

ASSESSMENT OF HEIGHT, WEIGHT AND BODY MASS INDEX (BMI) IN HEALTHY MALE VOLUNTEERS OF PHLEGMATIC (*BALGHAMI*) AND CHOLERIC (*SAFRAVI*) TEMPERAMENTS

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Abstract: The concept of temperament is a pillar of Unani Medicine, upon which health; disease condition of human being and the entire Unani therapeutics including diagnosis, treatment and prevention of diseases are based. But the way to determine the temperament is based on personal observations and experiences of ancient physicians, not on scientific parameter. Now, the Greco -Arab system of medicine requires the reinterpretation and research of the temperament determination on scientific parameter.

This study was conducted in the department of *Kulliyat*, Dr. Abdul Ali Tibbiya College & Hospital, Katauli Malihabad Lucknow, to estimate and compare the height, weight and body mass index (BMI) in healthy male volunteers of Phlegmatic (*Balghami*) And Choleric (*Safravi*) Temperaments. A total of Sixty (60) healthy male students participated in the study. Height was significantly higher in the persons of Choleric Temperaments as compared to the Phlegmatic Temperament ($p < 0.020$) while weight and BMI were higher in Phlegmatic than Choleric individuals and it was highly significant ($p < 0.001$).

Keywords: Body mass index, Choleric, Phlegmatic, Temperament, Unani Medicine.

1. INTRODUCTION

Temperament is a basic conception of Greco-Arab system of medicine, there is a direct relationship of the temperament with the personality of the individuals, diseases, drugs, and seasons as well as in the treatment of ailments. That is why scholars of Greco-Arab system of medicine heavily stressed on temperament, and tried their best to assess it with the help of “Ten Determinants of temperament” or *Ajnas-e-Ashra* [4] Body Shape (*Hayat-e-Aza*) is the most important parameter among the *Ajnas-e-Ashra*, because this, not only completely reflects the temperament but also directly help in its assessment. Several parameters, comprises various morphological, physiological and psychological features are described by Unani physicians through that the temperament of individuals is diagnosed to be applicable clinically. According to Unani system of medicine, the Choleric individuals, having hot and dry temperament, are thin with good height; their body structures are not ideally shaped.^[1,2] The phlegmatic people, having cold and moist temperament, are fatty and flabby with rounded face and average height^[2,5,6] Galen has mentioned that people with hot and dry temperament are thin with good height while with cold and moist temperaments are flabby and fatty. The excess of bile result thin and emaciated body and excess of blood is responsible for beautiful face and jolly nature. [7] **Jurjani** described that obesity is of two types, one due to excess of flesh another due to excess of fat. The

temperament of first type obesity is hot and wet while second type of obesity denotes cold and wet temperament. The leanness is also of two types, one due to less flesh and second is due to less fat the body which have less flesh is an indication of cold and dry temperament. [3]

In modern time, BMI is a measurement of a person's leanness or corpulence based on their height and weight, and is intended to quantify tissue mass. It is widely used as a general indicator of whether a person has a healthy body weight for their height. Specifically, the value obtained from the calculation of BMI is used to categorize whether a person is underweight, normal weight, overweight, or obese depending on what range the value falls between, as shown in table 1 according to the World Health Organization (WHO).

However, all parameters, described by Unani physicians, to assess the temperament, are based on personal observations and experiences of ancient physicians, not on scientific parameter. Now, the Greco -Arab system of medicine requires the reinterpretation and research of the temperament determination on scientific parameter. So the researcher has conducted this study to estimate and compare the height, weight and body mass index (BMI) in healthy male subjects of Phlegmatic and Choleric Temperaments.

2. RESEARCH METHODOLOGY

This study was carried out in the department of *Kulliyat*, Dr. Abdul Ali Tibbiya College & Hospital, Katauli Malihabad Lucknow. For the present study, sixty (60) healthy male volunteers, having Phlegmatic and Choleric temperaments were randomly selected. Inclusion criteria were healthy male volunteers of Phlegmatic and Choleric temperaments in the age group of 18–30 years. Exclusion criteria were volunteers of age <18 or >30 years old, presence of skeletal deformity, a history of Radiotherapy, Chemotherapy, major accident and surgery or taking steroids for long period and chronic disease. Written consents were obtained from the participants before entry into the study.

2.2. DETERMINATION OF TEMPERAMENT

The assessment of the temperament (*Mizaj*) of the volunteers was made on the basis of a self designed performa (questionnaire) prepared in the light of criteria, described in classical Unani literature i.e. ten determinants (*Ajnas-e-Ashra*) [4]. The Performa of the temperament was given in the tabulated form to the volunteers.

2.3. CATEGORIZATION OF INDIVIDUALS

After determination of the temperament, selected volunteers were divided into two groups according to their temperament.

Group A: Choleric Teemperament (*Safravi Mizaj*)

Group B: Phlegmatic Temperament (*Balghami Mizaj*)

After categorization of volunteers, the height and weight of each volunteers were measured using standardized height and weight scales. The body mass index (BMI) was calculated for each student as weight (in kilograms) divided by square of height (in meters) [8]. To reach at the inference of the present empherical investigation, the researcher sequentially arranged the raw data into a tabular format and go through description statistical analysis to know the mean [9] and standard deviation [10] followed by t-test [11] for testing the statistical difference between the groups of Phlegmatic (*Balghami*) and Choleric (*Safravi*) Temperaments, in relation to the height, weight and BMI. Statistical significance was accepted for $p < 0.05$.

3. RESULTS AND DISCUSSION

Results of the study are explored here:

The mean value of age in Choleric volunteers was found 25.40 years and in Phlegmatic volunteers was found 26.07 that was insignificant(.458), as shown in Table-02 and Fig.01.

