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Health, nutritional status and determinants of dietary diversity among women domestic helpers

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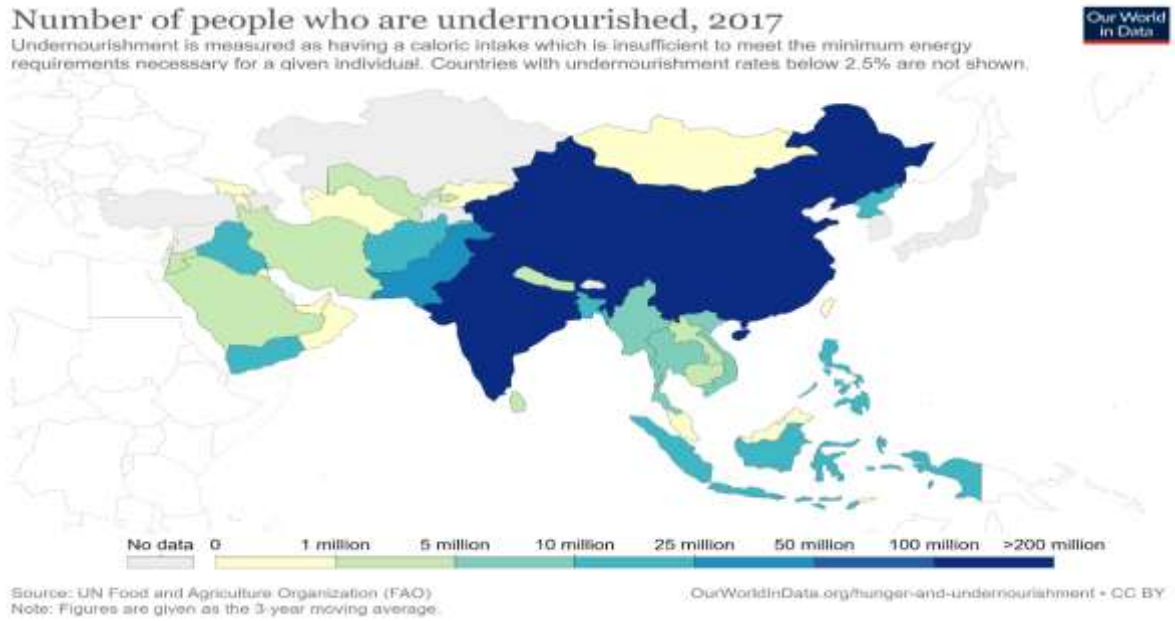
Abstract:
Aim: *The main aim of the study is to assess the food intake, nutrition status and the impact of faulty food habits and disease prevalence among domestic workers.*
Materials and Method: *A total of 200 women domestic helpers were selected for Interview from Slum Area where 120 women were from Teegalguda, Afzal nagar and 66 from Soap factory lane Chikkadpally, 14 from Nallakunta, Hyderabad city, Telangana state. Oral consent was taken from these women. The data was collected using a questionnaire that elicits basic information regarding the sample, education qualifications, working hours, food consumed, skipping of meals etc. Random sampling method has been used. Patients were also given counselling about the basic nutrition.*
Results: *68% of population were illiterates. The prevalence of malnutrition was found to be high among the domestic workers (68%). Only 61% of total population was able to eat two meals a day. 76% of the population were facing various chronic diseases and every individual has some pain in different areas of the body. 98% of the population are facing stress and depression.*
Conclusion: *Illiteracy, personal exploitation and husband being drunkards has become the main cause of stress and depression. Lack of knowledge about nutrition and due to lack of availability of food, faulty food habits, lack of water has become a leading cause of chronic diseases and malnutrition has been prevalent among these domestic workers.*

Key Words: *Domestic workers, illiteracy, Nutrition, malnutrition, chronic diseases, depression.*

1. INTRODUCTION:

1.1. Malnutrition:

11% of the world's population are undernourished – this means they have a caloric intake below minimum energy requirements. 820 million people globally are undernourished. 22% of children younger than five are 'stunted' – they are significantly shorter than the average for their age, as a consequence of poor nutrition or repeated infection. 9% of the world population – around 697 million people – are severely food insecure. One-in-four people globally – 1.9 billion – are moderately or severely food insecure.



