Determination of health status by waist –height ratio

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Abstract: Waist –height ratio is good way to measure healthy weight in comparison to body mass index.It help in assessing heart disease, diabetics, stroke, this anthropometric measurements act as alternative to measure central obesity, this ratio indicates early health risk, WHtR use as a valuable screening tool, particularly for children as young as five, who are showing initial signs of excess weight gain, and those puts them at greater risk of obesity Central

To study health status of study group This study done on Sitadihi gram panchayat of Salboni block, Paschim Medinipur, Westbengal, India

For this study 1000 adolescents girls taken as subjects, their age varies 10 years to 19 years. To measure circumferences of waist measuring tape is used, height is measured by Anthropometre rods, subjects are hindu bengalee girls.

This study done on sitadihi gram panchayat of salboni block position of excess weight has been proven to be a stronger predictor of risk of morbidity.

In this study 52.1 percentage of study girls were overweight in respect to Waist –height ratio ,9 percent of study is morbidity obese, waist –height ratio is increased with increasing age, waist-height ratio and waist hip ratio has linear relation with age,waist-height ratio has no relation with menarche.

Keywords: Health; Body mass index; Waist-height Ratio

Introduction:

Waist –height ratio is good way to measure healthy weight in comparison to body mass index.It helps in assessing heart disease, diabetics, stroke, this anthropometric measurements act as alternative to measure central obesity, this ratio indicates early health risk, WHtR use as a valuable screening tool, particularly for children as young as five, who are showing initial signs of excess weight gain, and those put them at greater risk of obesity.Central deposition of excess weight has been proved to be a stronger predictor of risk of morbidity and mortality in comparison with overall obesity, WHTr can measure life expectancy, Whtr is non- invasive screening tool for cardiovascular disease risk, Whtr<.05 is risk of cardiovascular disease,_ A study using NHANES data also shows that children from 5 to 18 years with 'healthy' BMIs exhibit raised cardiometabolic risk factors if their WHtR was above 0.5.

Objectives:

To study health status of study group

Settings

This study done on Sitadihi gram panchayat of Salboni block, Paschim Medinipur, Westbengal, India

Subjects

For this was study 1000 adolescents girls taken as subjects, their age varies 10 years to 19 years. To measure circumferences of waist measuring tape is used, height is measured by Anthropometre rods, subjects are Hindu Bengalee girls.

This study done on Sitadihi gram panchayat of Salboni block,

Height: It's length is between floor to vertex. Subject should stand erect at time of measurement and should be bare footed.

Waist circumference: The tape was placed around the subject, in a horizontal plane at the level of the natural waist, which was narrowest parts of torso, as seen from the interior aspect. The measurement was taken at the end of a normal expiration and without tape compressing the skin.

<.34= extremely slim
.42 to .48=Healthy
.49 to .53=overweight
.54 to .57= very overweight
.58=morbidity obese

Results: Body mass index are increasing with waist-height ratio, menarcheal status has negative relation with waist-height ratio which means waist height ratio not to effect menarcheal status; in respect to waist-height ratio study adolescent girls are overweight.123 girls among those study group are healthy.

Discussion: In this study 52.1 percentage of study girls were overweight in respect to Waist –height ratio; 9 percent of study is morbidity obese, waist –height ratio is increased with increasing age, waist-height ratio and waist hip ratio have linear relation with age,waist-height

ratio has no relation with menarche, Whtr does not need age ,sex ethnicity specific boundary, so it is advantage ,body mass index has linear significant relation, i.e. waist –height ratio increases with body mass index, Waist height ratio helps in detecting   early health risk.

Conclusion:
From adolescence girls should be careful of their health, under nutrition can affect their adult life, when they become pregnant they may deliver underweight children, if they are obese it may fasten their puberty but in adult life it leads to cardiovascular disease.

