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**A COMPARATIVE STUDY OF BODY COMPOSITION AND BLOOD PRESSURE
BETWEEN TEACHING AND NON-TEACHING STAFF
OF DIBRUGARH UNIVERSITY**

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RESEARCH ARTICLE

**A COMPARATIVE STUDY OF BODY COMPOSITION AND BLOOD PRESSURE
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ABSTRACT

The purpose of the present study was to investigate the differences of body composition and blood pressure between the teaching and non-teaching male staff of the Dibrugarh University. The data pertaining to the study was collected from 30 teaching and 30 non-teaching male staff age ranging from 45 to 55 years in the year 2012. The collected data were statistically analyzed by employing the t-test and level of significance was observed at 0.05 level of confidence. The findings of the study reveal the significant difference between the groups in case of Total Body Weight ($t_{0.05, 58} = 3.09 > 2.0017$), Fat Weight ($t_{0.05, 58} = 3.89 > 2.0017$) and Diastolic Blood Pressure ($t_{0.05, 58} = 2.59 > 2.0017$). No significant difference was observed in case of Lean Body weight ($t_{0.05, 58} = 1.59 < 2.0017$) and Systolic Blood Pressure ($t_{0.05, 58} = 1.92 < 2.0017$). It was also further observed that the teaching staff having more Body Weight ($m = 69.30 > 62.80$), Fat Weight ($m = 21.04 > 16.52$), Lean Body Weight ($m = 48.29 > 46.28$) and less Systolic Blood Pressure ($m = 123.5 < 128.33$) and Diastolic Blood Pressure ($m = 86.06 < 91.66$) than the non-teaching staff respectively. On the basis of findings it was concluded that the teaching staff has better body weight than the non-teaching staff (TBW = $69.30 > 63.80$) & Lean Body Weight ($48.29 > 46.28$) but non teaching staff has better body composition than teaching staff ($16.52 < 21.04$). It was also further concluded that the non teaching staff have higher blood pressure than the teaching staff (Systolic Blood Pressure: $m = 128.33 > 123.5$ and Diastolic Blood Pressure: $m = 91.66 > 86.06$).

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INTRODUCTION

Physical fitness is the general ability to take and respond favorably to physical effort. Wellness is the search for enhanced quality of life, personal growth, and potential through positive lifestyle behaviors and attitudes. Movement and physical activity are basic functions for which human organism was created (Verner W.B.). Inventions and advances in modern science and technology provide all amenities and conveniences that make our life easier and comfortable. These are almost eliminating day by day the need of physical activity in most of every ones' daily life. People are fascinating towards luxurious daily life and handling such amenities which creates lots of pressure and stress in most of time; affect our mental health, alertness and personal relationship.

With growing age the blood pressure and obesity engrosses the human body (Stamler J *et al.*). The physical inactivity and eating habits leads to high blood pressure and obesity. The body composition and blood pressure are vital importance in

the fitness and wellness of human being. Body composition is closely related to hyper tension and blood pressure. There are many studies that show the significant relationship of body composition and blood pressure with age, physical inactivity and eating habits. "Blood pressure" signifies the resistance produced each time the heart beats and sends blood coursing through the arteries. The peak pressure exerted by this contraction is the systolic pressure. Between beats, the heart relaxes, and blood pressure drops. The lowest pressure is referred to as the diastolic pressure. A normal blood pressure reading for an adult is: 120 (systolic) / 80 (diastolic). High blood pressure is divided into different levels (George Mateljan).

- Borderline (120-160/90-94)
- Mild (140-160/95-104)
- Moderate 140-180/105-114)
- Severe (160+/115+)

It has also been shown that obesity is positively related to essential hypertension (Kannel W *et al.*, Garrison RJ *et al.*,

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Chiang BN, Perlman LV, Epstein FH and Berglund G *et. al.*. Considerable evidence also exists on association between the distribution of body fat and blood pressure. Measures of centrally located or upper body fat predominance have been shown to be positively related to levels of both systolic and diastolic blood pressure (Weinsier RL *et al.*, Krotkiewski M *et al.*, Hartz AJ *et al.*, Kalkhoff RK *et al.*, Blair D *et al.*, Seidell JC *et al.* and Gillum RF).

METHODOLOGY

The target population consisted male teaching and non-teaching staff of Dibrugarh University during the year 2012 which age was ranging from 45 to 55 years. Among them 30 male teaching and 30 male non-teachings (Officer Rank) staffs were randomly selected. The data were collected on Blood Pressure and Body Composition. To measure the blood pressure stethoscope and sphygmomanometer, skin-fold caliper was used to measure the body fat and digital weighing machine was used to measure the body weight. The collected data were interpreted with t-test statistical technique and level of confidence was observed at 0.05 level of confidence.

