consumption pattern of sugar, salt and visible fat among working women and homemakers

[1]Hafsana Fathima.M, [2]Dr. Neeta Pattan

[1]MSc Food and Nutrition, [2]Assistant Professor
Smt VHD Central Institute of Home Science
Maharani Cluster University
Department of Food and Nutrition and Research centre, Seshadri Road
Bengaluru -560001
Corresponding Author: Hafsana Fathima.M

***Abstract*- Urbanization has led to rapid changes in eating patterns and physical activity, resulting in over half of premature noncommunicable diseases (NCDs) fatalities, especially among those aged 30 to 69. The objectives of this study was to identify the consumption pattern of salt, sugar, and visible fat and to ascertain the dietary differences between working women and homemakers that differed between the two groups. A sample of 50 working women and 50 homemakers aged 30-45 years was selected. A questionnaire was administered to the sample. The questionnaire contained questions about general information, anthropometry assessment, dietary habits, sugar, salt, and visible fat consumption patterns, and the data were analyzed statistically. Findings of the study showed that majority of both homemakers and working women were overweight or obese. Sugar consumption was higher in working women than homemakers respectively. When compared to homemakers, the majority of working women not tried to minimize their salt intake. Homemakers consume deep fried meals less frequently than working women. In comparison to homemakers, majority of working women utilized sunflower oil for cooking. Working women consumed more vegetables, pulses, and fruits than homemakers. It can be concluded that Educational and sustainable interventions can improve dietary habits and health among women group.**

***Keywords*: Non-communicable diseases, homemakers, working women, sugar, visible fats, salt.**

INTRODUCTION

India has experienced the burden of dual nutrition since the nineties; with inadequate dietary intake and under nutrition on one side and poor physical activity patterns and excess food consumption / over nutrition on the other side.[1] Global agricultural and food systems are striving to achieve nutritional adequacy; however, environmental, social, and economic challenges persist. The Sustainable Development Goal (SDG), Zero Hunger, aims to eradicate hunger, provide food security, and deliver better nutritional conditions through sustainable agriculture. Sustainable diets are sustainable because of their low environmental impact and positive impact on global warming.[2]

India's rapid urbanization has led to increased consumer income, leading to a shift towards high-value agricultural products (HVAPs), such as milk, milk products, meat, fish, and eggs. However, this trend had not been uniformly distributed across all sections of society, and has resulted in environmental costs. Currently, India is grappling with triple malnutrition, stunting, underweight, obesity, and diabetes.[3]

Additionally, sugar consumption among Indians is high, with urban families having a higher sugar intake than rural households. Sugar consumption is highest among agricultural laborers, service and business workers, and moderately active individuals. India’s consumption patterns should be critically examined for future predictions and policy implications, and India’s average salt consumption is consistent with estimates from other countries and a recent modelling study.[4] Excess salt consumption has been linked to high blood pressure, with approximately 140 million individuals in India having blood pressure levels that match the diagnostic criteria for hypertension. Men consume more salt than women, and urban regions consume more salt than rural areas. The increased use of processed foods is anticipated to increase the mean salt intake, particularly in metropolitan areas. Age and BMI influence salt consumption levels, and there is little reason to expect a change in mean population salt intake over time.[5]

India has nationally recommended dietary requirements for salt, but its compliance is poor. To achieve a shift in national salt intake levels, policies that modify the larger food environment and teach individuals how to manage intake are required. To achieve an appropriate balance between essential n3 and n-6 polyunsaturated fatty acids (PUFA) and monounsaturated fatty acids (MUFA) to reduce the risk of CVDs, no more than 50% of the total fat/oil intake should come from visible fats/oils, with the other half coming from invisible fats. [6]

Convenience foods are essential for meal preparation and consumption, as they save time, energy, and mental energy. The increased female workforce in India has led to a rise in the demand for these products, as women often leave their homes to pursue careers. The demand for at-home convenience foods is driven by socioeconomic factors, the financial structure, and the value of homemakers' time. Marketers aim to attract customers by offering various ready-to-eat items at lower prices. Housewives, who often have less time for health maintenance, are at risk of obesity owing to inadequate nutrition and stress levels.[7]

With this background a study has been under take to examine the consumption patterns of sugar, salt, and visible fat among working women and Homemaker aged between (30-45 yrs).

MATERIALS AND METHODS

The study was conducted in the urban part of Bengaluru, Karnataka. A total of 50 subjects of working women and 50 subjects of Homemakers aged between, 30-45years were taken in the study. Participants who are currently pregnant or breastfeeding. Women with any of major medical conditions (eg. Diabetes, Hypertension or heart disease) were excluded from the study. A complete questionnaire was developed to extract information on numerous topics such as General information, Anthropometry assessment, Dietary habits, Consumption Pattern of Sugar, Salt and Visible fats. A systematic closed-ended questionnaire was created using Google Forms. The subjects were instructed on the study before the questionnaire was distributed.

