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An Association of the Chronological Age to Body Mass Index and Total Body Fat

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ABSTRACT

The present study aims at finding the relationship of chronological age to the body mass index and total body fat.

Methodology: *Survey method was used to collect the data on 100 samples age 22.09±.217 who were purposively selected form Lovely professional University, Punjab, India from among different professional courses (Education, physical education. M Tech, B Tech, EEE, ECE, MCA, BCA, BSC, and MSC) Data on fat percentage and body mass index was collected using OMRON Body composition monitor with scale Model HBF-362, utmost care was given during data collection data was collected in the early morning to counter any alteration in the findings.*

Statistical Procedure: *Data was statically analyzed using descriptive statistics and Pearson product moment correlation coefficient.*

Result & conclusion: *The finding of the present study revealed the samples were having healthy BMI (22.96) and Normal amount of body fat (19.81) and further chronological age has no relationship with body mass index and total body fat as the p-value was larger than 0.05 at 95 degree of confidence.*

KEYWORDS : Chronological age, body mass index, total body fat and PPMCC

Introduction

Aging is the process of progressively getting mature and older there is always plethora of changes associated with the aging, ranging from physical, physiological, mental, emotional and social etc. To live optimum health it is vital to have all these aspects of healthy living in optimal state, Leaving aside maturity and all other aspects the aging is associated with the decrement in various physiological capacities and can make the things worst. Many previous studies had presented the relationship between aging and physiological changes amongst them is the effect of aging on the body fat, studies have demonstrated that the aging can leads to increase in the percent body fat (5). Whereas studies have demonstrated that aging has no effect on BMI (8).

The aging process associated with many changes in body composition, often without concomitant changes in body weight and body mass index. In general, as individual's age, lean mass and bone mineral density decrease and percent body fat increases. Furthermore, the increase in fat mass is distributed more specifically in the abdominal region, an area associated with cardiovascular disease and diabetes. A recent cross-sectional study from the Florey Adelaide Male Aging Study actually determined that the increase in percent FM was mostly due to reduced lean mass, whereas the increase in abdominal percent FM was due to more FM deposited in the abdominal region.

It is generally agreed that changes in body composition are due to alterations in energy balance, with a positive energy balance leading to weight gain and a negative balance resulting in weight loss. However, body composition changes associated with aging often occur in the absence of weight fluctuations. The purpose of this review is to examine the impact of aging on resting metabolic rate (RMR) and macronutrient oxidation rates as potential causes for the observed body composition changes of aging. Alternatively, it can be argued that changes in RMR with aging may be due in part to changes in body composition. These seemingly divergent views are also explored.

Objectives

1. To establish the relationship between chronological age and body mass index.
2. To find out the relationship between chronological age and total body fat.

Hypothesis

There might be a significant relationship between chronological age and body mass index.

There might be a positive relationship between chronological age and total body fat.

Methodology

Survey method was used to collect the data on 100 samples age 22.09±.217 were purposively selected form Lovely professional University, Punjab, India from among different professional courses (Education, physical education. M Tech, B Tech, EEE, ECE, MCA, BCA, BSC, and MSC) Data on fat percentage and body mass index was collected using OMRON Body composition monitor with scale Model HBF-362, utmost care was given during data collection data was collected in the early morning to counter any alteration in the findings. Data was statically analyzed using descriptive statistics and Pearson product moment correlation coefficient.

Analysis and interpretation

Table: 1
Descriptive Statistics

Groups	N	Mean		SD	Range		Skewness	
		Stat	Std. error		Min.	Max.	Stat.	Std. error
Chronological Age	100	22.09	.217	2.17	9.00 18.00	27.00	-.197	.241
Body Mass Index	100	22.96	.362	3.62	15.57 16.00	31.57	.253	.241
Total Body Fat	100	19.81	.747	7.47	29.30 7.30	36.60	.293	.241

The average age of the samples were 22.09±.217 ranging from minimum 18 to maximum of 27 years? Samples were having normal fat percentage and healthy BMI. The normality of the data was checked using skewness which revealed the data was symmetrical.

Table: 2
Relationship of chronological age to body mass index and total body fat

Variable	Body Mass Index		Total Body Fat	
Chronological age	r. value	Sig. (2-tailed)	r. value	Sig. (2-tailed)
	.187	.063	.127	.210

*r value to be significant at 0.05 level of significance (0.273)

Pearson's product moment correlation coefficient revealed insignificant relationship between chronological age body mass index as the p-value was higher than 0.05 at 0.05 level of significance for 2-tailed test, indicating increasing in chronological age has nothing to do anything with body mass index in the selected samples. On the other hand insignificant correlation was also found between chronological age and total body fat as p-value .210 was insignificant at 0.05 level of significance, indicating increasing age does not account for any change total body fat in the selected samples.

Discussion on the hypothesis

On testing the hypothesis that increasing age will have significant relationship with body mass index; the result of the study rejected the hypothesis and revealed that increasing age is not associated with the body mass index in any way. The result of the study was fully supported with the findings of St-Onge MP. (2005).

The second hypothesis that chronological age will have positive relationship with total body fat i.e. with the increase in age percent body fat will linearly increase, but the result of the study unable to accept the hypothesis and revealed insignificant relationship at 0.05 level of significance. The findings are in contrast to the findings of Going S, Williams D and Lohman T. (1995) the reverse findings may be because smaller age range i.e. 18-28 the findings can be inline of the literature if the age range will increase.

Conclusion

On the basis of the findings following conclusion can be drawn:-

1. Chronological age has insignificant relationship to the body mass index.
2. Chronological age has insignificant relationship to the total body fat.

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