Consumption of Food of Working Women and its Impact on Nutrition and Health – A Case Study in Durgapur City

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Abstract: The research examines the daily food intake, meal frequency, and nutritional content of the diets of employed women, analyzing the impact of work-related stress, time constraints, and socioeconomic factors on their dietary habits. Present study is carried out in Durgapur city of West Bengal. A total of 1137 households have been surveyed through random sampling method. The findings reveal that working women in Durgapur often face challenges in maintaining a balanced diet due to busy schedules and limited access to nutritious food options, leading to an increased reliance on convenience foods that are low in essential nutrients. By highlighting the dietary gaps and health impacts among working women, this research offers insights into effective interventions that could support healthier dietary practices within this demographic in urban India.

Keywords: Durgapur, Working Women, Food consumption, Nutrition

INTRODUCTION

To lower the global prevalence of non - communicable disease illnesses, encouraging healthy diets and lifestyles requires a multi-sectoral approach including all key sectors of society. Agriculture and food play a significant role in this endeavour, and they must be given appropriate attention in any discussion about promoting healthy diets for individuals and demographic groups (Rathi et al., 2017). Food policies must not only aim to ensure universal food security, but also to promote the intake of sufficient quantities of safe and high-quality foods that make up a balanced diet (Ray et al., 2000). Any such advice will have ramifications for all elements of the food chain. As a result, it's a good time to look at global trends in consumption habits and consider how the food and agriculture sector might fulfil the needs and challenges provided by this study.

Economic progress is frequently followed with advancements in a country's food supply and the eventual eradication of nutritional deficiency, hence enhancing the population's general nutritional state. Moreover, it affects the production, processing, distribution, and marketing of food on a quality level (Lakshmi, 2021). The "nutrition transition" is characterised by dietary changes that are both statistical and qualitative in nature. Transitions in the diet's configuration toward a higher energy density diet with a greater role for fat and added sugars in foods, higher saturated fat intake (mostly from animal sources), lower intakes of refined carbohydrates and dietary fibre, and lower consumption of fruit and vegetables are among the negative dietary changes. Even in the developing world, alterations in diets, work and leisure practices - alluded to as the "nutrition transition" - are already leading to the primary factors underpinning noncommunicable illnesses (Andarwulan et al., 2021). Furthermore, the rate of change appears to be quickening, particularly in low- and middle-income countries.

Changes in food systems are likely to present new nutritional concerns as well as possibilities. This study applies the High-Level Panel of Experts for Food Security and Nutrition's conceptual framework of food systems for diets and nutrition to untangle this intricacy and suggest entry points for solutions (HLPE 2017). Diets are determined by the interconnections of food supply chains, food surroundings, and purchasing behaviors, according to this paradigm. The food supply chain includes activities such as production, preservation, distribution, processing and marketing, retail, and markets. Several players are involved in food systems, and their engagement can enhance nutritional value (e.g., enrichment) or lower nutritional value (e.g., inefficiencies or contaminants) (Mekonnen et al., 2021). The food environment, which includes food availability and physical and economic access to food, promotion, marketing, and information, as well as food reliability and efficiency, may be influenced by various players' actions (HLPE 2017).

Diets are regulated by interplay between food components of the system, including quantity, quality, diversity, and safety. Dietary habits, on the other hand, may operate as change agents in future food systems (Sarkar et al., 2021). This is because diet has a social, economic, and impact on the environment on health and nutrition consequences. This, combined with rising food demand, would require long-term sustainability in food production, consumption, and enabling conditions such as future food system actors' behaviour. These interconnections may have a direct impact on food mechanisms through political or institutional actions, or they may have an indirect impact by affecting food system drivers such as biophysical and environmental, innovation, technology and infrastructure, political and economic, socio-cultural, and demographic drivers (Ganguli et al., 2011). Based on the above discussion, present study investigates the food consumption patterns of working women in Durgapur City, with a focus on how dietary choices affect their nutrition and health.

