**COMPARISON OF BODY MASS INDEX OF SCHOOL CHILDREN OF AZAMGARH DISTRICT**

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***Abstract***

*The Main Purpose of the study was to analyze difference in terms of Body Mass Index of school going children of Azamgarh District in Uttar Pradesh. Total one Hundread ( Fifty male Subjects each from Urban area and Rural area School) were selected randomly as subjects of study. From Urban area the subjects were taken from A. N Memorial Public School whereas in terms of Rural area the subjects were taken from Purva Madhyamic Vidyalaya , Azamgarh. The age group of the subjects ranged from 12 to14 years. The data was collected during school hours (8 a.m to 12 noon) by administering Digital Weighing Machine for Measuring Body Weight and Portable Stadiometer for Measuring Body Height. Independent t Test was employed to analyse the difference in terms of Body Mass Index of school children . By using Independent t Test it was found that there was significant difference among Body Mass Index among school children .The t value of Body Mass Index was found to be (t=2.7) , Body Weight was found to be (t=3.69) and of Body Height was found to be(t=4.0 ) at 0.05 Level of Significance which clearly shows that there was a Significant difference among Body Mass Index of school children .*

***Keywords :*** Body *Weight , Body Height , Body Mass Index , Urban , Rural.*

**Introduction :**

Physical activity and regular exercise is the path towards healthy living and well being for an individual. Regular exercise has numerous outcomes as it helps to build strong muscles , reduces cholesterol level in body , eliminates unwanted fat deposits , relieves us from anxiety and stress , allows proper sleep .

Some factors related to the environmental responsible for obesity among individuals are Excessive intake of calories , inappropriate lifestyle patterns , intake of unhealthy food stuffs , easy access to fast food and lack exercise and physical activity.

**Methodology:**

In this the researcher described plan and procedure for present study i.e Selection of Subjects , Selection of Variables , Criterion Measures , Collection of Data and Statistical Techniques Employed.

**Selection of Subjects:**

Total one Hundred (Fifty male School children each from Urban area and Rural area School) were selected randomly as subjects of study. From Urban area the subjects were taken from A.N Memorial School , Azamgarh whereas in terms of Rural area the subjects were taken from Purva Madhyamic Vidyalaya , Azamgarh. The age group of the subjects ranged from 12 to14 years**.** The data was collected during school hours (8 a.m to 12 noon) Besides this all the subjects enjoyed good health as per the records of respective school.

**Selection of variables :**

The variables selected for the study were as follows :

* Body Weight
* Body Height
* Body Mass Index

**Criterion Measures of Tests :**

**Body Weight :**Body Weight will be measured with the help of Digital Weighing Machine. The measurement will be taken in Kilograms.

**Body Height :** Body Height will be measured with the help of Portable Stadiometer . The Measurement will be taken in Centimeters .

**Body Mass Index :-**Body Mass Index will be calculated using the ratio Body Weight in Kilograms And Square of Body Height in Meters .

**Collection of Data**

The data was collected by administrating these tests on male school children of urban and rural school of Azamgarh district , Uttar Pradesh. **.** The data was collected during school hours (8 a.m to 12 noon) Besides this all the subjects enjoyed good health as per the records of respective school.

**ANALYSIS OF DATA AND RESULTS OF THE STUDY**

The statistical analysis of data collected on 50 Male school children each from urban and rural area school to analyse the difference in Body Mass Index have been presented in this chapter. The data presenting difference in Body Mass Index of urban and rural school children was examined by using Independent t Test. The Independent t Test values were tested for significance at 0.05 level.

**FINDINGS**

The mean, standard deviation and Test values were computed to analyze the data statistically. The results have been presented in the following tables:

**Table-1**

**Descriptive Statistics of Body Weight of Rural & Urban School children**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Rural** | **Mean** | **N** | **Std.Deviation** | **Skewness** | **kurtosis** | **Std. Error** |
| **Body Weight** | **33.24** | **50** | **6.74** | **0.385** | **-.497** | **0.95** |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Urban** | **Mean** | **N** | **Std.Deviation** | **Skewness** | **kurtosis** | **Std. Error** |
| **Body Weight** | **38.55** | **50** | **7.57** | **.414** | **-.548** | **1.07** |

Table 1 indicates that the Mean and Standard Deviation of Rural school children is 33.24 +-6.74. Table 1 indicates that the Mean and Standard Deviation of Urban school children is 38.55+-7.57 . It also indicates that the Mean Body Weight of Rural school children (33.24) is less than Mean Body Weight of Urban School Children (38.55).

