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A STUDY ON LIPID PROFILE OF BOYS DURING ADOLESCENCE WITH SPECIAL REFERENCE TO THEIR AGE

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Abstract - Lipid profile, is a collective term given to the estimation of, typically, total cholesterol, high-density lipoprotein cholesterol, low-density lipoprotein cholesterol, and triglycerides. The Purpose of the present study was to analyze the difference if any among the boys in the age of 13, 14 and 15 on lipid profiles. To achieve the purpose of the study 150 matriculation students in Chennai city were selected as subjects. Lipid profiles such as cholesterol HDL-direct, Triglycerides, LDL cholesterol ratio, VLDL cholesterol, and LDL/HDL ratio were selected as criterion variables. The lipid profiles were studied using the standard Bio-chemical laboratory facilities of Thyro Care. One way analysis of variance was used as an appropriate statistical tool to study the significance. The statistical analysis on lipid profiles of adolescence boys of 13, 14 and 15 was not statistically significant. Hence it was concluded that the age variations during adolescence (13,14 and 15) did not have any significance on lipid profiles.

Keywords: *Cholesterol HDL-direct; Triglycerides; LDL cholesterol ratio; VLDL cholesterol; LDL/HDL ratio*

I. Introduction

In the present days obesity has been a growing concern all over the world because of lack of physical fitness. Irrespective of socio-economic conditions, people from all sections are reluctantly to participate in physical activities because of their attitude towards improving their standard of living. Boys in the period of adolescence are placed to sedentary life style because of their working nature both at home and school. It places them in physical and mental stress which subjects them into many physical, physiological and metobological changes. The research paper aims to study the lipid profiles of boys during adolescence with special reference to their age between 13 and 15 and see if there is a difference in lipid profiles due to age.

II. Methodology

To achieve the purpose of the present study 150 matriculation students from Chennai city were selected between the age group of 13 and 15. Their height and weight were assessed and BMI (Body Mass Index) was calculated. Based on the BMI, the subjects who lie above BMI>25 were filtered to 34 numbers of which 12 were in the age group of 13 and 13 were in the age group of 14 and 9 were in the age group of 15. The lipid profiles of the selected subjects were measured using the standardized Bio-Chemical laboratory facilities of ThyroCare. The lipid profiles include cholesterol HDL-direct, Triglycerides, LDL cholesterol ratio, VLDL cholesterol, and LDL/HDL ratio. The variations of lipid profiles of the age group of 13, 14 and 15 were analyzed using one way analysis of variance which projected the statistical significance of lipid profiles pertaining to the age differences of 13, 14 and 15, where the level of statistical significance was set at 0.05 level of confidence.

III. Analysis and Results

The data collected on lipid profiles among the adolescent boys aged 13, 14 and 15 were analyzed by one way analysis of variance. The results of descriptive measures, differential analysis and post-hoc test are presented in the following tables.

Table – I - Analysis of Variance on HDL

	Source of Variance	Sum of Squares	Df	Mean Square	F	Sig.
HDL	Between groups	149.71	2.00	74.85	0.01	0.38
	Within groups	2329.01	31.00	75.13		
	Total	2478.72	33.00			

Table-II reveals that the obtained F-value was 1.00. To be significant at 0.005 levels for df (2,31) the required critical value was 3.30. Hence the obtained F-value 1.00 was found to be less than the required critical value (3,30). It was observed that the mean difference exists was statistically not significant. Further from the result it was inferred that the boys aging 13 to 15 were found to be similar in the HDL level. The mean value of boys aging 13, 14 and 15 on HDL is displayed in figure.1

Figure – 1- Bar diagram showing the mean differences on HDL

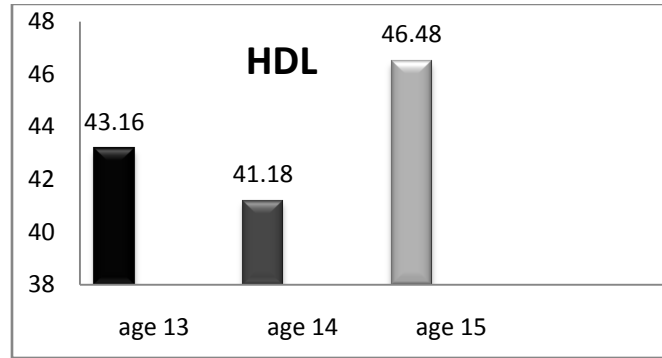


Table – II - Analysis of Variance on Triglyceride

	Source of Variance	Sum of Squares	Df	Mean Square	F	Sig.
Triglyceride	Between groups	3776.25	2.00	1888.13	0.75	0.48
	Within groups	77690.31	31.00	2506.14		
	Total	81466.57	33.00			

Table-III reveals that the obtained F-value was 0.75. To be significant at 0.005 levels for df (2, 31) the required critical value was 3.30. Hence the obtained F-value 0.75 was found to be less than the required critical value (3,30). It was observed that the mean difference exists was statistically not significant. Further from the result it was inferred that the boys aging 13 to 15 were found to be similar in the Triglyceride level. The mean value of boys aging 13, 14 and 15 on Triglyceride is displayed in figure.2