STUDY AREA

Durgapur is a significant urban and industrial city in West Bengal, administered by the Durgapur Metropolitan Area Municipal Corporation. It is positioned geographically between 87°13′ E to 87°22′ E longitude and 23°28′ N to 23°36′ N latitude, placing it in the western part of the Barddhaman (Burdwan) district. The city is strategically located on the north bank of the River Damodar, which serves as a natural boundary to the south. The city has humid subtropical climate. The region of the Interfluvium consists mainly of an old alluvium. In and around Durgapur city and neighboring areas south-east and southwest are laterite outcrops. The Damodar River flows along the southern edge of the city, which influences its water resources, flood management, and ecological balance. The soil is a mixture of sand, clay and loam in this region and is located along the hill slope. In 2020, Durgapur 's total metro population is 675,000; its rates have increased by 1.5% since 2019. In Durgapur, the ratio of men to women was found to be higher, with 926 women as compared to 926 females per 1000 male in the national urban average.

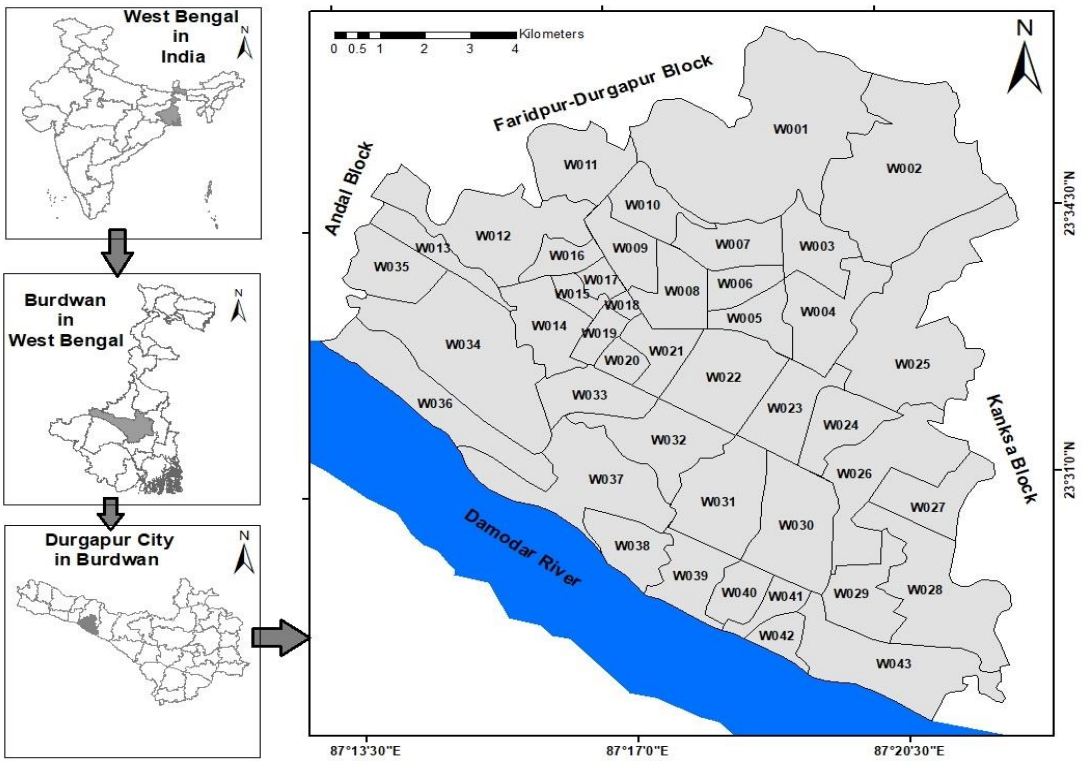

Figure 1: Location map of Durgapur city in Bardhhaman district of West Bengal, India

MATERIALS & METHODS

A total sample size of 1,137 participants was selected from various sectors of employment in Durgapur City, ensuring a broad representation of working women across different age groups, income levels, and job types. A random sampling technique was used to select participants, minimizing sampling bias and providing a more accurate depiction of the broader population of working women in Durgapur. This technique allowed

for the inclusion of women from diverse professional backgrounds, such as education, healthcare, industry, and services, which helped in obtaining a comprehensive view of dietary and nutritional trends among this demographic. All the information inserted into Microsoft Excel and descriptive statistics was calculated.