Statistical Analysis

Statistical Analysis included coding and decoding the questions, and the same was subjected to statistical analysis. Data were classified, tabulated, and expressed as means, standard deviations, and percentages.

RESULTS AND DISCUSSION

TABLE - 1: Number of Working women and Homemakers and their diet in the 35-45 age group

	Working women N (%)	**Homemakers N (%)**
Age (in Yrs)		
30-35	22 (44%)	12 (24%)
35-40	19 (38%)	14 (28%)
40-45	9 (18%)	24 (48%)
Dietary Habit		
Vegetarian	17 (32.7%)	16 (33.3%)
Non- Vegetarian	35 (67.3%)	32 (66.7%)

"Table 1" The results of the study showed that,The majority of working women (22%) are aged 25-30, while homemakers (48%) are aged 40-45. Of the 35 working women, 67.3% are non-vegetarians, while 33.3% are vegetarians. In homemakers, 32.7% are non-vegetarians.

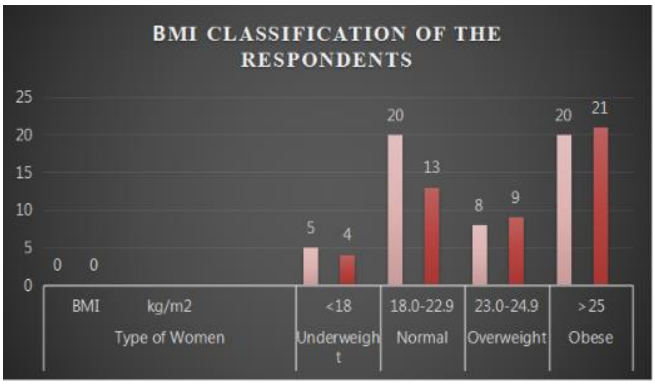

FIGURE -2 : BMI Classification of the Working women and Homemakers

"Figure 2" According to the WHO classification and Asian criteria, the above graph shows the BMI classification of Working women and Homemakers. when compared to their counterparts, a higher percentage of Homemaker category members (9 subjects or 18%) and (21 subjects or 42%) fall into the overweight and obese category when compared to Working women (20 subjects or 40%) and (8 subjects or 16%) and which supports a research study conducted by Saboo (2014) "According to this study, the prevalence of overweight and obesity in people aged 30-45 was 22% and 36.6, respectively. This proves beyond a doubt that homemakers have a higher prevalence of obesity than working women. Overweight respondents made up 18% more of the working women's respondents than the homemakers' (16%). Working women (40%) were under the normal BMI range compared to homemakers (26%), who had BMI between (18.0-22.9kg/m^2) and homemakers (8%). This supports the findings of the current study. Working women were 10% more likely than homemakers (8%) to have a BMI of less than or equal to (18 kg/m^2).This may be caused by a lack of understanding about healthy foods, improper food selections, eating too many calories, eating foods high in empty calories such simple sugars, not exercising enough, and living a sedentary lifestyle.

TABLE -2 (a) : Reasons to Restrict Sugar Intake

For what reasons do you limit sugar in your diet?	Working women N (%)	Homemakers N (%)	P value
Health related issues	3 (10.3%)	5 (18.5%)	0.62
Watching the weight	14 (48.3%)	9 (33.3%)	
Sensory aspects	9 (31.0%)	10 (37.0%)	
Others	3 (10.3%)	3(11.1%)	

P-value using the chi-square/Mann-Whitney U test. Statistical significance was set at $P < 0.05$.

"Table 2 (a)" The majority of the 14 (48.3%) working women who limited their sugar intake controlled their weight compared to 9 (33.3%) homemakers. Ten homemakers (37.0%) limited their sugar intake for sensory reasons, compared to nine working women (31.0%). When opposed to three (10.3%) working women, the majority of 5 (18.5%) homemakers limited the sugar in their diet due to health concerns. The remaining three individuals (10.3% of each working woman and homemaker) chose others. This finding supports the results of the current study.

TABLE - 2 (b): Sugar reduction in the diet of Working women and Homemakers

Do you limit sugar in your diet?	Working women N (%)	Homemakers N (%)	P value
Yes	16 (30.8%)	18 (37.5%)	0.53
No	36 (69.2%)	30 (62.5%)	

P-value using the chi-square/Mann-Whitney U test. Statistical significance was set at $P < 0.05$.

"Table 2(b)" When compared to 30 respondents (62.5%) who were homemakers, the majority of 36 (69.2%) working women did not limit the use of sugar in their diet. Whereas 18 (37.5%) homemakers limited their sugar intake, 16 (30.8%) working women did not.

