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Gender Wise Comparison of Physical and Health Status of Primary and High School Children of Uttar Pradesh

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Abstract: Childhood and adolescence are critical periods of development in every domain. Children during this stage undergo major physical, cognitive and psychological changes, which have significant impact on their health and wellbeing. Children during this stage make significant independent changes in their diet, physical activity, substance use, sexuality, etc., which have long lasting effect on their lifestyle and health condition. Lack of physical activity and healthy lifestyle can adversely affect their normal growth and development and hence is a major public health concern. The study results indicating a lesser active lifestyle and exercise patterns among girl school children of Uttar Pradesh, so it is recommended that provision for active involvement in physical activity and sports be provided for girl students in the school based programmes.

Keywords: *Gender, Physical, Health and Children.*

Introduction:

School has an important environmental influence in shaping the health, hygiene and nutritional habits of children. There is mounting evidence suggesting that the health of a country's population can be greatly improved through changing health-related behaviour. An unhealthy lifestyle resulting from a poor diet and lack of physical exercise is recognised as the leading cause of obesity and overweight and is the main contributor to non-communicable diseases.

Direct and indirect for health effects of physical activity has been reported (Hallal et al, 2006. To understand the relationship of physical activity to health during childhood, it is important to assess physical and health status of school children during the developmental stages. Assessment of physical activity patterns among children have been investigated by Esht et al

(2018); Gulati et al (2014). Studies have shown that children who are less active have chances of developing cardiovascular diseases in later life (Yang et al 2006). Physical activity has also shown its relation with gender and age. Physical and health status of school children have been surveyed and compared by various studies (Revenson and Marin-Chollom, 2015; Hands et al, 2016; Ramachandran, Deol and Manmeet, 2009).

The present study was an attempt to survey the physical and health status of primary and high school children of Uttar Pradesh and to compare the physical and health status with respect to gender.

Methods:

Three thousand primary and high school children (1500 boys and 1500 girls) from different districts of Uttar Pradesh were selected as subjects for the study. The sample included 750 boys and 750 girls from primary school and 750 boys and 750 girls from high school. The subject's personal and demographic variables; physical and health status variables including height, weight, blood pressure, heart rate and body mass index were assessed.

The descriptive statistics in terms of frequencies and percentages was used to present the data on physical and health status of school children. The independent t-test was used to compare the physical and health status of school children with respect to type gender. The level of significance to test the selected hypothesis was set at 0.05.

Results:

The descriptive statistics of the physical health status of the participants with respect to gender is shown in table 1.

Table 1: Descriptive Statistics of Physical and Health Status With Respect To Gender

	Gender	N	Mean	Std. Deviation	Std. Error Mean
WEIGHT	**BOYS**	1500	42.2120	7.84454	.20255
	GIRLS	1500	40.8585	6.54002	.16886
HEIGHT	**BOYS**	1500	1.5366	.08965	.00231
	GIRLS	1500	1.5079	.27560	.00712
SYSTOLIC BP	**BOYS**	1500	124.57	8.73268	.22548
	GIRLS	1500	124.67	9.19933	.23753
DIASTOLIC BP	**BOYS**	1500	80.1647	8.17725	.21114
	GIRLS	1500	79.9367	23.82266	.61510
HEART RATE	**BOYS**	1500	80.3940	7.05133	.18206
	GIRLS	1500	81.9773	18.99670	.49049
BODY MASS INDEX	**BOYS**	1500	18.1079	3.03586	.07839
	GIRLS	1500	18.4240	3.22828	.08335

Table 1 of descriptive statistics of physical and health status indicates mean and standard deviation values of 42.22 and 7.84 for boys and 40.86 and 6.54 for girls in case of body weight; 1.537 and 0.089 for boys and 1.508 and 0.276 for girls in case of height; 124.02 and 9.74 for boys and 123.70 and 10.81 for girls in case of systolic blood pressure; 80.26 and 8.43 for boys and 79.45 and 8.65 for girls in case of diastolic blood pressure; 81.13 and 8.57 for boys and 83.65 for boys and 19.92 for girls in case of heart rate; and 18.11 and 3.04 for boys and 18.43 and 3.23 for girls in case of BMI.

The independent sample t-test was done to compare the physical and health status with respect to gender. The results pertaining to it is shown in table 2.

Table 2: Independent Samples Test for Physical and Health Status With Respect To Gender

Variables		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	95% CI	
									Lower	Upper
WT	Equal variances assumed	46.497	0.000	5.133	2998	0.000	1.353	0.263	0.836	1.87052
HT	Equal variances assumed	0.492	0.483	3.836	2998	.000	0.0287	0.007	.0140	.04338
SYS. BP	Equal variances assumed	5.642	0.018	-0.291	2998	.771	-0.0953	0.327	-0.737	.54682
DIA. BP	Equal variances assumed	2.167	0.141	0.351	2998	.726	0.228	0.650	-1.047	1.50313
HR	Equal variances assumed	2.574	0.109	-3.026	2998	.002	-1.583	0.523	-2.609	-.55748
BMI	Equal variances assumed	.103	0.748	-2.762	2998	.006	-.316	0.114	-.540	-.09170

Table 2 of comparison of physical and health status between boys and girls indicate that significant t ratios of 5.133, 3.836, 3.03 and 22.76 respectively for weight, height, heart rate and BMI. All the above obtained t-ratios were greater than the t- value of 1.96 required for

significance at 0.05 levels. The t-ratios for systolic and diastolic blood pressure (0.291 and 0.351) were not significant. The results indicate that boys had significantly higher weight, height and lower heart rate and BMI as compared to girls.

