



## ASSESSMENT OF FOOD CRAVINGS DURING MENSTRUAL CYCLE IN YOUNG COLLEGE WOMEN.

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**ABSTRACT** The awareness of food cravings that occurs during menstrual cycle in young women and the underlying causes is unknown by most of the individuals in the growing population. The study aims to assess the anthropometric measures, food cravings and the quality of life during menstrual cycle among 100 college going students of the age group of 18 to 23 years. The pre-designed questionnaire was developed to obtain accurate information. The findings show that during menstrual cycle, 81% experienced food cravings always, with a more liking towards sweet (40%) and spicy (34%) foods. There was a significant relation ( $p < 0.05$ ) between the number of meals consumed and the food cravings, but no significant relation ( $p > 0.05$ ) between the BMI and the quality of life. In conclusion, the food cravings had no effect on the anthropometric measures and the quality of life of the study population during the menstrual cycle.

**KEYWORDS :** Food Craving, BMI (Body Mass Index), Anthropometric Measures, Quality of Life.

### INTRODUCTION

Many women of the reproductive age experience some kind of pre-menstrual syndrome (PMS) which may include emotional, physical, cognitive and behavioural symptoms and some experience change their eating habits during the phases of menstrual cycle. Food cravings is an intense desire that a woman gets during menstrual cycle for a specific kind of food which may be uncontrollable and the women's hunger might not be satisfied until they eat that particular food. Food cravings are often for junk food and processed foods high in sugar, salt and fat, leaves a mental imagery on the persons mind, which makes the person to visualise the food before even consuming it.

Changes in food intake and cravings in women are related to the fluctuations in the hormones during menstrual cycle, in which, women experience change in appetite and size of the meals, change in type of macronutrient consumed, selection of the food, food cravings and compulsions of certain foods. These are influenced by the serum levels of the sex hormones during menstrual cycle.<sup>[1]</sup> These kind of changes in food intake are associated with the changes in the hormonal levels in the body. The cyclic fall in the estrogen and progesterone induces the craving and the main hormones associated with these kind of food cravings are the cortisol and the serotonin.

The changes in the food intake has an impact on the anthropometric measures. It could lead to insufficient or excess sleep and could promote the intake of the foods in excess amount until the satisfaction of eating the craved food is fulfilled, predominantly can lead to over eating causing obesity in women. Feeling of hunger and inadequate satiety can also lead to the consumption of excess amount of high calorie foods which in turn leads to the difficulty of maintaining a healthy diet. Longer food deprivation and starvation can also lead to food cravings during the pre-menstrual period. Hence a need was felt to study the food cravings which occurred during the menstrual cycle among the young college women.

### AIM

Assessment of food cravings during menstrual cycle in young college women.

### OBJECTIVES

1. To assess the anthropometric measures of young college women.
2. To find out the food cravings during the menstrual cycle of study population.
3. To analyse out the quality of life during the menstrual cycle.

### METHODOLOGY

#### RESEARCH DESIGN

The first phase of the study included the review of literature. The most updated and current information was collected. The second phase involved development of questionnaire which was used for data collection by a phenomenological approach. The data was collected in 2019 by purposive sampling technique from 100 college going

women.

### STUDY DESIGN AND STUDY AREA

The study was conducted in Mount Carmel College, Autonomous which is one of the reputed women colleges located in Bangalore, Karnataka.

### SELECTION OF SUBJECTS AND SAMPLE SIZE

A purposive sampling technique was employed to enroll students (N=100) of Mount Carmel College of the age group of 18 – 23 years and those who experienced food cravings during menstrual cycle.

### STUDY TOOL

#### Self-administered questionnaire

A self-administered questionnaire schedule consisting of a set of 40 questions with a combination of multiple choice and scaling questions were administered. These questionnaires were given to individuals who experienced food cravings during menstrual cycle.

#### Components of questionnaire

The questionnaire consisted of a demographic profile which included the age, date of birth, place of stay and mode of transport. The components of the questionnaire included the anthropometric measures, reproductive history, dietary patterns and food cravings and the lifestyle and the quality of life to get a keen understanding about the study participants.