RESULTS AND DISCUSSION

Food consumption pattern

Working women and their family members' calorie intakes are measured by low, medium, and high calorie intakes each day for the study's convenience. The purpose of this study is to learn about food consumption before and after work. Various food ingredients are converted to calories for this purpose (Mamatha et al., 2020). Following the weighting, the resulting total is separated into three categories: low food consumption, medium food consumption, and high food consumption by working women and their family members (Agwo, 2023). The primary difference between before and after employment is a family's financial situation, which is entirely based on food consumption. As a result, the food intake of working women and their families reflects this disparity (Hupkens, 2000). As a result, after a job, the percent of low food intake reduces while the percent of medium and high food consumption increases in all circumstances. Before getting a job, 48.07 percent of all questioned women ate a small amount of food each day, which drops to 34.56 percent after getting a job. Before acquiring a job, 39.96 percent of women consume a medium amount of food per month, which rises to 44.27 percent after getting the job. Working women, like 11.96 percent of males, consume a large amount of food each day, which rises to 21.16 percent (***Table 1***). According to the survey, rice and vegetable consumption increased significantly after receiving the job, despite the fact that they are essential food products. Prior to acquiring a job, only 9.32 percent of working women eaten a lot of rice, which jumped to 21.64 percent after getting a job, and only 10.82 percent consumed a lot of veggies, which increased to 20.93 percent after getting a job. Because flesh food and sugar are not commonly consumed, their intake does not considerably increase once the job is obtained.

Table 1: Food consumption of working women and their family in Durgapur city (N = 1137)

Categories	Food Consumption Before Job (Female Nos.)						Food Consumption After Job (Female Nos.)					
	Low	Percent	Medium	Percent	High	Percent	Low	Percent	Medium	Percent	High	Percent
Rice	612	53.83	419	36.85	106	9.32	372	32.72	519	45.65	246	21.64
Wheat	587	51.63	415	36.50	135	11.87	378	33.25	551	48.46	208	18.29
Pulses	598	52.59	464	40.81	75	6.60	381	33.51	546	48.02	210	18.47
Sugar	616	54.18	425	37.38	96	8.44	588	51.72	435	38.26	114	10.03
Edible Oil	569	50.04	435	38.26	133	11.70	319	28.06	435	38.26	383	33.69
Vegetable	598	52.59	416	36.59	123	10.82	398	35.00	501	44.06	238	20.93
Fruits	456	40.11	483	42.48	198	17.41	289	25.42	542	47.67	306	26.91
Milk	462	40.63	512	45.03	163	14.34	362	31.84	492	43.27	283	24.89
Flesh food	443	38.96	497	43.71	197	17.33	334	29.38	517	45.47	286	25.15

Source: Calculated by the Author

Food Consumption for Higher Class Working Women and Their Family

After conducting a survey of 1137 working women in Durgapur, it was discovered that higher-class working women consume more food than lower-class working women, and that none of them consume low quantities of any food item after starting work. The reason for this is also very convenient: their high income allows them to splurge more on food than others. Before starting work, 46.34 percent of the surveyed higher-class working women eat a fair amount of food every day, but after starting work, they eat nothing. Before acquiring a job, 40.78 percent of women consume a medium amount of food per day, which rises to 46.29 percent after getting the job. Similarly, to 12.88 percent of working women, 33.84

percent consume a large amount of food per day (*Table 2*). Because higher-class working women are more health-conscious, they consume more edible oil, vegetables, fruits, milk, and fresh food after starting a job than other classes.

Table 2: Food consumption for higher class working women and their family

Categories	Before Job						After Job					
	Low	Percent	Medium	Percent	High	Percent	Low	Percent	Medium	Percent	High	Percent
Rice	605	53.21	443	38.96	89	7.83	204	17.94	634	55.76	299	26.30
Wheat	535	47.05	457	40.19	145	12.75	211	18.56	572	50.31	354	31.13
Pulses	546	48.02	397	34.92	194	17.06	214	18.82	574	50.48	349	30.69
Sugar	539	47.41	384	33.77	214	18.82	242	21.28	483	42.48	412	36.24
Edible Oil	571	50.22	408	35.88	158	13.90	275	24.19	477	41.95	385	33.86
Vegetable	486	42.74	514	45.21	137	12.05	218	19.17	548	48.20	371	32.63
Fruits	444	39.05	539	47.41	154	13.54	192	16.89	530	46.61	415	36.50
Milk	534	46.97	488	42.92	115	10.11	202	17.77	484	42.57	451	39.67
Flesh food	482	42.39	543	47.76	112	9.85	275	24.19	435	38.26	427	37.55

Food Consumption for Middle Class Working Women and Their Family

The monetary situation of middle-class working women is also quite high because they make a good wage, which is reflected in the poll. After a job, low food consumption % falls in almost all cases, while medium and high food consumption percent increases (Table 3).