The graphical representation of physical health status of boys and girls are shown in figure 1.

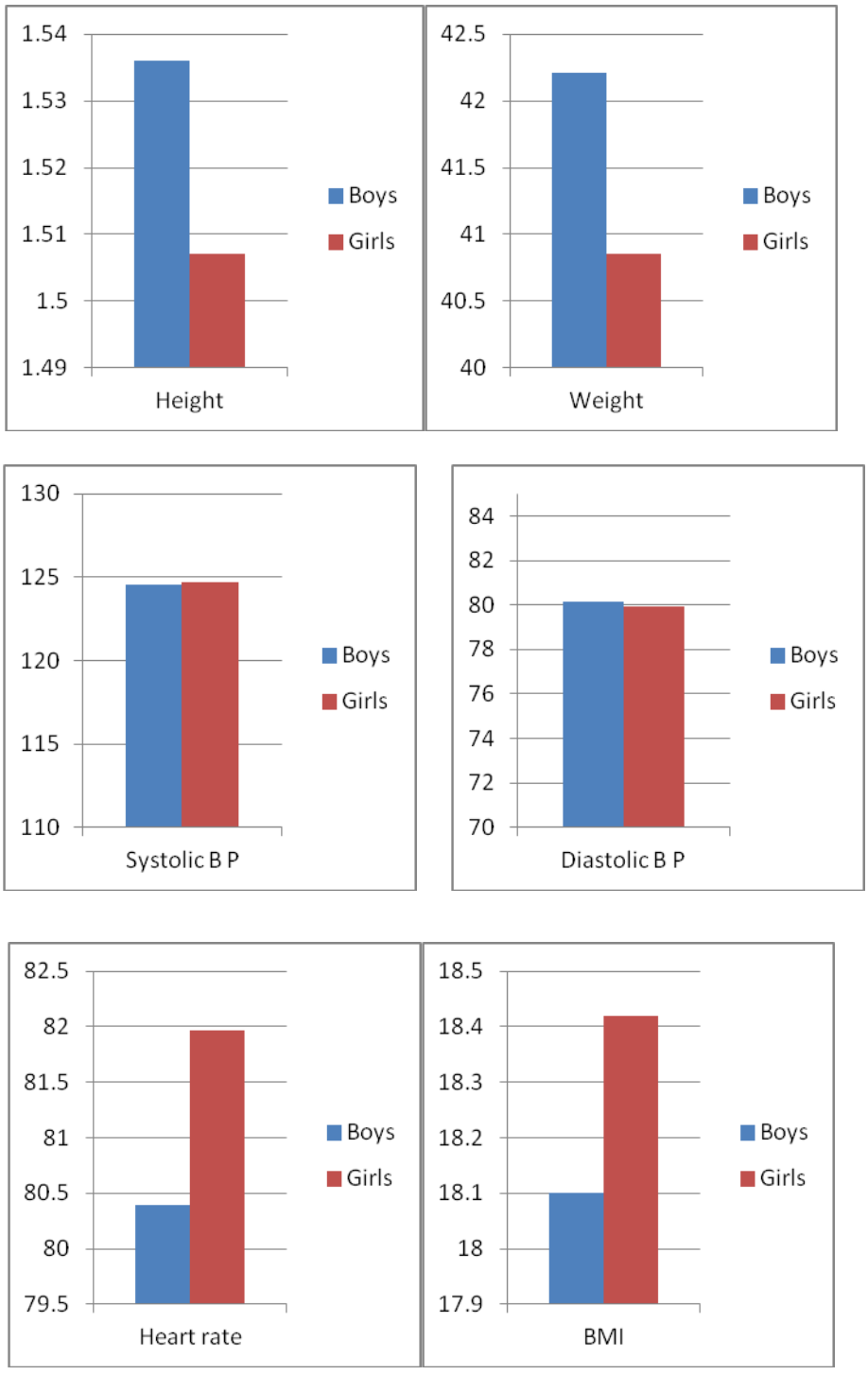

Figure 1: Means of Physical and Health Status of Boys and Girls

The results indicated that boys were significantly taller and heavier than girls. Boys had lower resting heart rate as compared to girls. There was no significant difference in blood pressure in the comparison between boys and girls. The body mass index of girls was significantly higher than that of boys. The general trend of lower height and weight of girls accompanied by higher resting heart rate and greater BMI suggest the progressive reduction in outdoor physical activity among girls, who might be restricted to indoor activities. The non-availability and lack of provision of quality physical activity sessions in the school environment is also a matter of concern with respect to development of physical status and health of children.

Conclusions:

The study results leads to the following conclusions:

- Primary and secondary school boys of Uttar Pradesh had significantly higher values in height as compared to girls.
- Primary and secondary school boys of Uttar Pradesh had significantly higher values in body weight as compared to girls.
- No significant difference in systolic and diastolic blood pressure was found between boys and girls belonging to primary and secondary school of Uttar Pradesh.
- Primary and secondary school boys of Uttar Pradesh had significantly lower resting heart rate as compared to girls.
- Primary and secondary school girls had significantly greater BMI values as compared to girls

The study results indicating a lesser active lifestyle and exercise patterns among girl school children of Uttar Pradesh, so it is recommended that provision for active involvement in physical activity and sports be provided for girl students in the school based programmes.

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