RESULT

Table 1 Comparison of mean, SD, and mean difference of body composition and blood pressure of teaching and non-teaching male staff of Dibrugarh University

Variables	Group	Mean	SD	MD	SE	T-RATIO
Total body weight	Teaching	69.30	7.45	6.50	2.10	3.09*
	Non-Teaching	62.80	8.81			
Fat weight	Teaching	21.04	3.82	4.52	1.16	3.89*
	Non-Teaching	16.52	5.09			
Lean body weight	Teaching	48.29	4.68	2.01	1.26	1.59
	Non-Teaching	46.28	5.09			
Systolic blood pressure	Teaching	123.5	9.32	4.83	2.52	1.92
	Non-Teaching	128.33	10.19			
Diastolic blood pressure	Teaching	86.06	7.28	5.60	2.16	2.59*
	Non-Teaching	91.66	9.33			

*Significant at 0.05 level of confidence tabulated $t_{0.05, 58} = 2.0017$

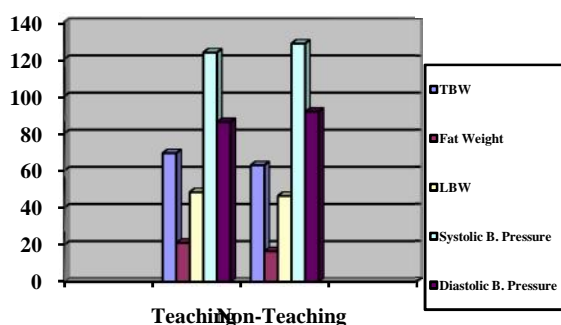


Figure 1 Graphical depiction of means of body composition and blood pressure of teaching and non-teaching male staff of Dibrugarh University

The findings of the study (Table-1) reveal the significant difference between the groups in case of Total Body Weight ($t_{0.05, 58} = 3.09 > 2.0017$), Fate Weight ($t_{0.05, 58} = 3.89 > 2.0017$) and Diastolic Blood Pressure ($t_{0.05, 58} = 2.59 > 2.0017$). No significant difference was observed in case of Lean Body weight ($t_{0.05, 58} = 1.59 < 2.0017$) and Systolic Blood Pressure

($t_{0.05, 58} = 1.92 < 2.0017$). It was also further observed that the teaching staff having more Body Weight ($m = 69.30 > 62.80$), Fat Weight ($m = 21.04 > 16.52$), Lean Body Weight ($m = 48.29 > 46.28$) and less Systolic Blood Pressure ($m = 123.5 < 128.33$) and Diastolic Blood Pressure ($m = 86.06 < 91.66$) than the non-teaching staff respectively.

DISCUSSION OF FINDINGS

The reason of findings may be due to nature of work load and its execution. Both the group has good financial condition and status. Hence they might try to maintain the leaving style as well as eating style. Hence the total body weight of both the group was found good. When the fat weight was observed, it is also found that both the group having body fat but the teaching staff having little more body fat. It might be attributed to the fact that both the professionals are having physical inactivity but good intake.

In case of blood pressure both the group found little high blood pressure. It may be attributed to the age factor. It has been identified that the age has the effects on blood pressure (Stamler J *et al.* and Roberts J *et al.*). In case of adults Blood pressure is related to various indices of body build and obesity; i.e. functions of stature and weight. Weight is positively associated with blood pressure, and stature shows little relationship (Florey C du V, Acheson R and Stamler J *et al.*). Moreover the non-teaching staff has the administrative responsibilities where they have to manage the whole official works. Most of the teaching staff no need to fulfill such kind of responsibilities unless additional assignment. Hence the non teaching staff has little bit more mental pressure than the teaching staff. As a result the non-teaching staff has the more blood pressure than the teaching staff.

CONCLUSION

On the basis of findings it was concluded that the teaching staff has better body weight than the non-teaching staff (TBW = $69.30 > 63.80$) & Lean Body Weight ($48.29 > 46.28$) but non teaching staff has better body composition than teaching staff ($16.52 < 21.04$). It was also further concluded that the non teaching staff have higher blood pressure than the teaching staff (Systolic Blood Pressure: $m = 128.33 > 123.5$ and Diastolic Blood Pressure: $m = 91.66 > 86.06$).

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