Table 3: Food consumption for middle class working women and their family

Categories	Before Job						After Job					
	Low	Percent	Medium	Percent	High	Percent	Low	Percent	Medium	Percent	High	Percent
Rice	593	52.15	435	38.26	109	9.59	404	35.53	534	46.97	199	17.50
Wheat	565	49.69	427	37.55	145	12.75	411	36.15	472	41.51	254	22.34
Pulses	595	52.33	405	35.62	137	12.05	316	27.79	504	44.33	317	27.88
Sugar	558	49.08	455	40.02	124	10.91	342	30.08	554	48.72	241	21.20
Edible Oil	574	50.48	405	35.62	158	13.90	375	32.98	504	44.33	258	22.69
Vegetable	534	46.97	486	42.74	117	10.29	218	19.17	648	56.99	271	23.83
Fruits	581	51.10	403	35.44	153	13.46	219	19.26	603	53.03	315	27.70
Milk	517	45.47	485	42.66	135	11.87	202	17.77	584	51.36	351	30.87
Flesh food	545	47.93	469	41.25	123	10.82	257	22.60	649	57.08	231	20.32

Before starting work, 33.59 percent of the surveyed middle-class working women consume a small amount of food each day, which drops to 26.82 percent after starting work. Before acquiring a job, 45.17 percent of women consume a medium amount of food per day, which rises to 49.37 percent after getting the job. Working women, like 21.24 percent of males, consume a large amount of food every month, which rises to 23.82 percent. With their incomes dwindling, middle-class working women rely on rice and wheat as essential staples, as well as spending enough on pulses, vegetables, and meat.

Food Consumption for Lower Middle Class Working Women and Their Family

Working women in the lower middle class earn less than working women in the upper and middle classes,

which has an impact on their food consumption. The rule also applies to lower middle-class working women, implying that following a job, low food consumption percentages decline while medium and high consumption percentages increase (Table 4).

Table 4: Food consumption for lower middle class working women and their family

Categories	Before Job						After Job					
	Low	Percent	Medium	Percent	High	Percent	Low	Percent	Medium	Percent	High	Percent
Rice	532	46.79	509	44.77	96	8.44	364	32.01	609	53.56	164	14.42
Wheat	608	53.47	451	39.67	78	6.86	304	26.74	651	57.26	182	16.01
Pulses	562	49.43	466	40.99	109	9.59	281	24.71	646	56.82	210	18.47
Sugar	560	49.25	453	39.84	124	10.91	343	30.17	553	48.64	241	21.20
Edible Oil	619	54.44	435	38.26	83	7.30	465	40.90	534	46.97	138	12.14
Vegetable	540	47.49	516	45.38	81	7.12	339	29.82	615	54.09	183	16.09
Fruits	612	53.83	462	40.63	63	5.54	179	15.74	642	56.46	316	27.79
Milk	600	52.77	459	40.37	78	6.86	362	31.84	592	52.07	183	16.09
Flesh food	590	51.89	461	40.55	86	7.56	359	31.57	610	53.65	168	14.78

In Durgapur, 51.04 percent of the questioned women consume a modest amount of food per day before starting work, which drops to 29.28 percent after starting work. Before acquiring a job, 41.16 percent of women consume a medium amount of food per day, which jumps to 53.28 percent after getting the job. Similarly, to 7.80 percent of working women, 17.44 percent consume a large amount of food per day. Lower-middle-class women rarely spend much on meat and edible oils since they can't afford it in large quantities on a regular basis, even after acquiring a job. As a result, their percentages are much lower, at 14.78 percent and 12.14 percent, respectively. They eat a lot of sugar and a lot of fruits (21.20 percent and 27.79 percent, respectively).