Present study revealed that height was significantly higher in Choleric than Phlegmatic individuals (<0.020) as given in the Table-02 and Fig.01. The result favors Unani concept which says that Choleric individuals are tend to have long stature in comparison to Phlegmatic temperaments. Now this may be concluded that Choleric and Phlegmatic individuals are not similar in height. Therefore height may be used as a parameter for differentiating the Choleric from Phlegmatic temperament.

In this study weight of volunteers was also observed and the data provided for the study revealed that its mean value was 63.06 (k.g.) in volunteers possessing Choleric temperament when volunteers of Phlegmatic temperament had 87.12 (k.g.). After statistic analysis the researcher came to the conclusion that weight variation between Phlegmatic and Choleric individuals was highly significant (<0.001) as shown in Table-02 and Fig.01. The result is completely in accordance with the Unani concept which says that Phlegmatic individuals are much heavy weight individuals than others due to excess of fat. Therefore weight may be used as a parameter for differentiating Choleric and Phlegmatic individuals to each other.

Present study explored that the mean values of body mass index (BMI) were 20.60 kg/m^2 and 29.40 kg/m^2 in the volunteers of Choleric and Phlegmatic temperaments respectively. It was also observed that BMI was normal in Choleric while, it was in overweight category in phlegmatic temperament according to the parameter of WHO as shown in table 01. Statistical analysis revealed that difference of BMI between Choleric and Phlegmatic temperaments was highly significant (<0.001) as displayed in Table-02 and Fig.01. Now this may be concluded that Phlegmatic individuals differ from Choleric individuals in case of body mass index (BMI), therefore BMI may be used as a parameter for differentiating Phlegmatic from Choleric individuals.

4. CONCLUSION

The researcher came to the conclusion that Weight and BMI variation between Choleric and Phlegmatic individuals was highly significant while height variation between them was also significant. Therefore height, weight and BMI values may be used as a parameter for differentiating Choleric and Phlegmatic individuals to each other.

Table: 1

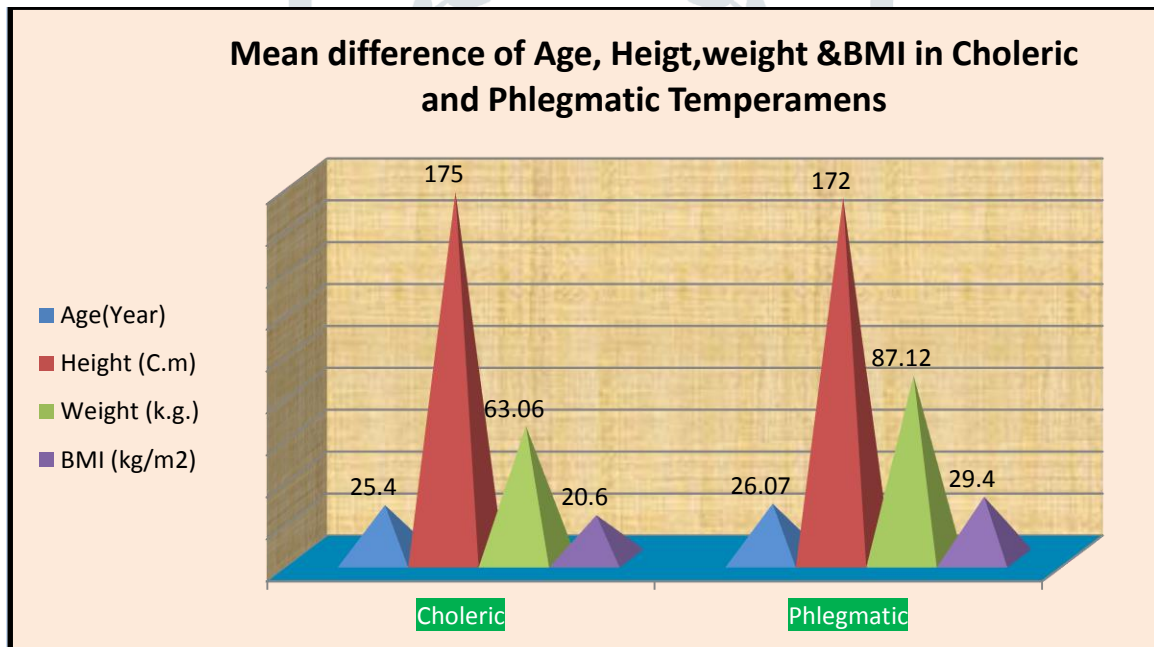
Classification of obesity by body mass index (BMI) according to The World Health Organization (WHO)

S.NO.	Category	BMI range - kg/m^2
1	Severe Thinness	< 16
2	Moderate Thinness	16 - 17
3	Mild Thinness	17 - 18.5
4	Normal	18.5 - 25
5	Overweight	25 - 30
6	Obese Class I	30 - 35
7	Obese Class II	35 - 40
8	Obese Class III	> 40

Table: 2

Comparison between Choleric and Phlegmatic subjects in the study group

Parameter	Temperaments	Mean	S.D	P value
Age (Year)	Choleric	25.40	3.60	.458
	Phlegmatic	26.07	3.35	
Height (cm)	Choleric	175	5.35	<0.020
	Phlegmatic	172	4.39	
Weight (kg)	Choleric	63.06	4.50	<0.001
	Phlegmatic	87.12	4.58	
BMI (kg/m ²)	Choleric	20.60	2.36	<0.001
	Phlegmatic	29.40	4.86	

Fig-01**REFERENCES**

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