

Effects of Physical Activity on Anthropometric Measurement of 20-25 Years of Age in Gujarati and Punjabi Communities in Mumbai City

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ABSTRACT

The global population today is 7.2 billions, of which 17.5% resides in India. 94% of population residing are Hindus and rest 6% are Muslims, Christians, Jews and Buddhist. Majority of Hindu Population i.e. Marathi, Gujarati, Punjabi, Kutchi etc resides in Mumbai. Mumbai being a diverse capital of religions and traditions; has varied traditional practices but identical lifestyle habits resulting in similar body composition. About 200 individuals with mean age 32 ± 9.1 , were studied i.e. 100 from each community (50 males and 50 females) respectively. A purposive sampling technique was used to collect the samples. A pre-tested questionnaire (Annexure 1) was used along with body composition analyzer (Tanita BC541 – Annexure 2). Faulty eating practices, lack of physical activities and stressful life is leading today's young population towards lifestyle disorder i.e. obesity ($p=0.087$) due to high body fat percentage.

Summary and Conclusion: *The results revealed that the Punjabi subjects were found to be less active than the Gujarati subjects. The frequency of physical activity was seen to be significantly correlated ($p=0.087$) to the fat mass in Punjabi females along with the muscle mass and bone mass in females from both the communities.*

Keywords: *Punjabi, Gujarati, Physical activity, Anthropometric measurements, fat mass, bone density*

INTRODUCTION

It's widely said that, the age groups of people who are most prone to health issues are from either the age group of young children i.e. 3-13 years of age or the geriatric population i.e. those above 60 years of age. The most ignored age group while assessing the health issues is the youth i.e. young adults falling in the age group of 20-25 years. Currently, due to high stress levels and distorted eating patterns and lack of physical activities in the youth, there are many health hazards associated with the kind of lifestyle the youth of a developing country and urban cities follow. Despite of different eating patterns and lifestyle practices the body composition is quite similar in Gujarati and Punjabi communities.

The objective of present study was to see the effects of physical activities on anthropometric measurements in Gujarati and Punjabi community.

MATERIALS AND METHODS

The data for research was collected from educational complexes and local food joints in Mahalaxmi, Parel, Matunga, Chinchpokhli, Bandra, Lower parel, Sion, Nerul, Goregoan areas. A total of 50 males and 50 females from both the communities belonging to high socioeconomic group, aged between 20-25 years either working or studying i.e. Bachelor's / post graduates were selected for data collection. A purposive sampling technique was used.

A questionnaire comprising of questions related to background information, physical activity and anthropometric measurements was used to collect the data. Young adults with chronic illness and Gujarati non-vegetarians were excluded from the study.

Assessment of Physical activity was done by intensity, frequency and type of activity conducted by the subjects. Anthropometric measurements included in the study were Height, weight, Body mass index, Mid upper arm circumference and body composition i.e. fat mass, muscle mass, bone density, total body water, basal metabolic rate and visceral fat.

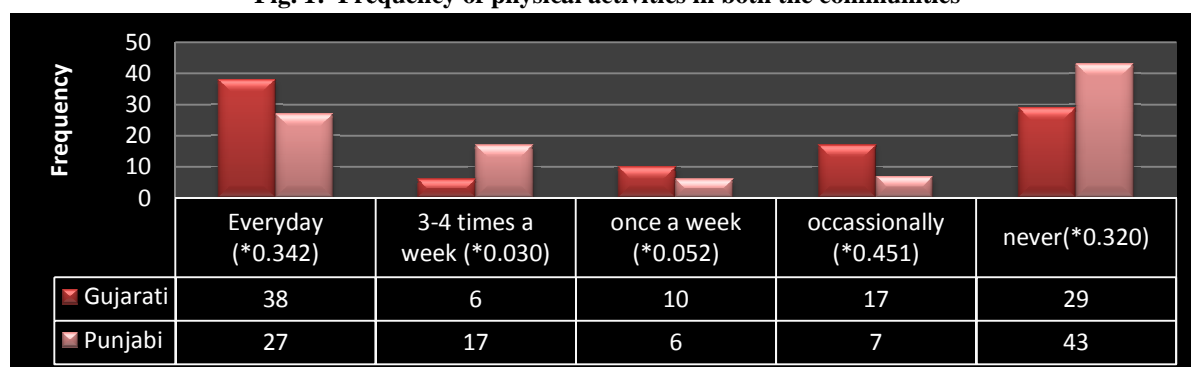
RESULTS AND DISCUSSIONS

The aim of the present study was to evaluate the physical activity and anthropometric measurements in Gujarati and Punjabi communities in Mumbai. There were a total of 200 subjects taken for the study with 100 from both the Gujarati and Punjabi communities; out of which there were 50 males and 50 females respectively. The entire subjects were either working or studying or doing both simultaneously. Subjects belonged to upper medium socio-economic group.

The subjects were taken with mean age of 23 years in Gujarati and Punjabi communities.

