

Measurement of angle to which the thumb is rotated in obesity

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Abstract

Background: Pre-clinical Department and Para - clinical department has to work synchronously with the clinical Department to ease the pressure of the Clinicians. It is found out that the clinicians spend an ample amount of time in finding out the body mass index. This body mass index calculation is complex and involves finding out the height of the patient, weight of the patient and then also involves a calculation. This needs time. Some - times the clinicians rely on some non – medicos also to calculate and this leads to a lot of errors and somehow there is a confusion of whether such practices can be allowed. This study puts in an effort to find if the position of the nail of the thumb with respect to the body could help in making the rough calculation of body mass index easy. **Aims and Objectives:** To find out angle to which the thumb is rotated to stage obesity. **Materials and Methods:** One hundred twenty students were involved in this study. The students were divided into different groups based on the BMI and then the thumb rotation was measured. **Results:** The angle changes and there is a difference in the angle measured based on the position of the thumb. **Conclusion:** This is actually a good and easy way to fairly estimate the BMI of a person.

Keywords: Cross sectional, Thumb's position, Obesity.

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INTRODUCTION

Our healthcare is overburdened.^{1,2} It is found out that the clinicians spend an ample amount of time in finding out the body mass index. This body mass index calculation is complex and involves finding out the height of the patient, weight of the patient and then also involves a calculation. This needs time. Some - times the clinicians rely on some non – medicos also to calculate and this leads to a lot of errors and somehow there is a confusion of whether such practices can be allowed. Obesity leads to a lot of burden on healthcare and it leads to morbidity and mortality^{3,4,5}. There is a lot of speculation on the topics like obesity leads

to diabetes and hypertension. Tons of studies indicate the same.^{4,6,7} On the other hand there are also studies which indicate that decrease in obesity and practicing healthy life styles have led to decrease incidence of diabetes and hypertension. And it's a known fact that diabetes and hypertension leads to all sorts of organ damage on a long run thus leading to a lot of burden in the overburdened deficient healthcare system.^{8,9} This study puts in an effort to find if the position of the nail of the thumb with respect to the body could help in making the rough calculation of body mass index easy.

Aims and objectives: To find out angle to which the thumb is rotated to stage obesity.

MATERIALS AND METHODS

Study design: Cross sectional study

Study settings: This study was done in the Department of Physiology, Anna Medical College, Mangalore.

Sample size: 120

Procedure: The subjects were divided into four groups. The first group included students and staff in whom the BMI was less than 18.5 and were underweight. The second group was normal and the BMI was in the range of 18.5 to 25. The third group consisted of people who were

overweight and their BMI was in the range of 25 to 30 and the last group had BMI more than 30. The subjects were asked to stand casually and then a goniometer was used to measure the angle made by the direction of nail of the thumb with respect to the central axis of the body.

The angles were measured and then noted in an excel sheet.

Exclusion Criteria: Absentees. Those who have not consented. Any thumb deformity. Upper limb deformity.

Statistical analysis: Only descriptive statistics in the form of average with standard deviation was used.

RESULTS

Out of 120 students 100 were selected and the rest were

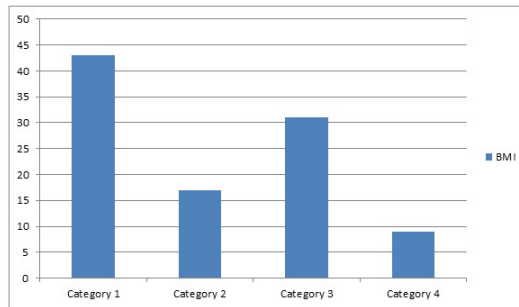


Table 1: Categories of BMI.

Table 1: BMI < 18.5

Group 1	Mean Angle	Std deviation
No - 43	111.28 degrees (External)	± 7.38 degrees

Table 2: BMI 18.5 - 25

Group 1	Mean Angle	Std deviation
No - 17	38.27 degrees	± 2.49 degrees

Table 3: BMI 25 -30

Group 1	Mean Angle	Std deviation
No - 31	91.48 degrees	± 3.96 degrees

Table 4: BMI > 30

Group 1	Mean Angle	Std deviation
No - 09	121.38 degree (Internal)	± 1.49 degrees

DISCUSSION

The Pre and Para clinical Department faculty in India are with the basic MBBS degrees and this will amount to a lot of changes in the research settings. Slowly Medical Schools around the world understand this change and there are a lot of areas in which the research in these Departments can actually be focused in betterment of the clinician's lives. One such area is focusing the research on how to implement the basic sciences knowledge in a clinical setting and this research is one such example. In

many clinical settings an assistant to the clinician is made to do such jobs. But how far this can be trusted is the issue. They are also used to take blood pressure, temperature and even respiratory rates. This is not all clinicians fault since their profession is overburdened, they depend upon these people. There are many incidences when the assistant has moved on to open up their own clinic. This is a hazard in all aspects. So this study is one such effort in focusing the research and applying the basic knowledge onto the clinical field.

CONCLUSION

This is actually a good and easy way to fairly estimate the BMI of a person and can save an ample amount of time to a practicing clinician.

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