Food Consumption for Lower Class Working Women and Their Family

Lower-class working women are so poor that they couldn't conceive consuming a large amount or high-quality food item before to starting work. It is also not a common occurrence for them after they obtain employment. After being hired, they only eat rice and wheat in large quantities, which are fundamental dietary products, and this percentage is likewise very low, at 14.42 percent and 16.01 percent, respectively. Before getting a job, 43.34 percent of all studied women eat a small amount of food each day, which rises to 58.84 percent after getting a job. Before acquiring a job, 41.16 percent of women consume a medium amount of food per day, which drops to 53.28 percent after getting the job (Table 5).

Table 5: Food consumption for lower class working women and their family

Categories	**Before Job**						**After Job**					
	Low	Percent	Medium	Percent	High	Percent	Low	Percent	Medium	Percent	High	Percent
Rice	532	46.79	509	44.77	-	-	364	32.01	609	53.56	164	14.42
Wheat	608	53.47	451	39.67	-	-	304	26.74	651	57.26	182	16.01
Pulses	562	49.43	466	40.99	-	-	491	43.18	646	56.82	-	-
Sugar	560	49.25	453	39.84	-	-	584	51.36	553	48.64	-	-
Edible Oil	619	54.44	435	38.26	-	-	603	53.03	534	46.97	-	-

Vegetable	540	47.49	516	45.38	-	-	522	45.91	615	54.09	-	-
Fruits	612	53.83	462	40.63	-	-	495	43.54	642	56.46	-	-
Milk	600	52.77	459	40.37	-	-	545	47.93	592	52.07	-	-
Flesh food	590	51.89	461	40.55	-	-	527	46.35	610	53.65	-	-

Nutritional Level of Working Women and Their Family

Women fulfil numerous duties in the household, including caretaker, mother, and wage earner. Lack of time and high stress levels at work and at home might have an impact on their diet and health. Women's career advancement is directly tied to their health (Mamatha et al., 2020). Women's health has a significant impact on the health of their children. Due to ignorance, pressure of job or activity both at home and at work, combined with a lack of time, many women do not have enough time for self-care and for their children, despite having more financial flexibility than non-working women (Khandelwal & Reddy, 2013). Diets rich in whole grains, lean meats, seafood, and fresh fruits and vegetables have a low energy density (measured as the amount of available dietary energy per unit weight) and a high vitamin and mineral content. Diets high in refined carbohydrates, added sugars, and added fats, on the other hand, tend to be energy-dense but nutrient-deficient. Higher energy intakes and decreased intakes of several micronutrients have been linked to such diets (Devine, 2003).

Energy nutrients are the carbohydrates, fats, and proteins found in diet that provide energy. Carbohydrates are the primary source of energy in the diet. This applies to diets all across the world. Carbohydrates are followed by fat as a source of energy, with protein contributing the least.

Table 6: Nutritional level of working women and their family (N = 1137)

	Income groups (in Calories)			
Status	High Class	Middle class	Lower Middle Class	Lower Class
Low	-	1918	2084	1986
Medium	2674	2524	2579	2364
High	2860	2881	-	-
Average	2767	2441	2331.5	2175

According to the findings, the disparity in per-day adult unit calorie intake is not as great as it appears. In terms of income, it steadily rises from 2175 Kcal for lower-class women and their families to 2767 Kcal for upper-class women and their families. The average daily calorie consumption per adult unit among middle and lower middle-class women and their families is 2441 kcal and 2331.5 kcal, respectively (*Table 6*).

CONCLUSION

This case study examines the dietary patterns of working women in Durgapur City and their impact on nutrition and health. The research delves into the food choices, meal routines, and nutritional intake of women employed across various sectors. The study concludes that the dietary patterns of working women in Durgapur are not optimally aligned with their nutritional needs, primarily due to lifestyle challenges related to work and family responsibilities. The frequent consumption of convenience foods and a lack of focus on balanced nutrition adversely affect their health. Addressing these issues requires creating greater awareness about nutrition and providing practical solutions, such as meal planning strategies and access to healthier food options. Additionally, policies aimed at promoting work-life balance and flexible schedules could support better health outcomes. By fostering these changes, working women in Durgapur could achieve improved nutritional intake, ultimately benefiting their long-term health and well-being.

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