When the subjects were assessed for the frequency of physical activities, it was observed that, more number of Gujarati subjects' were involved in physical activities on a regular basis than Punjabis. Punjabi subjects' were not found to be involved in any kind of physical activity except the daily chores as reported in Fig no 1.

Fig. 1: Frequency of physical activities in both the communities



P values entered as *value within the graph.

Along with frequency, the intensity of activity was also assessed thus it was studied that, the Punjabi subjects were found to be less active than the Gujarati subjects. The Gujarati subjects were thus less prone to health issues related to the body compositions than the Punjabi subjects.

The subjects were asked about the type of physical activity that they generally undertake on a daily basis such as yoga, zumba, dance, gym, jogging and kick boxing.

Gujarati subjects were found to be involved in all the types of physical activities considered in the present study whereas, none of the Punjabi subjects were found being involved in Zumba and very less numbers were found in the activities like dancing and jogging. Zumba and dancing were seen to be considered as the new method of increasing physical activity in the college students for benefiting them with decreased risk of cardiovascular diseases and obesity. The introduction of such activities was seen to improve the body composition parameters of these subjects (Garn *et al.*, 2014). Thus, the risk of such abnormalities in body composition parameters were considered to be more prevalent in the Punjabi subjects than the Gujarati subjects.

The negligible involvement of Punjabi subjects in the physical activities makes them susceptible to health issues like obesity and non- communicable diseases. In the category of low intensity physical activities also, similar results were observed. The Punjabi's were found to be high in numbers than the Gujarati's within this range of intensity as well.

On the contrary, the Gujarati population was found to be in high numbers in the category of medium and high intensity physical activities. As seen in the former results, Gujarati subjects were found to be involved in activities like zumba, dance and gym which do involve medium-high intensity physical activity.

In a study done by Heydari, Freund & Boutcher (2012), the researches stated that the high intensity physical activities on a daily basis helped young adults from age group of 20-25 years to lose weight and overcome problems of obesity at a better pace. Thus, the Gujarati subjects due to their involvement in high intensity exercises would be able to overcome chances of obesity and better biochemical parameters in the future.

The intensity and frequency of physical activity was correlated with the anthropometric measurements in both the communities. The table no: 1 denotes the correlation results across both the communities and divided as per genders. The intensity of physical activity was seen to be significantly correlated with the fat mass in all the groups except the Gujarati female participants. It was seen to be correlated with the bone mass in Punjabi males and MUAC in Punjabi females. It was also seen to be correlated with the Punjabi males.

The frequency of physical activity was seen to be significantly correlated with the fat mass in Punjabi females and muscle mass and bone mass in females from both the communities. It was also seen to be significantly correlated with the BMR in females from the Gujarati as well as the Punjabi females.

Table 1: Correlation between intensity and frequency of physical activity with anthropometric measurements

| Characteristics | Intensity of Physical Activity | | | | Frequency of physical activity | | | |
|--------------------|--------------------------------|--------|--------------|--------------|--------------------------------|--------------|---------|--------------|
| | Gujarati | | Punjabi | | Gujarati | | Punjabi | |
| | Male | Female | Male | Female | Male | Female | Male | Female |
| Fat Mass | 0.812 | 0.205 | 0.860 | 0.873 | 0.426 | 0.391 | 0.314 | 0.771 |
| Muscle mass | 0.385 | 0.297 | 0.276 | 0.938 | 0.425 | 0.729 | 0.342 | 0.181 |
| Bone Mass | 0.349 | 0.237 | 0.900 | 0.260 | 0.382 | 0.706 | 0.236 | 0.835 |
| MUAC | 0.193 | 0.138 | 0.280 | 0.655 | -0.256 | 0.482 | 0.210 | 0.180 |
| BMR | 0.297 | 0.258 | 0.609 | 0.271 | -0.384 | 0.691 | 0.273 | 0.604 |

*Values were significant at $p < 0.05$

As the intensity of physical activity increased, there were significant changes in anthropometric measurements, e.g. Fat mass decreased in both the communities except Gujarati females, Muscle mass was seen to be improved in Punjabi females, Bone mass in Punjabi Males increased, MUAC was decreased in Punjabi females and BMR was seen to be improving in Punjabi Males.

Similarly, the frequency of physical activity correlated significantly on anthropometric measurements, e.g. Fat mass decreased in Punjabi females. Muscle mass improved in Gujarati females, Bone mass and BMR were seen to be improving in Gujarati and Punjabi females.

CONCLUSION

The Gujarati subjects were found to be more involved in the physical activity and considered exercising and maintaining an activity routine as a very important part of daily living. On the contrary, the Punjabi population was found to be less involved in the activities and majority of them were found to be absolutely devoid of any kind of extra physical strain on their body. Body composition was seen to be improving when physical activities increased. Fat mass in both the communities when physical activities increased ($p= 0.86$). Less physical activity and more of sedentary life was seen to be associated with many metabolic disorders and degenerative diseases as mentioned in the cited references. Thus, from the point of physical activities the Punjabi population was considered to be at a higher risk to such health conditions than the Gujarati population.

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