Table 1(a)

|  |  |  |
| --- | --- | --- |
|  | **T test for Equality of means** | |
|  | **t sig(2 tailed)** | |
| **Body Weight** | **3.69** | **0.000** |

**Significant(98)0.05 =1.98**

Table 1 reveals that the value of t is 3.69 . Thus t-value is significant as the p-value is 0.000 which is less than 0.05. Thus, the null hypothesis of equality of means of two groups is rejected and concluded that the Body Weight of Rural and Urban School Children are different.

**Descriptive Statistics of Body Height of Rural & Urban School children**

Table 2

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Rural** | **Mean** | **N** | **Std.Deviation** | **Skewness** | **kurtosis** | **Std. Error** |
| **Body Height** | **1.43** | **50** | **0.10** | **-.158** | **-.513** | **.014** |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Urban** | **Mean** | **N** | **Std.Deviation** | **Skewness** | **kurtosis** | **Std. Error** |
| **Body Height** | **1.51** | **50** | **0.8** | **-.161** | **-.572** | **0.1** |

Table 2 indicates that the Mean and Standard Deviation of Rural school children is 1.43 +-0.10 .Table 2 indicates that the Mean and Standard Deviation of Urban school children is 1.51 +-0.80 **.** It also indicates that the Mean Body Height of Rural School children (1.43 ) is less than Mean Body Height of Urban School Children ( 1.51).

Table 2(a)

|  |  |  |
| --- | --- | --- |
|  | **T test for Equality of means** | |
|  | **t sig (2 tailed)** | |
| **Body Height** | **4.00** | **0.000** |

**Significant(98)0.05 =1.98**

Table 2(a) reveals that the value of t is 4.00 . Thus t-value is significant as the p-value is 0.000 which is less than 0.05. Thus, the null hypothesis of equality of means of two groups is rejected and concluded that the Body Height of Rural and Urban School Children are different.

**Descriptive Statistics of Body Mass Index of Rural & Urban School children**

Table 3

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Rural** | **Mean** | **N** | **Std.Deviation** | **Skewness** | **kurtosis** | **Std. Error** |
| **BMI** | **15.78** | **50** | **1.56** | **.666** | **-.075** | **.221** |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Urban** | **Mean** | **N** | **Std.Deviation** | **Skewness** | **kurtosis** | **Std. Error** |
| **BMI** | **16.74** | **50** | **1.96** | **- .077** | **-0.227** | **.277** |

Table 3 indicates that the Mean and Standard Deviation of Rural school children is 15.78 +-1.56 .Table 3 indicates that the Mean and Standard Deviation of Urban school children is 16.74+**-** 1.96 **.** It also indicates that the Mean Body Mass Index of Rural School children (15.78 ) is less than Mean Body Mass Index of Urban School children (16.74 ).

Table 3(a)

|  |  |  |
| --- | --- | --- |
|  | **TtestforEqualityof means** | |
|  | **t sig(2 tailed)** | |
| **Body Mass Index** | **2.7** | **0.008** |

**Significant(98)0.05 = 1.98**

Table 3 reveals that the value of t is 2.7 . Thus t-value is significant as the p-value is 0.008 which is less than 0.05. Thus, the null hypothesis of equality of means of two groups is rejected and concluded that the Body Mass Index of Rural and Urban School Children are different .

