a few seconds and glycolysis (the breakdown of glucose), high power outputs must be sustained for about 30–60 seconds. Unlike aerobic fitness, its characteristic is to provide high levels of power but over short time duration, thus anaerobic fitness is necessary for fast and explosive dance movements (Wilmore & Costill, 1999; Angioi, 2010). Individual anaerobic threshold (IAT) was 55 and 60% of VO₂ max for high and low technical level dancers, respectively (Guidetti et al., 2008).

The highest values for (BL) after the competition of elite dancesport dancers for male and female dancers have been found (Klonova et al., 2011) around (BL: 9.6 and 8.9 mM.L⁻¹ respectively). Between contemporary and ballet dance students they didn't found any difference in post exercise (BL) levels. Chmelar et al. (1988) in their study reported that in post exercise (BL) levels contemporary professional dancers exhibited higher values than their ballet professional dancers (BL: 9.7±1.4 & 6.0±1.5 mM.L⁻¹, respectively). In Ribeiro da Mota et al. (2011) study, the absolute values of BL reported here immediately after a specific street dance (SD) competitive choreography was (8.2 ± 2.4 pre and 10 ± 2 mM.L⁻¹ post training respectively).

Male and female dancesport dancers present relatively high values for aerobic and anaerobic capacity (Liiv et al., 2012) compared to the other dance styles like ballet (Cohen, Segal, Witriol, & MacArdle, 1982; Schantz & Astrand, 1984; Oreb et al., 2006; Wyon et al., 2007), modern dance (Chmelar, Schultz, & Ruhling, 1988), flamenco (Pedersen, Wilmerding, Kuhn, & Encinias-Sandoval, 2001) and folk dance (Oreb et al., 2006). Furthermore, they appear to be performing at relatively high energy-demanding (both aerobic and anaerobic) phases during their competitive dance routines (Bria et al., 2011).

2.3 Bhangra and Muscular Strength: Strength is the ability to exert maximal force an increasing importance has been given of athletes to the ability to exert force at specified speeds for performance purposes. Dancers often support each other's body weight, perform flips, and do many forms of cartwheels and gymnastic-like movements. Dance especially ballet and contemporary also demands sufficient muscle strength. Dancers utilize their muscular strength to perform movements such as lifts and floorwork-using gravity to pull them down to the floor (Phillips 1999; Koutedakis, Stavropoulos-Kalinoglou, & Metsios, 2005). Dance training contributes to strength development in children (Walker, Nordin-Bates, & Redding, 2011). After a 12-month period, significant increases in hip muscle strength were observed in all participants (53 young female novice dancers and controls), but the dancers' strength increases were greater than the controls' in three out of the five muscle groups tested (Bennell et al. 2001).

Between different levels of dance students (beginners, intermediate, professional), they didn't found significant differences in muscular strength and power of knee and ankle and also has been found to be not significantly different when compared to sedentary individuals (Chatfield et al., 1990). No significant differences were found in the quadriceps and hamstring peak torque between professional ballet dancers and professional contemporary dancers and similar results were observed between ballet and contemporary dance students (Chmelar et al., 1988). Also, in comparison to ballet, contemporary and folk dancers reported higher scores in muscular endurance (Thomas, 2003).

In professional dancers, knee extensor and flexor low muscle strength levels have been associated with increased injury severity and the injury recovery process may take longer in dancers with reduced muscular strength (Weiss & Zlatkowski, 1996). It has been suggested that the effect of supplementary strength training on dancers was a significant increase in muscular strength, resulted in significant benefits for enhancing jump performance (Brown et al., 2007), overall performance competence and technique (Koutedakis et al., 2007). However, studies of dancers using structured strength training programs in addition to their traditional dance training technique classes report strength gains and improved performance (Vetter, & Dorgo, 2009).

2.4 Muscle Flexibility and Bhangra. A successful career in dance demands that the dancer be both flexible and strong. Dancers were asked to perform a sideways leg extension the combined hip action of flexion, abduction and external rotation. The angular flexibility was measured through the goniometry (flexing, abduction and extern rotation of the hip), which registers the amplitude of movement (ADM) in degrees (°), and the linear flexibility by the Box of Sitting and Reaching (the Back and leg flexibility test) of Wells and Dillon (1952), which values the flexibility of the muscular subsequent chain, in centimeters (cm). This protocol is suggested for both ballet and contemporary dancers, and it has been recommended to be used for the assessment of dance specific flexibility-related skills (Grossman & Wilmerding 2000).

The essential movements (important aspect of flexibility) in classical ballet are plié ("bent", a smooth and continuous bending of the knees), and external hip rotation (turnout). These movements are the foundation from which many other movements, such as leaps and jumps, occur. As for the rates of flexibility, the group of classical ballet presented superior values for all the evaluated movements; however significant difference was presented only for the ADM of abduction of the inferior members, making the practicing of classical ballet more flexible than those of contemporary dance (Silva, & Bonorino, 2008).