Figure – 2 - Bar diagram showing the mean differences on Triglyceride

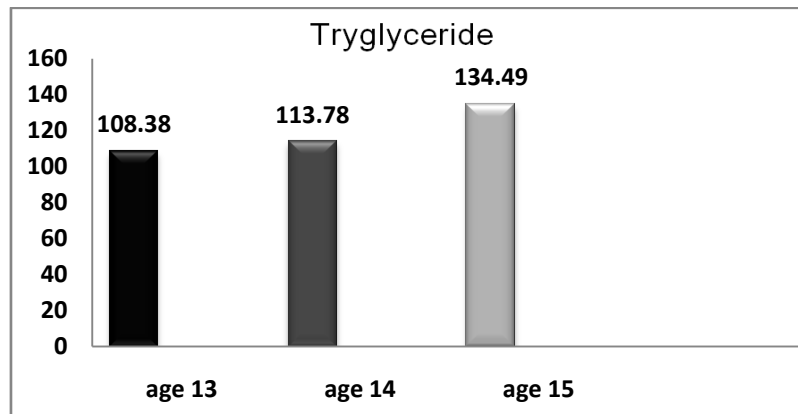


Table – III - Analysis of Variance on LDL

	Source of Variance	Sum of Squares	Df	Mean Square	F	Sig.
LDL	Between groups	445.17	2.00	222.59	0.44	0.65
	Within groups	15684.56	31.00	505.95		
	Total	16129.73	33.00			

Table-IV reveals that the obtained F-value was 0.44. To be significant at 0.005 levels for df (2, 31) the required critical value was 3.30. Hence the obtained F-value 0.44 was found to be less than the required critical value (3,30). It was observed that the mean difference exists was statistically not significant. Further from the result it was inferred that the boys aging 13 to 15 were found to be similar in the LDL level. The mean value of boys aging 13, 14 and 15 on LDL is displayed in figure.3

Figure – 3 - Bar diagram showing the mean differences on LDL

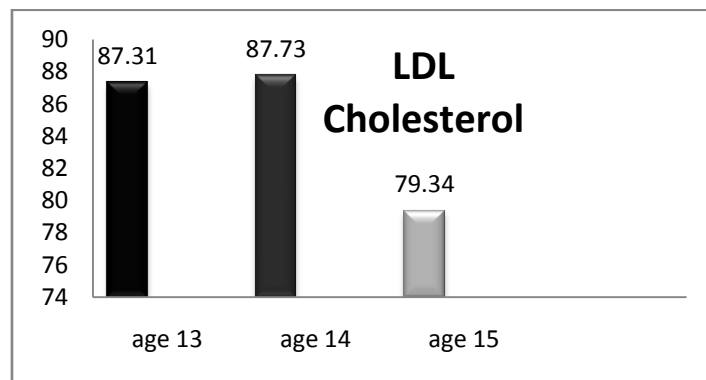
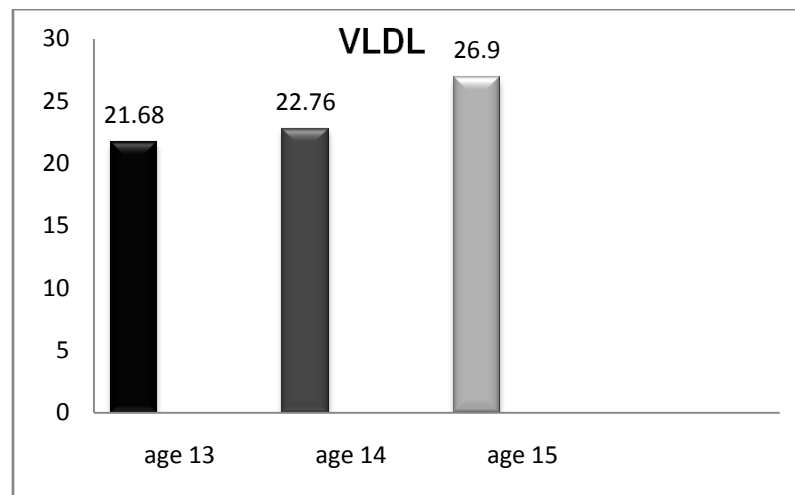


Table – IV- Analysis of Variance on VLDL

	Source of Variance	Sum of Squares	Df	Mean Square	F	Sig.
VLDL	Between groups	151.05	2.00	75.53	0.75	0.48
	Within groups	3107.61	31.00	100.25		
	Total	3258.66	33.00			

Table-V reveals that the obtained F-value was 0.75. To be significant at 0.005 levels for df (2, 31) the required critical value was 3.30. Hence the obtained F-value 0.75 was found to be less than the required critical value (3,30). It was observed that the mean difference exists was statistically not significant. Further from the result it was inferred that the boys aging 13 to 15 were found to be similar in the VLDL level. The mean value of boys aging 13, 14 and 15 on VLDL is displayed in figure.4

Figure – 4 - Bar diagram showing the mean differences on VLDL



IV. Findings

The result of Analysis of Variance on lipid profiles among the boys aging 13, 14 and 15 observed that the mean difference among them was statistically not significant. There was no statistical significance in on cholesterol HDL-direct, Triglycerides, LDL cholesterol ratio, VLDL cholesterol, and LDL/HDL ratio. The findings proved that the difference in age during adolescence of 13, 14 and 15 did not have any significance in their lipid profile.

V. Conclusion

Based on the findings it is concluded that the lipid profile of the boys during adolescence remain undifferentiated. In addition to it, while selecting the subjects for the study, since the Body Mass Index (BMI>25), was used as criterion, although boys differ in the age, as they were all in the pool of BMI>25, that may have the significant source for not getting significant mean difference in the lipid profiles.

VI. References

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