

## A Community - Based Cross Sectional Study On Nutritional Status, Dietary Habits And Associated Socio-economic Determinants Among Menopausal Women In Low-Income Settlements Of Kanpur

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### ABSTRACT:

**Introduction:** Menopause is one of the most significant episodes of female life where women shift from fertile to non-fertile phase. In this phase, females living in slum areas are especially vulnerable due to inadequate dietary intake, low socio-economic, poor living conditions and low health awareness. In this condition most of the females suffer from physical, emotional and mental fitness. This phase indicates lack of attention for well-balanced diet.

**Objectives:** The main objectives were to assess nutritional status, associated Socio-economic Determinants and food consumption pattern of menopausal women living in low-income settlements of Kanpur.

**Materials and Methods:** The present study was carried out in slum areas of Kanpur with a 100 sample size. Purposive sampling technique were used for selection of sample. The data from subjects were collected by structured questionnaire. Data on body measurement, consumption pattern were analyzed.

**Results:** Results showed that high prevalence of nutritional imbalance, including both undernutrition and overweight conditions. Poor dietary diversity, low intake of fruits, milk, and green vegetables, and high consumption of carbohydrate-rich foods were observed. The study highlights the urgent need for nutritional intervention programs.

**Key Words:** Menopause, Dietary Habit, Food consumption pattern, Nutritional status

**Introduction:** India is a country of large population, with 43 million of postmenopausal women and it is forecasted further to be 103 million by 2026 (**Dubey *et al.*, 2022**). Menopause is a natural process. Menopause is the remarks the end of fertility for twelve successive months. According to WHO “menopause is a stage when the menstrual cycle ceases for over 12 months

and there is fall down in the levels of the two responsible hormones in women's body namely oestrogen and progesterone (**Dubey et al., 2022**). Nutrition plays a crucial role in the management of menopausal symptoms. Dietary patterns are element to maintaining overall health, while poor nutrition, overweight, and nutrient insufficiency can contribute to various health disorders. Anthropometric status are closely associated with nutritional status, genetic predisposition, socio-cultural factors, lifestyle, and overall health. Assessment of anthropometric measurements is an integral component of geriatric nutritional evaluation, assist in the spotting of malnutrition, overweight and obesity (**Kashyap and Chhabra, 2019**). Menopause generally occurs between **45–55 years** and leads to decreased oestrogen levels, affecting metabolism and bone density. Problems faced by womens are caused by hormonal changes, bad eating habits, lifestyle etc. (**Hijam and Sharma, 2019**). Wholesome nutrition is one of the most crucial aspects for superior health and overcome the issues of menopause to certain extent.

**Materials and methods:** A total sample of 100 menopausal women from slum areas of Kanpur District, was selected using purposive sampling technique. Information were gathered by using a self-designed questionnaire. General information, Nutritional status and food consumption pattern were assessed. Personal interview method was followed for collection of data. A good series and sequence of questions were including questionnaire which divided in various sections. I.) Socio-demographic profile. II.) Menopausal status. III.) Anthropometric Measurement. IV) Dietary consumption pattern.

**Table 1. Socio-Demographic Information:**

Parameters	Category	Frequency (n= 100)	Percentage
<b>Age (Year)</b>	45-50	28	28%
	50-55	32	32%
	55-60	40	40%
<b>Religion</b>	Hindu	71	71%
	Muslim	27	27%
	Christian etc.	2	2%
<b>Marital Status</b>	Single	0	0%

	Married	84	84%
	Widow	16	16%
<b>Educational Status</b>	Illiterate	16	16%
	Primary	22	22%
	High school	26	26%
	Intermediate	18	18%
	Graduation	12	12%
	Post Graduation	6	6%
<b>Working Status</b>	House wife	60	60%
	Private employee	8	8%
	Agriculture	22	22%
	Government employee	4	4%
	Laborer	6	6%
<b>Family Type</b>	Nuclear	74	74%
	Joint	15	15%
	Extended	11	11%

**Table 2. Nutritional Status Information:**

Category (Nutritional Status)	BMI (Kg/m <sup>2</sup> )	Percentage
<b>Underweight</b>	< 18.5	14.00%
<b>Normal</b>	18.5-24.9	42.5%
<b>Overweight</b>	25.0-29.9	38.5%
<b>Obese</b>	>30.0	5%