Table 1 Age wise Waist height ratio of adolescent

Age	Mean	N	Std. Deviation
10	.506	100	.022
11	.510	100	.025
12	.506	100	.035
13	.512	100	.033
14	.512	100	.042
15	.520	100	.052
16	.526	100	.040
17	.526	100	.044
18	.532	100	.045
19	.53	109	.042
Total	.518	1008	.040

Table 2 Correlations menarcheal status and waist-height ratio

		Waist height ratio	Menarcheal status
Waist height ratio	Pearson Correlation	1	-.092**
	Sig. (2-tailed)		.004
	N	1009	1009
Meanereal status	Pearson Correlation	-.092**	1
	Sig. (2-tailed)	.004	
	N	1009	1009

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

Table 3:Frequency of nutritional status of study group in respect to Waist-height ratio

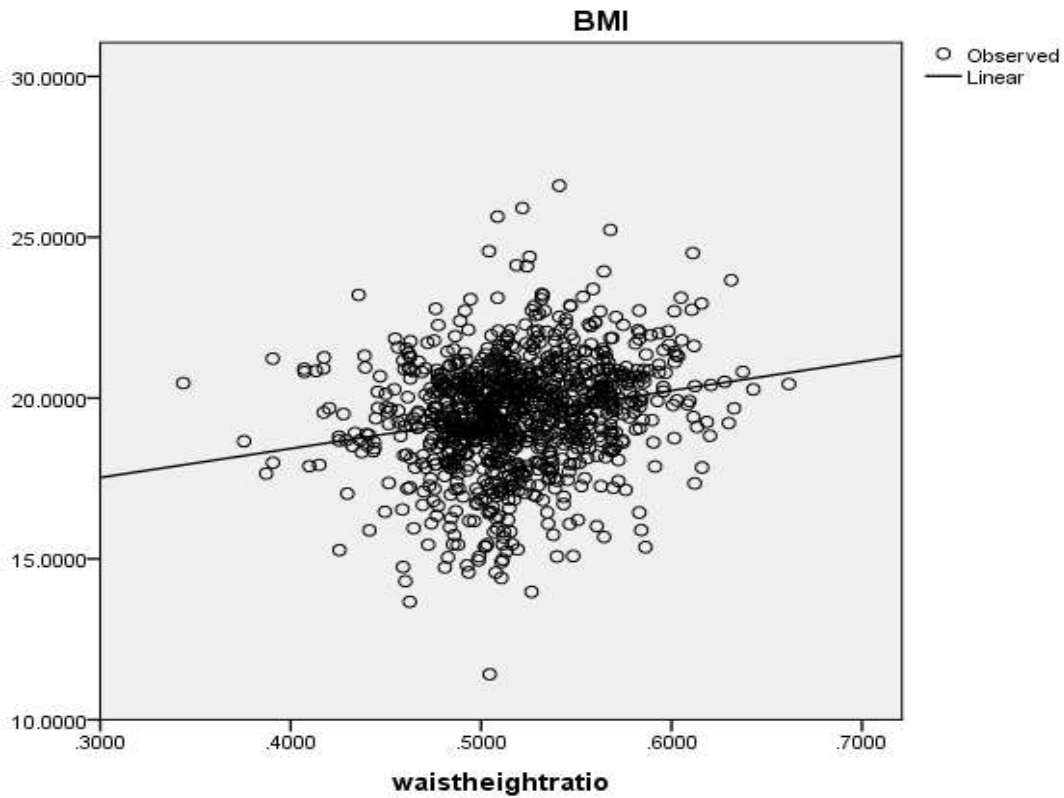|	Frequency	Valid Percent	Cumulative Percent
2.00	123	15.5	15.5
3.00	415	52.1	67.6
4.00	186	23.4	91.0
5.00	72	9.0	100.0
Total	796	100.0	
	213		
Total	1009		

.42 to .48=Healthy=2
.49 to .53=overweight=3
.54 to .57= very overweight=4
.58=morbidity obese=5

Figure 2 Body mass index and waist height ratio presented graphically

Regression analysis

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Waist height ratio	9.016	1.335	.208	6.756	.000
	14.823	.695		21.343	.000

