



## Food habits and nutritional profile of menopausal women: A study in urban area

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### Abstract

Menopause is one of the most challenging period for every women. Balanced diet and healthy life style has a great bearing on their future health. The objectives of the present investigation was to study the food and nutrient intake of the menopausal women and to assess their health status. The study was carried out in Bhubaneswar city of Odisha. One hundred peri and post menopausal women belonged to 40-65 years of age group were selected by random purposive sampling method. The data was collected by interview method with the help of structured and validated questionnaire. Diet survey was done with the help of 24 hours recall method. Height and weight of the respondents was measured with the help of required tools and BMI was computed. The results of the study revealed that majority of the respondents belonged to the age group of 45-55 years having mean age at menopause was  $47.6 \pm 5.36$ .

59% of them were homemakers and belonged to middle income family. Majority of them were non vegetarians and preferred fried food. Actual mean food and nutrient intake of the respondents was found to be more than RDA which may be due to their eating habits and economic status. BMI of the respondents showed that 48% were overweight and 8% were obese. Health problems like Thyroid, High Blood Pressure, Bad Cholesterol and obesity etc. was found among majority of the respondents. Thus regular exercise, health monitoring and nutrition education is highly essential for middle age women to prevent future health complications.

**Keywords:** menopause, BMI, nutrition education, RDA

### Introduction

Menarche and menopause are most challenging periods of every women's life. Menarche starts in puberty with secretion of estrogen and progesterone followed by maturation of ovum and release of egg where as menopause referred permanent cessation menses. It is considered as the most critical biological event in the body which arrest menstruation, ovulation and reproductive function. Due to hormonal disturbances there it is lot of health complaints such as hot flashes, sleeplessness, restlessness, decreased memory, hypertension, bad cholesterol etc. but it varies from one another. Activities of serotonin, acetyl-chorine and nor - epinephrine in menopausal women are decreased which may lead to depression. With the advances in medical science shifting from population control to facing consequences of population ageing became a social issue at present. Older segment of population is increasing which is dominated by women. By the age of 85 the men and women ratio is (45:100). As the women has to spent one third of her life after loss of endogenous reproductive capacity, she should learn, prepared and motivated how to face the end part of her life with greater health & vigor. Keeping in view of the above facts, the present research is designed to study the nutritional profile of menopausal women which has a great bearing in the future prospect of her life.

The objectives of the present research were -

- To study the socio-demographic profile of the respondents
- To know the eating habits and food preferences of the studied sample.

- To study food and nutrient intake of the respondents
- To study nutritional status of the respondents with the help of BMI.
- To study health problems of the respondents by clinical examination

### Research Methodology

The study was carried out in Bhubaneswar City of Odisha. One hundred women belonged to age group of 40 - 65 years who had attained menopause were selected by random purposive sampling method for the present study. The data was collected with the help of pretested and predesigned questionnaire. Diet survey was done by 24 hours recall method. Quantities of cooked food consumed were than converted into raw equivalents for each food and compared with balanced diets recommend by ICMR. Nutrients contributed by these raw foods were calculated with the help of NIN Food Table & Compared with RDA given by ICMR (Indian Council of Medial Research). The height and weight of the respondents was measured with the help of measuring tape and weighing machine respectively and BMI was calculated. The results of the present study were statistically analyzed, tabulated and discussed under various heads.

### Results and Discussion

#### 1) Socio - demographic Profile of the respondents

Results on socio-demographic profile of the respondents revealed that majority of the respondents belonged to the age group of 45-55 age having a mean age at menopause  $47.6 \pm$

5.36. The mean age menarche mean age at first child, mean age of peri menopause were found to be  $12.78 \pm 8.6$ ,  $16.56 \pm 10.3$ ,  $43.26 \pm 12.11$  respectively. 69% respondents were married, 8% were divorced, 12% widower & 11% were unmarried. Majority (59%) of them were home makers, 33% were working women & 8% were business women and all of them were literate. 46% of them had natural menopause. Nuclear family system having middle family income status was found to be prevalent among majority of the respondents. Dakshayani et.al. (2007) [6] found out that mean menopausal age of Iruliga Tribal Women was  $46.63 \pm 0.53$  years. Majumdar (2001), Biswasand Kapoor (2003) reported that malnutrition, low socio-economic factors, rural urban residence are possible determining factors for menopausal age of women.

## 2) Food habits and food preferences of the respondents

Data on eating habits of the respondents showed that majority (69%) of the respondents were non vegetarian and were taking 3 to 4 meals per day. It was interesting to note that 32% of the respondents skipped breakfast, 64% respondents were found to skip snacks and used to take only tea or coffee at that time. Data on food likes & dislikes showed that 56% of them liked sweet foods followed by sour (18%) food. Roasted and fried food was found to be preferred by 28% and 42% respondents respectively. 22% respondents found to prefer boiled food and 8% liked baked food.

## 3) Food and Nutrient Intake

The distribution of food and nutrient intake of the respondents in comparison to RDA is discussed below:

The data on food intake of respondents showed that cereal & millet consumption was more than RDA in 60% respondents. The actual mean consumption of cereal was found to be  $369.82 \pm 21.36$  which 12.07% excess in comparison to RDA. Parboiled rice, wheat and Ragi was their staple food. Pulse consumption was found to be less than RDA in 48% respondents and actual mean consumption was 68.75%. which is 8.33% less in comparison to RDA. Leafy vegetables and other vegetables consumption was to be excess by 8.32% & 28.61%. Milk & milk product was found to be less than RDA by 0.995%. Main source of milk was in tea and coffee. However a positive trend of regular consumption of milk and milk products, leafy vegetables and other vegetables was found in this study which may be due to family income and education level of the respondents. Due to health consciousness, the roots and tubers, fats and oils, sugar and jiggery consumption was found to be less than RDA i.e. 8.11%, 04.28% and 35.73% Regular consumption of fruit was found only in 10% respondents. Rest of the respondents consumed fruits as per availability. Even though 69% respondents were non-vegetarian only 38% respondents were found to take non-vegetarian foods on regular basis.