TABLE - 3: Addition of extra table salt to the cooked food

Salt component questions	Working women N (%)	Homemakers N (%)	P value
How often do you add extra salt to your food before eating or as you are eating it?			
Always	1 (1.9%)	1 (2.1%)	0.50
Often	4 (7.7%)	5 (10.4%)	
Sometimes	13 (25.0%)	19 (39.6%)	
Rarely	15 (28.8%)	11 (22.9%)	
Never	17(32.7%)	12 (25.0%)	
Don't know	2 (3.8%)	0 (0.0%)	

P-value using the chi-square/Mann-Whitney U test. Statistical significance was set at $P < 0.05$.

"Table 3" The majority of the 19 (39.6%) homemakers occasionally added salt to cooked food before eating it, but 17 (32.7%) working women never added salt to cooked food before eating it, and only one (2.1%) of both working and one (1.9%) homemaker always added salt to cooked food before eating it, which is similar to a study conducted by Johnson (2019), who identified added salt as the main contributor to total salt intake in both North and South India. These findings collectively suggest the need for targeted public education and interventions to reduce salt consumption among Indian adults. This lends support to the current study.

TABLE -4 : Type of Oil used for Cooking

Visible Fat component questions	Working women N (%)	Homemakers N (%)	P value
Type of oil used for cooking			
Sunflower oil	32 (61.5%)	31 (64.6%)	0.72
Refined oil	11 (21.2%)	9 (18.8%)	
Mustard oil	4 (7.7%)	2 (4.2%)	
Coconut oil	4 (7.7%)	4 (8.3%)	
Vegetable oil	0 (0.0%)	2 (4.2%)	
Saffflower oil	1 (1.9%)	0 (0.0%)	

P-value using the chi-square/Mann-Whitney U test. Statistical significance was set at $P < 0.05$.

"Table 4" When working women and homemakers were asked what type of oil they used for cooking, the majority of 32 (61.5%) working women and 31 (64.6%) homemakers used sunflower oil, 11 (21.2%) working women and 9 (18.8%) homemakers used refined oil, mustard oil was used by 4 (7.7%) working women and 2 (4.2%) homemakers, and coconut oil was used by both groups of 4 (8.3%); vegetable oil was used by 2 (4.2%) homemakers and working women never used vegetable oil, and safflower oil was used by 1 (1.9%) working women and homemakers never used safflower oil. Sharma (2021) and Prasada rao (2016) found that sunflower oil, followed by palmolein oil, was the most commonly used cooking oil in India. However, these studies also suggest that consumption of sunflower oil may have negative health effects. Both studies found that sunflower oil users had higher body mass index (BMI) and alanine transaminase (ALT) levels than those of other traditional oils. This gave rise to the current investigation.

TABLE - 5: Consumption Pattern of Deep fried foods

What is the usual consumption pattern of the following mentioned below? [Deep Fried foods]	Working women N (%)	Homemakers N (%)	P value
Daily	0 (0.0%)	1 (2.1%)	
Twice a week	3 (5.8%)	8 (16.7%)	
Once a week	16 (30.8%)	4 (8.3%)	
Fortnightly	8 (15.4%)	10 (20.8%)	0.03*
Monthly	7 (13.5%)	9 (18.8%)	
Rarely	18 (34.6%)	16 (33.3%)	
Never	0 (0.0%)	0 (0.0%)	

P-value using the chi-square/Mann-Whitney U test. Statistical significance was set at $P < 0.05$.

"Table 5" The above statistics indicates a significant difference of 0.03 among the two groups on consumption of Deep fried foods among working women and Homemakers. the majority of working women Homemakers 16 (33.3%) ate deep fried meals less frequently than 18 (34.6%), while homemakers 1 (2.1%) ate deep fried foods more frequently than working women 3(5.8%) got it twice a week. According to this study, Sheeba (2022) studied women IT professionals in Trivandrum, India, and discovered that their fast food consumption patterns varied, with some people having a low, moderate, or high intake. This gives credence to the current study.

TABLE - 6: Monthly Purchase of Sugar, Salt and Visible fat for a Family by Working women and Homemakers:

	Working women N (%)	Homemakers N (%)	P value
How much amount of sugar you take in a month (for whole family)?(kg)	3.000	3.000	0.57
How much amount of salt you take in a month? (for whole of family) (kg):	1250.00	2000.00	0.08
How much amount of Cooking Oil you take in month? (for whole family) (Lt)?	5.000	5.000	0.34

Average butter/ghee consumption (kg/month)	500.00	500.0	0.67

P-value using the chi-square/ Mann- Whitney U test. Statistical significance was set at $P < 0.05$.

"Table 6" Both working women and homemakers purchased 3 kg of sugar per month for the entire family, Homemakers purchased 2 kg of salt per month for the entire family, compared to Homemakers who purchased 1.2kg of salt, Both working women and homemakers purchased 5 liters of cooking oil per month for the entire family, and both groups purchased 500g of butter/ ghee. The absence of a statistically significant difference shows that the null hypothesis is correct.

CONCLUSION

In conclusion, Education and sustainable interventions can improve dietary habits and health among Working women and Homemakers by promoting healthy nutrition practices and physical activity.

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