Figure 1 Graphical presentation of waist hip ratio and waist height ratio
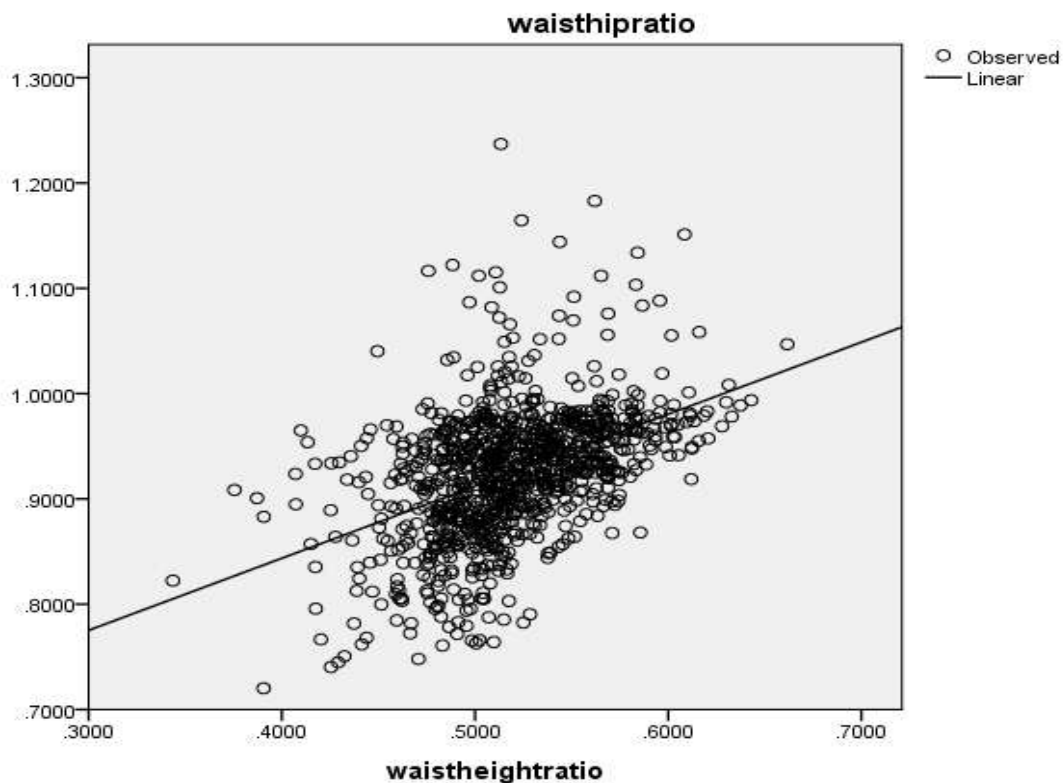
Figure 2 Roc curve represents waist hip ratio and waist –height ratio