**Table 1:** Mean Food intake of the respondents

Sl. No.	Food Stuffs	Less than RDA	Equivalent to RDA	More than RDA	Actual Mean Food Intake	Balanced Diet for Moderate Worker RDA	% of deficiency or Excess
1	Cereals & Millets	36	04	60	$369.82 \pm 21.36$	330	12.07+
2	Pulses	48	30	22	$68.75 \pm 11.26$	75	8.33-
3	Milk & Milk product	18	11	71	$198.01 \pm 18.11$	200	0.995 -
4	Leafy Vegetable	34	12	54	$108.32 \pm 18.67$	100	8.32+
5	Other Vegetables	28	24	48	$257.23 \pm 25.71$	200	28.61+
6	Roots & Tubers	42	30	28	$183.78 \pm 32.16$	200	8.11--
7	Fats & Oils	32	57	11	$23.95 \pm 11.23$	28	4.2--
8	Sugar & Jiggery	70	23	07	$19.28 \pm 22.3$	30	35.73-
9	Fruits	58	32	0	$35.11 \pm 21.30$	100	64.89-
10	Meat / Fish / Egg	31	-	38	$76.15 \pm 21.33$	100	24.85-

## 4) The mean nutrient intake of the respondents

**Table 2:** The mean nutrient intake of the respondents.

Sl. No.	Nutrients	Actual Mean Nutrient Intake	RDA for Moderate activity	% of Excess or deficiency RDA
1	Protein	$60.38 \pm 28.11$	55	9.78+
2	Fat	$32.52 \pm 73.21$	25	30.08+
3	Calorie	$2283.62 \pm 1.1.2$	2230	2.40+
4	Calcium	$887.62 \pm 80.2$	600	47.94+
5	Iron	$28.718 \pm 33.79$	21	36.+7

The nutrient intake of the respondents showed interesting results. The actual mean nutrient intake of the respondents was more than RDA in all cases which may be due to consumption excess cereals, vegetables and more or less inclusion of milk, meat & fish and other food stuffs in their diet on regular basis. Interestingly the excess consumption of calorie was 2.4%, protein was 9.78%, fat was 30.08% and Iron was 36.71. However the calcium consumption was found to be

excess by 47.94%. All the above results may be due to working women, economic condition of family, education level of the respondents as well as health consciousness. But excess consumption may lead to obesity and bad cholesterol level which needs education. However a wide variation of food & nutrient intake was observed among the respondents in this study. Redriguez Ma and Garcia E (2002) emphasized on role of intake calcium and vitamin D for prevention of osteoporosis.

## 5) Nutritional Status of the respondents according to BMI.

**Table 3:** Nutritional Status of the respondents according to BMI

Sl. No.	BMI	No of Respondents	Percentage
1	Chronic Energy deficiency < 18.5	06	06
2	Normal 20.0 - 25.0	38	38
3	Obese-grade – I 25.0 - 30.0 overweight	48	48
4	Obese grade - II > 30	08	08

It was interesting to note that 48% respondents were found to be over weight which may be due put on tendency of women after menopause with advancement of age as well as hormonal imbalance. 44% women were found to be normal, 8% found to be obese and 6% respondents were found to suffer from chronic energy deficiency diseases.

## 6) Health Problem

An attempt has been made to study the disease condition of the respondents. Results on medical history of the respondents showed in Table-4 revealed that majority of the respondents were suffering from obesity (56%) followed by bad cholesterol which is a alarming sign for their future health. Cases of diabetes (31%) , high blood pressure(37%), osteoporosis (23%),joint pain (39%),gastritis(61%) and thyroid (27%) was also found among the respondents. As menopause is a period of transition, and women are prone to different types of disease therefore the women should be educated to for regular health check up along with exercise and healthy food habits to avoid future health complications. Kar (2006) <sup>[10]</sup> found in his study prevalence of different psychological problems like depression, psychoses, sexual and pain disorders which ultimately affects their quality life.

**Table 4:** Health problem of the respondents

Sl. No.	Disease Condition	Number	Percentage
1	Blood Pressure	37	37
2	Osteoporosis	23	23
3	Join Pain / Back Pain	39	39
4	Bad cholesterol	42	42
5	Thyroid	27	27
6	Alzheimer diseases	12	12
7	Cataracts	08	08
8	Heart Problem	09	09
9	Weight Loss	11	11
10	Obesity	56	56
11	Diabetes	31	31
12	Gastritis	61	61
13	Insomnia	34	34
14	Diminishing sexual urge	32	32
15	Depression	24	24

## 7) Conclusion

As menopause brings lots of physical, psychological and social changes in a women's life proper care and attention is highly desirable during this period, otherwise it may give birth to new health complications. Generally we give priority to infants, children, adolescents and adults but we never care for middle aged and elderly if the case is not worst. The results of this study revealed faulty food habits and irregular intake of

meals among majority of the respondents. Naturally when one is hungry or go on munching she will go on eating more food without her knowledge. So overweight and obesity BMI was found in majority cases. Due to faulty food habits gastritis, bad cholesterol, diabetes and joint pain was also found to be prevalent in most of the respondents.

Middle age is the age of health maintenance for a healthy passage of end part of life. Due to carelessness menopausal women suffers from different types of diseases. So after 40's regular diet, exercise and health checkup is highly essential for a better future and better life.

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