The flexibility of boy dancers seems to be better than the average in age 9 to 16 years. A high degree of flexibility was observed also in ballet girls studied by (Claessens, Beunen, Nuyts, Lefevre, & Wellens, 1987). It has been reported that in pre-professional female dancers mean value on turnout was 136°, mean unilateral passive hip external rotation was 49.4°, and mean femoral torsion was 18.4° (Hamilton et al., 2006). Very similar to the values of 133° and 136° reported by Negus, Hopper, and Briffa, (2005) and Watkins, Woodhull-McNeal, Clarkson and Ebbeling, (1989), respectively.

3. DISCUSSION

Today, to meet the choreographic demands of many amateur or professional modern dance companies and college dance major programs, training must prepare dancers to meet the physical requirements necessary to accomplish artistic intent. Few sports can compare with dance in terms of the time and technical demands placed on the mind and body. Further, the dancer must seek optimal responses from the body to meet aesthetic demands (Berardi, 1994). According to Solomon, it should be “the main business of dance technique training to eliminate the tendencies which lead to inefficient and deleterious movement and get the dancers working in a more effective manner” (Solomon, 1987).

The dance training methods are essentials for maintaining and developing the dancers' technique and coordination to perform an artistic form of movement. Dance technique training, by itself, does not always provide a sufficient conditioning program for the prevention of injuries or skeletal imbalances often associated with the performance and rehearsal (Ahearn, 2006), and since dance body movement expression is closely linked with a high physical performance (Schantz & Astrand, 1984), dancers need supplemental cardiovascular training to improve their fitness level, (Krasnow & Chatfield, 1996; Wyon, 2004; Guidetti, Gallotta, Emerenziani, & Baldari, 2007) especially in low technical level dancers (Guidetti et al, 2008).

This literature study showed that differences in aerobic fitness levels exist between not only in different dance forms but also in levels of dancers (Chmelar et al., 1988; Chatfield et al., 1990) and dancers demonstrate values of VO₂ max between 38.1 ± 1.9 (Guidetti et al., 2008) to 51.2±11.4 ml kg⁻¹ min⁻¹ (Dahlstrom et al., 1996), lower values than do other athletes of comparable age but significantly greater than sedentary individuals.

Dancers in different dance forms demonstrate differences in fitness levels which in turn, have significant implication in performance (Angioi, 2010). In some cases, modern dance training improved aerobic and anaerobic capacity, and in other studies, there were no significant differences (Krasnow & Kabbani, 1999). It would be fair to suggest, therefore, that contemporary dancers need to be both aerobically and anaerobically fit in order to be prepared for the many different demands of the genre (Redding et al., 2009). Supplementary exercise training significantly increased aspects of dance performance, with concomitant increases in selected fitness-related parameters, in dances (Koutedakis et al., 2007).

As concerning the anaerobic mean power no significant differences were detected in between adolescent performing and recreational dancers and compared to non-dancers (Padfield et al., 1993; Chmelar et al., 1988). Between different levels of dancers (beginners, intermediate, professional), they didn't demonstrated significant differences in anaerobic capacity mean values (Chatfield et al., 1990). Guidetti et al. (2008) reported that individual anaerobic threshold (IAT) was 55% and 60% of VO₂ max for high and low technical level dancers, respectively and suggested that dance intensity should not be defined only as a

percentage of VO₂ max but it is preferable to define the individualized intensity in relation to the IAT.

Joint mobility/muscle flexibility and body composition are also important parts of dance fitness. The results indicate that dancers are in general moderately lean, and have a high degree of flexibility (Angioi, 2010). Dancers' joint range of motion ROM does not improve or diminish with age but rather is preserved. The ability of dancers to retain joint flexibility with age is probably because of their exposure to extensive exercise, as ROM in non-dancers tends to deteriorate with age (Steinberg et al. 2006).

Stalec, Stalec, Katicc, Podvorac, & Katovic, (2007) in their study with female high school students aged 16–18 years (fit for attending physical education classes), following an experimental procedure, physical education including programmed components of dance structures and aerobics, was used with the experimental group throughout the academic year (66 periods). During the same time, control group attended standard physical education curriculum for high school students, also 66 periods in total. Of these, 6 periods were used for initial, transitory and final measurements (2 periods each). Study results indicated the program of physical education including dance, aerobics and rhythmic gymnastics influenced the relevant motor abilities of coordination (agility and coordination in rhythm), aerobic endurance, strength (repetitive and explosive) and flexibility as well as the morphological status in terms of excessive adipose tissue reduction.

4. CONCLUSION

In conclusion dance is an excellent alternative exercise form improving health related physical fitness elements. The development of the dancer's physical fitness seems to be more a byproduct of skill acquisition than focused fitness training. As in most sports, dance fitness depends on the individuals' ability to work under aerobic and anaerobic conditions, and develop high levels of muscle tension. Dance performance requires support from enhanced physiological requirements necessary for dancers including: joint mobility, muscular strength, cardiovascular fitness, body composition and suggested that supplementary aerobic and or strength exercise training may have significant benefits on performance. In fact, several studies had examined the physiological responses to dance modalities such as modern dance, ballet, and aerobic dance. The investigation into physiological and fitness components of dance and dancers has mainly concentrated on classical ballet dance and modern dance. Relatively little has been published in relation to other forms. More multidisciplinary scientific research is needed on the different forms of dance. Furthermore, it needs more investigation whether improved physical fitness has positive effect on dance performance.

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