**Graphical Representation of Mean & Std . Dev of Rural & Urban school children on selected variables**

**Discussion on Findings**

The major findings of the study are as follows:-

* Significant difference was found between Rural and Urban School children in the variables on Body Weight , Body Height , Body Mass Index .The Mean value of subjects belonging to Rural area school was lower than their Urban counterparts. Therefore Rural School Children Performed better than Urban School children on all the Selected Variables . This may be result of their more ability to do physical work and participation in Physical activities , most of them were from lower socio economic status and most of the children use to carry out regular physical work which improved their physical fitness. Most of their daily works were performed manually instead of machinery .

This is Supported by

* **Pallab Ghosh(2015)** , “ Comparison of Physical Fitness Level Urban and Rural School Going Female Student” , International Journal of Social Science and Humanities Research ISSN 2348-3164 (online) 3(1) , pp: (313-316).
* **Tahir mehmood et al. (2017)** Comparison of Physical Fitness Between Rural and Urban Physical Therapy Students Studying in Lahore, Pakistan , APMC 12(2) DOI: 10.29054/APMC/18.300

* **Sylejmani, B., Myrtaj, N., Maliqi, A., Gontarev, S., Georgiev, G., & Kalac, R. (2019**). Physical fitness in children and adolescents in rural and urban areas. *Journal of Human Sport and Exercise*, *in press*. doi:https://doi.org/10.14198/jhse.2019.144.15
* **Sampa sarkar and ashish paul (2015) “**comparative study on health related physical fitness between tribal and non tribal school going boys**”,** *International Journal of Advanced Research in Management and Social Sciences* : 4( 7) ISSN: 2278-6236
* **Toriola, O.M. & Monyeki, M.A. (2012).** Health-related fitness, body composition and physical activity status among adolescent learners: The PAHL study. *African Journal for Physical, Health Education, Recreation and Dance,* 18(4:1), 796-812.
* **Koley and Khanna (2011**), “Effects of Pubertal Age on Handgrip Strength in School going Children of North India” , International Journal of Health Sciences & Research , 1( 2 ) .
* **Booth et al.(2001)** , “The epidemiology of overweight and obesity amongAustralian children and adolescents, 1995-97” **,** australian and new zealand journal of public health , 25( 2)

**Conclusion**

Based on the data collected and the research findings the following conclusions may be drawn:-

* Significant difference was found between Rural and Urban School children in the variables on Body Weight , Body Height , Body Mass Index .The Mean value of subjects belonging to Rural area school was lower than their Urban counterparts. Therefore Rural School Children Performed better than Urban School children on all the Selected Variables . This may be result of their more ability to do physical work and participation in Physical activities , most of them were from lower socio economic status and most of the children use to carry out regular physical work which improved their physical fitness. Most of their daily works were performed manually instead of machinery .

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**Internet Website Links**

* [**Paul Zongo**](https://journals.sagepub.com/doi/abs/10.1177/1010539517735414?rfr_dat=cr_pub%3Dpubmed&url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org&journalCode=apha)**, MS, [Stephane Frayon](https://journals.sagepub.com/doi/abs/10.1177/1010539517735414?rfr_dat=cr_pub%3Dpubmed&url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org&journalCode=apha) (2017)** Anthropometric Characteristics and Physical Fitness in Rural and Urban 11- to 16-Year-Old Melanesian Adolescents: A Cross-sectional Study in New Caledonian Schools , Asia Pacific journal of public Health [ttps://doi.org/10.1177/1010539517735414](https://doi.org/10.1177%2F1010539517735414)

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* **Pallab Ghosh(2015)** , “ Comparison of Physical Fitness Level Urban and Rural School Going Female Student” , International Journal of Social Science and Humanities Research ISSN 2348-3164 (online) 3(1) , pp: (313-316).
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* **Sylejmani, B., Myrtaj, N., Maliqi, A., Gontarev, S., Georgiev, G., & Kalac, R. (2019**). Physical fitness in children and adolescents in rural and urban areas. *Journal of Human Sport and Exercise*, *in press*. doi:https://doi.org/10.14198/jhse.2019.144.15
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* **Toriola, O.M. & Monyeki, M.A. (2012).** Health-related fitness, body composition and physical activity status among adolescent learners: The PAHL study. *African Journal for Physical, Health Education, Recreation and Dance,* 18(4:1), 796-812.
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