Anthropometric measures include weight, height and BMI to assess the nutritional status. The reproductive history included the age of menarche, the regular period patterns, symptoms, the duration of the menstrual flow and the rate of flow. The dietary pattern and food cravings included the food habits and the regular meal patterns of the individuals. It also examines the food cravings, the type of food cravings, the duration and the solution that people take during food craving and certain related perceptions regarding the food cravings. The lifestyle and the quality of life determines the well-being of the individual which includes the data related to medical history, physical activity, satisfaction of the health, life and the physical environment.

### PROCEDURE

**PHASE 1:** Self-administered questionnaire was handed over to students and to prevent errors the respondents were given enough time to answer the questions.

**PHASE 2:** The administered questions were collected and the data obtained were recorded for statistical analysis and interpretation to establish relationships between chosen parameters for drawing conclusions from results.

### RESULTS AND DISCUSSION

#### DEMOGRAPHIC PROFILE

The age of study subjects ranged from 18 to 23 years. Out of total, 42%

of the study subjects belonged to the age group of 20 to 21 years, whereas 30% belonged to 22 to 23 years of age and 28% belonged to 18 to 19 years of age. Among the study subjects, 67% of the participants were residents at home, 25% lived in paying guests and 8% of them resided in hostels. Almost 36% of the total population commuted by walk, 34% of them travelled by bus and 15% of them commuted by auto and 15% of them used other means of transportation.

#### ANTHROPOMETRIC MEASUREMENTS

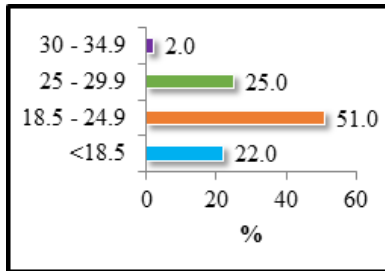


Figure 1: Body Mass Index (BMI) of the study respondents.

It was noticed that half (51%) of the study population had a normal BMI of about 18.5 – 24.9 kg/m<sup>2</sup>. The study shows that equal amount of the study population, either belonged to the underweight (22%) or the overweight (25%) category. It was noted that only 2% of the study population were obese with the BMI ranging from 30 – 34.9 kg/m<sup>2</sup>.

A study which was conducted, stated that the higher BMI was associated with reduced liking for average food and trend-level liking for fattier foods.<sup>[3]</sup>

#### REPRODUCTIVE HISTORY

The majority (97%) of the study population had regular periods of 12 months in a year, while only 3% of them had irregular periods. The usual intervals between the periods was seen, between 28 to 32 days in maximum (62%) study population, while only in 7% of the population the interval between periods were more than 32 days. The rate of menstrual flow among 86% of the population were observed to be a medium flow, in contrast, only 7% of them had light or heavy menstrual flow. The duration of menstrual flow in maximum (53%) of respondents were observed to be for 4 to 6 days and only 8% of them had menstrual flow for more than 6 days. A retrospective study conducted on 130 women states that the average menses of the participants was estimated as 29.1 to 35 days. The average length of menses was 5.2 days. It was noted that the average length of menses was associated with the average actual cycle length. Forty six percent of all the study population had a cycle range of 7 days or more and 20 % of the study population had a cycle range of 14 days or more. The average length of menstrual flow is  $5.2 \pm 1.0$  days.<sup>[2]</sup> The similar trend has been noted in the present study

#### DIETARY PATTERN

Table 1: Influence of dietary pattern on food cravings during menstrual cycle

DIETARY PATTERN (N = 100)		PERCENTAGE (%)	SIGNIFICANCE
Food habits	Vegetarian	18	0.606 <sup>NS</sup>
	Non-vegetarian	80	
	Ovo-vegetarian	2	
Regularity of meals	Yes	46	0.951 <sup>NS</sup>
	No	29	
	Sometimes	25	
Number of meals per day	1-2 meals	14	0.002 <sup>*</sup>
	3-4 meals	83	
	5-6 meals	3	