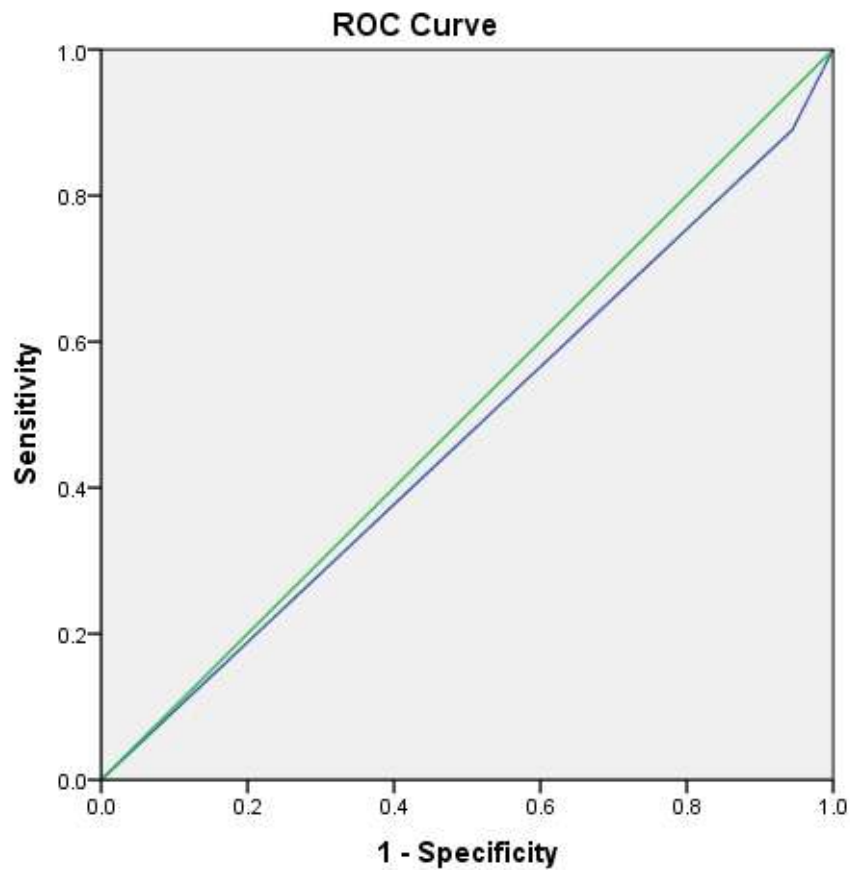
Figure 3 **Health status Frequency of study groups according to WHTR cut off**
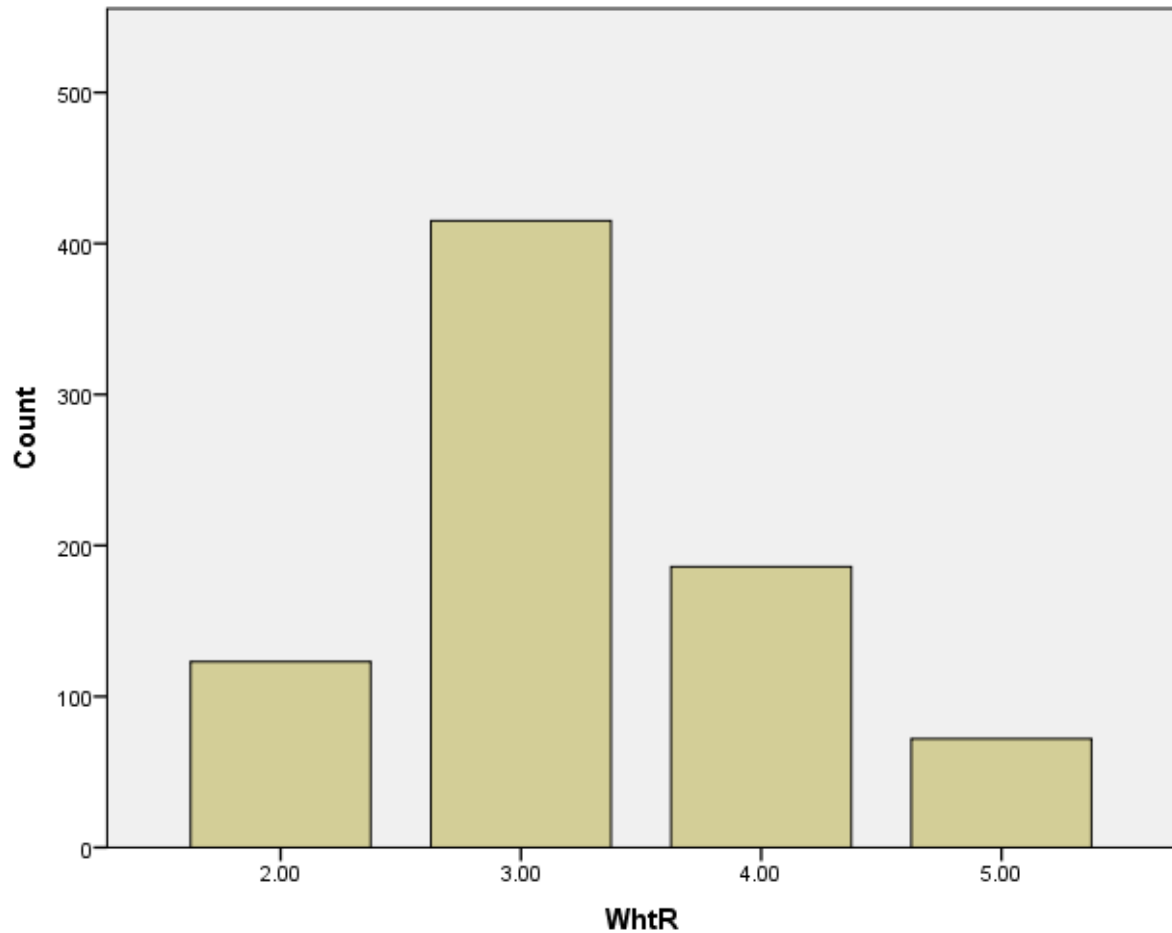
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