

# A COMPARATIVE STUDY OF BODY COMPOSITION AND RELATIVE HEALTH STATUS AMONG RESIDENT AND NON-RESIDENT STUDENTS IN DIFFERENT SCHOOLS OF J&K

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## ABSTRACT

*The purposes of the study were to find out body composition and relative health status of the resident and non-resident students in different schools of J&K and their comparison with each other. A total of 100 resident students in different schools of J&K and 10 non-resident students in different schools of J&K in between the age of 15 to 19 years were selected randomly from different resident and non-resident schools in the jammu region of J&K and comparison was done between these two groups. Height, Body weight, body fat percentage and body mass index were considered as variables for measurement of health and nutritional status in the investigation. All the variables were measured with the standard tools and equations. Mean and Standard deviation were calculated as descriptive statistics and to find out the inter group difference t-test was conducted. Result shows those resident students groups were superior in weight, PBF and BMI than non-resident students. Result also revealed that resident students group was in over weight zone in respect of BMI but non-resident students group was in the normal zone in this category. All the mean difference between these two groups was found statistically significant in this study.*

*Key Words: Residential, Non-Residential, Body Composition and Nutritional Status.*

## INTRODUCTION:

Health is generally considered as a position of being good or feeling safe. 'Healthy people makes nation', this statement seems to be valuable only when we really follow laws of health. It assists us, motivates us and directs us to implements those health principles reasonable in our life style.

Personal health is a dynamic state of human being. It is influenced by four multiple factors, such as – heredity, environment, personal behaviour and access to professional health care practitioners and other health services. Good health is very much important for normal living in daily life. Residential students mainly adopt the hostel mess and non residents student enjoys the home meals. Present study was designed to find out the health and nutritional status of housewives and working women of North Bengal region of India and their comparison. Purpose

of the study was to know the difference of health and nutritional status of these two groups of students. Findings will be helpful to plan and prepare the health chart, diet plan and fitness schedule for the resident and non-resident students in different schools of J&K.

#### MATERIALS AND METHODS:

A total of 100 resident students and 100 non-resident students in between the age of 15 to 19 years were selected randomly from different private schools in the Jammu region of J&K state.

Health and nutritional status was assessed by calculating BMI and body fat percentage (PBF) of the subject. For this purpose height and weight were measured by stadiometer and weigh machine. BMI was calculated through the anthropometric equation ( $BMI = Wt (kg) / Ht^2 (m)$ ). Body fat percentage was also measured by standard anthropometric equation (McArdle, 1996) and all the anthropometric parameters used in this equation were measured using steel tape.

Central tendency and standard deviation were used as descriptive statistics for this study. Significance of the difference between two means was computed by using t-test. Level of significance was considered only 0.05 level for this study. All statistical calculations were done using standard statistical software.

#### RESULTS AND FINDINGS:

Mean and SD of weight, BMI and body fat percentage were presented in Table-1 and result of t-test have presented in table-2. Table-1 shows that mean value of weight, PBF and BMI for resident students were higher than non-resident students group. Table-2 indicated that these mean differences (t-value) were significant statistically ( $< 0.05$ ) for weight, body fat percentage (PBF) and body mass index (BMI) between these resident students and non-resident students.

Table-1: Mean value and SD of different health parameters for resident students and non-resident students

Category of Subjects	Weight (kg)		B.M.I. (kg/m <sup>2</sup> )		Body Fat (%)	
	Mean	S.D	Mean	S.D	Mean	S.D
Resident	57.17	±5.14	23.94	±2.77	28.67	±3.21
Non-Resident	52.55	±4.75	17.41	±1.73	24.65	±2.97

Table-2: t-values for different variables for HW and WW

Variables	t-value	Remarks
Weight	17.23	Significant at 0.05 level
B.M.I.	14.55	Significant at 0.05 level
Body Fat %	19.65	Significant at 0.05 level

## DISCUSSION OF FINDINGS:

In the present study health and nutritional status was assessed with the weight, B.M.I and percentage of body fat (Figure-1). Figure-1 shows that mean values were higher for resident students group than the non-resident students group for all variables. McArdle et al. (1991) mentioned that after age 30 to 40 years there is a decrease in lean body weight but fat weight increases. Mean weight of resident students and non-resident students group found in this study were similar with the findings of several studies. Bandyopadhyay (2007) found mean body weight around 55.75kg in the Bengali sedentary female at the age of 35-44 years. Koley et al. (2009) observed the body weight 58.94 Kg of sedentary female and 43.44 Kg for the labourer

women in Punjab State, India. Saha Roy (2010) reported around 56.63 Kg weight in the middle-aged (40 to 55 years) women in West Bengal. Upadhyay et al. (2011) assessed 48.76 Kg mean body weight in the 36-45 years old of rural women. Higher mean value for weight in resident students group than the non-resident students group was might be due to the lower expenditure of calories by the regular hostel routine performed than the residential students.

B.M.I. is a fitness determinant which is valid, convenient and easy to use in the detection of unfavorable health indices (Cheine et al., 1989). According to WHO classification (WHO, 2006) BMI value of adult person within the range of 18.50 to 24.99 is normal and healthy (Table-3). Tahara et al. (2002) found that B. M.I. score of (18-59) years Japanese adults female was 21.4 kg/m<sup>2</sup>. Misra et al. (2005) reported that average B.M.I. score was 26.1 ( $\pm 3.7$ ) for 29-59 years old sedentary women. In this study, the mean B.M.I. value of resident students was higher than the normal category and it was in over weight zone where as the BMI value of non- resident students group was in normal and healthy zone. Result shows that resident students had slightly higher health risk than the non- resident student groups.

Table-3: Health status in respect of BMI

Health status	BMI Value
Grade-3 Obesity (Health Risk very much increased)	Over 40.00
Grade-2 Obesity (Health Risk much increased)	35.00 to 39.99
Grade-1 Obesity (Health Risk increased)	30.00 to 34.99
Over Weight Zone (Health Risk slightly increased)	25.00 to 29.99
Normal Weight Zone (Health Risk Low)	18.50 to 24.99
Under Weight Zone	16.10 to 18.49

(Health Risk slightly increased)	
Severely Under Weight zone (Health Risk very much increased)	Below 16.00

The percentage of body fat for resident students group was higher than the non- resident students groups in this study. Blair et al. (1981) reported that less amount of physical activity deposit greater amount of body fat. Finding of the study for body fat percentage was in close proximity with the other leading researches. Wimberley et al. (2001) reported that B.F. % of sedentary and active middle- aged (30-50s) women were  $28.8 \pm 6.8$  and  $18.9 \pm 4.9$  respectively. Stan forth et al. (2004) observed that the B.F. % of black and white adult (17 to 65 years) women is 36.1 and 29.9 respectively. Joshi et al. (2008) found the B.F. % was  $31.99 \pm 3.92$  in young students with in the age of 18 to 21 years.

#### CONCLUSION:

1. Resident students had higher body weight than the non- resident students in different schools of J&K.
2. Non- resident students had superior health status than resident students in respect of BMI and Body fat Percentage.

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