**Table 3. Food Consumption Pattern:**

FOOD GROUP	Daily	Weekly	Monthly	Rare/ Never
<b>CEREALS (Rice/Wheat)</b>	90%	10%	-	-
<b>PULSES</b>	75%	15%	7%	3%
<b>VEGETABLES</b>	62%	30%	5%	5%
<b>FRUITS</b>	22%	52%	18%	8%
<b>MILK AND MILK PRODUCTS</b>	27%	60%	8%	5%
<b>FATS AND OILS</b>	50%	30%	12%	8%

## Results and Discussions:

### Socio-Demographic Profile of Respondents:

The demographic traits of the target population were presented in Table 1. A total of 100 menopausal females were included in the study. The age distribution revealed that the highest proportion of subjects 40% belonged to the age group of 55–60 years, followed by 32% in the age group of 50–55 years and 28% in the age group of 45–50 years. This indicates that a significant proportion of females were in the later stages of menopause.

In terms of religion, the majority of subjects 71% were Hindus, followed by Muslims 27%, while a very low portion 2% belonged to other religions. Regarding marital status, most of the respondents 84% were married, whereas 16% were widows. No unmarried women were found in the research study.

The educational status of the subjects exhibited variability. About 26% had completed high school, 22% had primary education, and 18% had intermediate education. Furthermore, 12% were graduates and 6% had completed post-graduation, while 16% of respondents were illiterate. This showed a moderate level of literacy among the research population, although a remarkable proportion lacked formal education.

Working status showed that the majority of subjects 60% were housewives, indicating economic dependency. A notable proportion 22% were involved in agricultural activities, while 8% were employed in private sectors. Only 4% were government employees, and 6% were labourers. These data suggested limited participation of women in formal employment sectors.

With respect to family type, the majority of respondents 74% belonged to nuclear families, followed by 15% in joint families and 11% in extended families. The predominance of nuclear family structures may influence dietary practices, lifestyle patterns, and health-seeking behaviour.

Similar observations were noted by (Dubey *et al.*, 2022) who reported that socio-demographic and low educational level significantly impact dietary intake and nutrition outcomes.

### **Nutritional Status:**

The nutritional status of the subjects was assessed using Body Mass Index (BMI), and the outcomes are presented in Table 2. The findings indicated that 42.5% of subjects had normal BMI (18.5–24.9 kg/m<sup>2</sup>). However, a relevant proportion of females were found to be overweight 38.5% and obese 5%, showing a trend toward overnutrition.

On the other hand, 14% of subjects were underweight (BMI <18.5 kg/m<sup>2</sup>), reflecting the existence of undernutrition within the research population. These outcomes clearly revealed the double burden of malnutrition among menopausal women, where both undernutrition and overnutrition coexist.

Similar observation were noted by (Ranasinghe, C. *et al.*, 2017) stated that 57% women belonged to normal range of BMI which is more than to the outcomes of research study. While 30% were suffered from obesity which is more than outcomes of the present study.

### **Dietary Consumption Pattern:**

The dietary intake pattern of subjects across different food groups were presented in Table 3. Cereals were consumed daily by 90% of subjects. Pulses were consumed daily by 75% of respondents, suggesting relatively ample amount protein intake.

Vegetable consumption was intake daily by 62% of participants, while 30% consumed vegetables on a weekly basis. However, the intake of fruits was considerably low, with only 22% consuming fruits daily, while the majority 52% consumed fruits weekly.

Milk and milk products, which are vital sources of calcium, were consumed daily by only 27% of participants, while 60% consumed them weekly. This indicates insufficient daily calcium intake, which is particularly crucial for menopausal females due to increased risk of osteoporosis.

Fats and oils were consumed daily by 50% of participants, with an extra 30% consuming them weekly. High consumption of fats and oils may impart to the increased popularity of overweight and obesity observed in the research study.

A study by **Kashyap and Chhabra (2019)** also underlined that little knowledge and awareness is associated with poor dietary intake and optimum nutrition.

**Conclusion:** In conclusion, the outcomes highlighted the need for a balanced population health approach that mark both ends of the nutritional spectrum. Interventions should emphasize on promoting healthy eating practices, increasing physical activity, and improving knowledge and awareness about optimum nutrition to diminish both undernutrition and overnutrition within the population.

**Recommendation:** Menopausal health is emerging as a critical priority in India due to rising life expectancy and an increasing population of aging females. There is a crucial need of increased awareness about menopausal symptoms, promotion of strategies for management of menopausal symptoms and to ensure access to balanced nutrition. Unlike reproductive-age women, menopausal women remain largely excluded from targeted National Health Programs.

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