ASSOCIATION OF PRAKRITI WITH ANTHROPOMETRY OF NON-TEACHING STAFF FROM COLLEGES IN MUMBAI, MAHARASHTRA.

Ayurveda

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ABSTRACT

BACKGROUND – Ayurveda is distinguished from other medical sciences by its principles of Prakriti based individualized treatment. Prakriti has an influence on the physical, physiological & psychological characteristics. Anthropometry have a long history of assessing nutritional and health status. Thus, this study can set an information background for integrating Ayurveda with modern medicine. **AIM AND OBJECTIVES** - To study the possible association of Prakriti with anthropometry of non-teaching staff from colleges in Mumbai, Maharashtra. **METHOD** – An observational study was conducted wherein participants were selected using purposive sampling. Non-teaching staff from colleges between age 20 to 60 years, willing to participate were included in the study. Information about the demographic data, certain physiological, physical and psychological characteristics for the assessment of prakriti were taken, followed by the anthropometric measurements and body composition analysis. **RESULTS** – The participants of Kapha dominant prakriti had significantly higher Body mass index ($p=0.000$), Body fat ($p=0.000$), Visceral fat ($p=0.000$), Basal metabolic rate ($p=0.000$), and muscle mass ($p=0.000$) compared to other prakriti groups among both genders. Body water was observed to be higher in Vata group in both genders, however the values were in a normal range. Conclusion - Prakriti has an influence on the anthropometric and body composition measurements of an individual. Prakriti assessment is a simple, inexpensive method to identify the individuals who are predisposed to nutritional problems which in turn is responsible for various diseases, where prakriti based individualized treatment and management can pose more benefit.

KEYWORDS

Nutritional Status, Prakriti, Ayurveda, Integrative Medicine, Anthropometry, Body Composition

INTRODUCTION

Every science has its own source of origin, philosophy and principles. Ayurveda uses a unique classification system based on individual constitution at birth, or prakriti which forms the basis of the personalized medicinal approach in the Ayurveda system. The prakriti of an individual is determined by the 3 doshas – Vata, Pitta and Kapha the characteristic of each dosha are unique as they have properties similar to the elements that are predominant in them. Any imbalance in the natural level of any of the three doshas confers a risk of developing a health disorder or disease. Deficiency or excess of dosha would increase the chance of manifestation of the disease or disorder linked with that dosha. For example, an individual of pitta prakriti has moderately built body frame, is said to be more susceptible to develop hypertension, ulcers, and skin diseases, whereas vata prakriti individuals have a thin body frame and are susceptible to backache, joint aches while individuals with kapha prakriti have a well-developed body frame and may manifest respiratory disorders, obesity and atherosclerosis. (Katwal et al., 2017) Ayurveda is often referred to as the "science of longevity" as it provides a structure of healthy living through holistic approach including diet & nutrition. It believes that healthy and wholesome food nourishes the mind, body and soul.

Nutritional status helps to determine the susceptibility of various diseases. Anthropometry and body composition analysis have a long history of assessing nutritional and health status. Prakriti concept not only defines person in terms of physical characteristics but also their physiological framework, and these characteristics have an influence on the nutritional status as well. The influence of diet on the nutritional status is well known but the influence of Prakriti on this nutritional status is unknown and thus assessed in this study via association of anthropometry and body composition with prakriti. It will brief idea about which prakriti type has more chances of obesity, undernutrition and other nutrition related problems, which in turn will determine the problems or diseases one may suffer in the near future.

Nutrition and human health are intimately interconnected, if one part is neglected the later suffers. Health of a person is determined by their nutritional status. And thus, association of Prakriti with nutritional status will further provide more clarity on prakriti based

manifestations and help rule them out and take precautions in advance. It is the need of the hour as there is lack of scientific data on this topic and this study certainly will help to bridge the gap between the two disciplines.

MATERIALS AND METHODS

This study was conducted in SNTD campus, Mumbai, Maharashtra. The ethical clearance was taken from ISBEC (Intersystem Biomedica Ethics Committee) in December 2019. This project was an observational study with a sample size of 90 selected via purposive sampling.

Inclusion criteria

- The non-teaching staff of colleges in SNTD campus
- Age 20 to 60
- Both genders

Procedure

A structured questionnaire was used in the study to obtain the information.

Case record form that included the demographic data which included medical history, age, medications & family history; certain physiological, physical and psychological characteristics for the assessment of prakriti in the standardized Prakriti assessment tool (prepared by KHS – MRC) was made and administered. Anthropometric measurements like height, weight, waist circumference (WC), hip circumference, and BMI were taken. The body composition analysis which measured the basal metabolic rate, body fat, muscle mass, body water was done using Tanita innerscale machine.

