STUDYOF ADOLESCENT ABDOMINAL VOLUME INDEX

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ABSTRACT

Abdominal volume index and conicityindexin predicting metabolic abnormalities in young women of different socioeconomic class, various adiposity fat help to measure adiposity abdominal fat,conicity index and abdominal volume index now help to assess central obesity. Visceral fat, also known as organ fat or *intra-abdominal fat*, is located inside theperitoneal cavity, packed in between internal organs and torso, as opposed to subcutaneous fat, which is found underneath the , and intramuscular fat, which is found interspersed in skeletal muscle.

Short term longitudinal study represent that elevated body mass and BMI cause of chronic disease in early childhood. Recent data from USA shown increased of chronic disease in adulthood due to obesity in early childhood. later Result presents that body mass has correlate with abdominal volume index that shown body mass index increase it will increase abdominal volume index, conicity index and abdominal volume index has correlate with each other in life.

Key words: Conicity index, abdominal volume index, adolescents, Nutritional status

I.Introduction:

Abdominal volume index and conicity**index** in predicting metabolic abnormalities in young women of different socioeconomic class,various adiposity fat help to measure adiposity abdominal fat,conicity index and abdominal volume index now help to assess central obesity.Visceral fat, also known as organ fat or *intra-abdominal fat*, is located inside theperitoneal cavity, packed in between internal organs and torso, as opposed to subcutaneous fat, which is found underneath the , and intramuscular fat, which is found interspersed in skeletal muscle. Visceral fat is composed of several adipose depots including mesenteric, epididymalwhite adipose tissue (EWAT) and perirenalfa. Abdominal obesity was more closely related with metabolic dysfunctions connected with cardiovascular disease than was general obesity.Central obesity is positively associated with risk in women and men. It has been hypothesized that the sex differences in fat distribution may explain the sex difference in coronary heart disease risk, abdominal volume index is good indicator than BMI.Dramatic change during adolescence growth spurt, it is important to measure changes through anthropometry. Low body mass in adolescent has associated with low body mass

II.Materials and methods:For this study anthropometric measurements are taken waist Cir circumference, hip circumferences, weight and height, hip and chest circumferences are measured with stretchable tapes centre of mid coastal rib and top of iliac crest. Widest point of buttock is taken as hip circumference.weight are taken by weighing machine, height by stadiometre.

Conicity index, waist-hip ratio, waist –height ratio those are calculated

Abdominal volume index=2* waist(cm)+.7(waist circumference- hip circumference)cm/1000

Conicity index=Waist circumference/.109*1/√(weight/height)

1.1Study Area: Study is done on sitaadhihi gram panchayat areastudy group are thousand adolescent girls.

Table 1: Age wise change in Abdominal volume index of study group

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
10	100	11409.74	965.66	96.566716	11218.13	11601.35	8163.72	14565.456
11	100	11901.71	1080.204	108.020481	11687.37	12116.051	9291.60	15095.909
12	100	12075.90	1517.044	151.704443	11774.89\	12376.92	8032.86	16411.125
13	100	12240.68	1352.74	135.274422	11972.26	12509.096	5887.64	15664.40
14	100	12463.12	1727.88	172.788586	12120.27	12805.97	6800.35	17040.096
15	100	13141.99	3361.931	336.193141	12474.91	13809.070	7169.02	36747.84
16	100	13202.03	1829.242	182.924208	12839.07147	13564.99411	8904.356	17388.356
17	100	13261.86	2130.56	213.056506	12839.11227	13684.61293	8037.225	18790.656
18	100	13655.73	1959.115535	195.911554	13267.00035	14044.46241	9556.420	18599.481
19	100	13682.738	1955.294527	195.529453	13294.76571	14070.71141	7732.100	17762.601
Total	1000	12703.55	2033.397240	64.301667	12577.37165	12829.73530	5887.649	36747.844

Table 2:Correlations between abdominal volume index and different occupation of parents' occupation

		Abdominal volume index	occupation2
Abdominal volume index	Pearson Correlation	1	-.076*
	Sig. (2-tailed)		.016
	N	1008	1008
occupation	Pearson Correlation	-.076*	1
	Sig. (2-tailed)	.016	
	N	1008	1009

*. Correlation is significant at the 0.05 level (2-tailed).

Table 3:Correlations between body mass index and abdominal volume index

		BMI	Abdominal volume index
BMI	Pearson Correlation	1	.193**
	Sig. (2-tailed)		.000
	N	1018	1008
Abdominal volume index	Pearson Correlation	.193**	1
	Sig. (2-tailed)	.000	
	N	1008	1008

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4:Regression relation with waist hip ratio and abdominal volume index

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.000	1	.000	.084	.772[b]
	Residual	3.843	1003	.004		
	Total	3.843	1004			

a. Dependent Variable: waisthipratio

b. Predictors: (Constant), Abdominal volume index

Table 5:Correlations between abdominal volume index and conicity index

		Abdominal volume index	Conicityindex
Abdominal volume index	Pearson Correlation	1	.063*
	Sig. (2-tailed)		.045
	N	1008	1006
Conicityindex	Pearson Correlation	.063*	1
	Sig. (2-tailed)	.045	
	N	1006	1009

*. Correlation is significant at the 0.05 level (2-tailed).

Table:6 Abdominal volume index and relation with Body mass index

Model	Unstandardized		Stand	t	Sig.	95.0% Confidence Interval for B	
	B	Std.	Beta			Lower Bound	Upper Bound
Abdominal volume index	17.642	.300		58.828	.000	17.054	18.231
	.000	.000	.193	6.253	.000	.000	.000

a. Dependent Variable: BMI

Table 7: Abdominal volume index and relation with occupational types

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1	799	12637.54	2334.45	82.58	12475.43	12799.66	.000	36747.84
2	172	12609.05	2125.17	162.04	12289.19	12928.92	8.270	18790.65
3	37	11823.59	2712.24	445.89	10919.28	12727.90	.000	15314.40
Total	1008	12602.80	2317.715	73.001	12459.55	12746.060	.000	36747.84

1= skilled labour 2= unskilled labour 3= other

ANOVA

Abdominal volume index

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	23436241.179	2	11718120.589	2.187	.113
Within Groups	5385972332.050	1005	5359176.450		
Total	5409408573.229	1007			

III.Discussion: Short term longitudinal study represent that elevated body mass and BMI cause of chronic disease in early childhood.Recent data from USA shownincreased of chronic disase in adulthood due to obesity in early childhood.osteosporesis may occur in later child hood due to low body mass in childhood,in many cases environmental Childhood obesity is a significant public health problem that causes a wide range of serious complications and increases the risk of premature illness and death later in life. The interpretation of weight-based indices such as BMI needs to be based on prescriptive standardsSouth East Asian Region a large number of adolescents, who constitute 20% of the population in these countries, suffer from malnutrition and anaemia, which adversely impacts their health and development, high prevalence of under nutrition shown due to different social disparities.

Conclusion: Result presents that body mass has correlate with abdominal volume indexthat shown bodymass index increase it will increase abdominal volume index, conicity index and abdominal volume index has correlate with each other, this study done on adolescence ,so abdominal volume index increase with their age,waist hip ratio and abdominal volume index not relate each other. Occupational status doesnot relate to.

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