NS (Not significant) =  $p > 0.05$   
 $< 0.05$

S\* (significant) =  $p < 0.05$

Based on the data collected, it was observed that 80% of the study population consumed non vegetarian food. Almost 46%, followed a regular meal pattern and followed good eating habits. A regular meal pattern was not followed by 29% and 25% followed a meal pattern sometimes. It was noted that maximum (83%) consumed 3-4 meals per day, while only 3% of them consumed 5-6 meals per day. Statistical significance ( $p < 0.05$ ) was observed with respect to influence of number of meals on the food cravings, wherein consuming 3-4 meals per day increased their cravings as compared to those who had only 2 meals or 6 meals per day. There was no significant relation ( $p > 0.05$ ) between the regularity of meal pattern and the food habits followed by the study population.

#### FOOD CRAVINGS

Table 2: Food Cravings

FOOD CRAVINGS (N = 100)		PERCENTAGE (%)
Experience cravings	Yes	81
	No	18
	Sometimes	1
Start of cravings	2-3 days prior menstrual cycle	44
	During menstrual cycle	50
	After menstrual cycle	6
Kinds of cravings	Sweet	40
	Sour	13
	Spicy	34
	Salty	4
	All of the above	9
Duration of cravings	Few minutes to hours	30
	1 – 2 days	41
	2 – 4 days	23
	4 days and more	6
Solution for cravings	Eating the craved food	75
	Thinking about the food	16
	Avoiding the sight of the food	9

Data presented in the table (2) depicts the food cravings experienced by the study population during the menstrual cycle. Among the total, 81% of them always experienced food cravings and 19% of them experience food cravings sometimes during menstrual cycle. Fifty percent of the study population experienced food cravings during the menstrual cycle and 44% of them experience food cravings 2 to 3 days prior to menstrual cycle and the least (6%) of them experience after the menstrual cycle. Majority (40%) of them craved for sweet food and 34% of them for spicy food. The duration of food cravings lasted for 1 to 2 days in 41% of the population, and in 6% of population had food cravings for 4 days or more during the menstrual cycle. The solution taken for food cravings among the study population was noted to be that majority (75%) of them ate the craved food, while 9% of them avoided the sight of the craved food. A comparative study was conducted on women to analyze the experience of food cravings during period and observed that cravings were seen in at least 2 women in a week for highly pleasant food using the food craving record. Cravings for chocolates and sweet food also was craved by majority due to its creamy texture, good memory association and its bitter sweet flavor.<sup>[4]</sup> A similar result was seen in the current study also, regarding the cravings for sweet food during menstrual cycle.

In another study, 72.5% of them also told that there is no food other than the craved food when consumed would satisfy their cravings, and most participants responded that 50 % of the time, they will follow their cravings and eat the craved food which is a solution taken to

satisfy the food cravings.<sup>[6]</sup> In the present study also, the respondents felt that eating the craved food was the solution taken for food cravings.

### LIFESTYLE AND QUALITY OF LIFE

It was noted that 57% of the population indulged in physical activity and 32% of them did not take part in any kind of physical activity. Among the total, 56% of them exposed themselves to sunlight for at least 30 minutes per day and 73% of them did not consume nutritional supplements. Nine percent of the respondents made use of weight control measures and minimum (4%) of the population had the habit of drinking and smoking.

The significant effect of physical activity on menstruation, states that performing regular physical activity everyday significantly reduces the type of drugs consumed, number of drugs consumed, volume of bleeding, length of bleeding and length of menstrual pain and total and present pain intensity.<sup>[5]</sup>

### CONCLUSION

It has been recognised that majority of the study population experienced food cravings during menstrual cycle, the craving for high caloric foods was observed to increase during the menstrual periods. The subjects consumed the craved food as a solution for food cravings. The food cravings did not have any impact on their quality of life and the lifestyle. There was also no significant observation in the BMI of the study population. Hence from the study we can conclude that the food cravings did not affect the BMI and the quality of life of an individual.

The study suggests that a heterogenous population will help to find out the correlation between the anthropometric measurements with the food intake and food cravings experienced during menstrual cycle and would also give more insight on the food cravings and the reproductive age disturbances in women.

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