Statistical analysis

The statistical analysis was performed with the SPSS (Statistical package for social sciences) software version 25. Descriptive statistics including mean scores and standard deviations were computed for all variables. Pearson's Chi Square test was used to compare the frequency distribution of Anthropometric and body composition variables across the 3 Prakriti. P value of <0.05 was considered to be statistically

significant for all the analysis.

RESULTS

The study sample consisted of 90 participants (female: 54, male: 36). Pitta dominant prakriti participants were found to be more prevalent i.e. 42% whereas Vata and Kapha dominant participants were 30% & 28% respectively.

TABLE – 1 Baseline characteristics of participants

Particulars	N(%)
Gender	
Male	36(40)
Female	54(60)
Diet	
Vegetarian	17(19)
Non vegetarian	71(78)
Ovo- vegetarian	2 (2)
Food allergy	
Present	2(2)
Absent	88(98)
Comorbidity	
Metabolic	10(11)
Bone	1(1)
Chronic	0
Hormonal	1(1)
None	78(87)
Dominant Prakriti	
Vata	27(30)
Pitta	38(42)
Kapha	25(28)

The mean age was found to be 37.6 ± 11.03 . The mean of height and weight of participants are 157.17 ± 7.49 cm and 61.11 ± 11.76 kg respectively.

TABLE 2 - Association of prakriti with anthropometry and body composition

Variables	Mean $\pm$ SD			F value	P value
	Vata	Pitta	Kapha		
BMI	21.85 $\pm$ 2.24	23.57 $\pm$ 5.03	28.34 $\pm$ 4.39	16.731	.000
WHR	0.86 $\pm$ 0.76	0.86 $\pm$ 0.73	0.90 $\pm$ 0.82	7.522	.001
BMR	1078.81 $\pm$ 121.58	1207.16 $\pm$ 164.89	1483.88 $\pm$ 162.14	47.919	.000
Body fat	27.88 $\pm$ 7.94	31.02 $\pm$ 7.66	30.02 $\pm$ 8.62	1.221	.300
Body water	52.76 $\pm$ 5.83	50.59 $\pm$ 5.61	50.43 $\pm$ 6.83	1.306	.276
Muscle mass	34.68 $\pm$ 4.59	38.91 $\pm$ 7.22	47.66 $\pm$ 7.05	26.907	.000
Bone mass	1.98 $\pm$ 0.328	2.23 $\pm$ 0.344	2.76 $\pm$ 0.279	39.679	.000
Visceral fat	4.85 $\pm$ 2.214	7.24 $\pm$ 3.907	11.96 $\pm$ 3.422	30.361	.000

BMI: Body mass index, WHR: Waist hip ratio, BMR: Basal metabolic rate SD: Standard deviation

DISCUSSION

Kapha prakriti exemplifies significantly higher BMI, BMR, Bone mass Muscle mass and Visceral fat ($p < 0.05$) as compared to Vata and Pitta in participants of both genders. Studies stated similar findings that Kapha dosha is associated with higher amount of fat molecules and higher BMI and BMR was observed in Kapha -Pitta as compared to Vata -Pitta. C. et al., 2018.3 Studies demonstrated metabolic differences attributed by prakriti and concluded that pitta prakriti are fast metabolizers and kapha ones are slow. Ghodke et al., 20114 Body water was significantly higher in the Vata group. Significant difference was observed in all the anthropometric variables among all the 3 prakriti groups in both the genders except for body fat and body water. Studies signified that fat (i.e. cholesterol and triglycerides) are higher in Kapha prakriti while serum protein was found to be higher in the Vata prakriti Amin et al., 20151 Vata prakriti is ectomorphic, Pitta is mesomorphic and kapha is endomorphic. Rizzo 20116 Significant difference was observed between the BMI, Body fat and Visceral across the 3 prakriti (< 0.05). Prakriti has an influence on the anthropometric and body composition measurements of an individual. Studies suggest similar views i.e. Dosha dominant Prakriti

has an influence on the biochemical and anthropometric parameters of patients with diabetes. Amin et al., 20151

CONCLUSIONS

Prakriti has an influence on the anthropometric and body composition measurements of an individual. Thus, Prakriti assessment is a simple and inexpensive method to identify the individuals who are predisposed to nutrition related problems like obesity, undernutrition etc, which in turn will determine the problems or diseases one may suffer in the near future and preventive steps can be taken.

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