The global map of the prevalence of undernourishment – as a percentage of the total population – is shown from 2000 onwards. Countries with a prevalence below 2.5% are not shown. It measures the share of the population which has a caloric (dietary energy) intake which is insufficient to meet the minimum energy requirements defined as necessary for a given population. (32)

1.2 Malnutrition among women in India:

Malnutrition is a common health problem among women throughout the world especially among the low economic groups. There is a lack of knowledge on nutrition and its consumption practices. (1) Malnutrition results from imbalance between the needs of the body's and the intake of nutrients. In India, gender inequality in nutrition is present from infancy to adulthood. Women never reach their full growth potential due to nutritional deprivation. Malnutrition in women is related to poverty, lack of development, lack of awareness and illiteracy. Under nutrition is a grave concern in India. Marginalized populations like Indian women have been under the serious stress of such nutritional extreme. The prevalence is highest among the people from the marginalized sections of the Indian society like Scheduled Tribes (ST) and Scheduled Castes (SC) than others. Acute hunger is the single most contributing factor of under nutrition posing a serious concern for the country. The Global Nutrition Report (2015) has also highlighted the high prevalence of under nutrition as a serious issue in India. India ranked 135th out of 187th countries in the UNDP Human Development Index (2014) while Global Hunger Index (GHI), 2014 kept India in the 'serious' category by ranking it in the 55th place among 79 countries; a status worse than many sub-Saharan countries. The latest research shows that 15.2% of the Indian population is undernourished. (3) Having a diet which is both sufficient in terms of energy (caloric) requirements and diverse to meet additional nutritional needs is essential for good health. Undernourishment, especially in children and mothers, is a leading risk factor for death and other health consequences.

1.3 Prevalence of NCD:

India is now facing the double burden of communicable and non-communicable diseases (NCDs), however primary prevention of NCDs is neglected; and women in their post-reproductive phase are vulnerable to these chronic NCDs. The Million Death Study 2001–2003 reported that in adults, 42.4% of deaths in India occurred due to NCSs, with almost similar prevalence of risk factors for both men and women (RGI/CGHR 2009). Unhealthy diet, tobacco use, physical inactivity, and the harmful use of alcohol are the modifiable risk factors which increase the risk of or cause most NCDs. These behaviour's lead to four key metabolic/physiological changes that increase the risk of NCDs: raised blood pressure, overweight/obesity, hyperglycaemia, and hyperlipidaemia. It has been well documented that a diet composed of high energy foods, fats, simple sugars/carbohydrates, and salt is associated with an increased risk for chronic diseases. An Unhealthy Approach Unhealthy dietary behaviours play crucial role in increasing the upcoming risk of chronic diseases. Previous studies have reported that cardiovascular disease risk in India is likely to be inversely associated with an intake of fruits, vegetables, and mustard oil.

1.4 Risk Factors:

Women of advanced age suffer from multiple problems, including poor nutrition, cardiovascular diseases, obesity, osteoporosis, and depression.(2) Factors such as gender discrimination from the time of birth to adulthood, poverty, unemployment, stress, restricted access to resources, and illiteracy, make women vulnerable to poor health and nutritional status The morbidity and mortality of women during their most productive phase of life is posing serious challenges to India's society and economy.(5) An Unhealthy Approach Unhealthy dietary behaviours play crucial role in increasing the upcoming risk of chronic diseases.(3)

Another important risk factor has been skipping breakfast. Breakfast is considered as the most important meal of the day providing sustenance and energy. Breakfast is recommended to contain 20%-35% of daily energy needs [4]. It is considered the most important meal of the day as a part of a healthy balanced diet [5]. Breakfast habits are significantly associated with physiological, psychological, and social health dimensions [6]. Several studies reported associations between breakfast skipping and fatigue at noon, worsens memory and higher body mass index as well as increased prevalence of obesity-related chronic illness [7-9]; deficient in total energy, vitamins and minerals [10], increased risk of central adiposity [11], and risk of insulin resistance and cardio-metabolic disorders [12]. If the stomach is kept empty for a long time, the body will suffer a deficiency of proteins and glucose. Then blood sugar will drop down followed by mood swings.

1.5 Nutrition status:

Women in Indian society consists around 50% of the total population. The health and nutritional status of women not only affects them but also their families and the society as a whole. The nutritional status of an individual is usually associated not only with quantity, but the quality of food consumed. (18) Women with poor health and nutrition are more likely to give birth to unhealthy babies. With poor health they are also less likely to be able to provide food and adequate care to their children. While malnutrition is prevalent among all segments of the population, poor nutrition among women is much more as it begins at infancy and continues throughout their life. Nutrition is very much essential for better health. Women need more nutritious food in every stage of development like puberty, pregnancy and lactation time, old age etc., they are most vulnerable physically due to less nutritional intake. Because of women's reproductive role women need more nutritious food. (1)

A quarter of women of reproductive age in India are undernourished, with a body mass index (BMI) of less than 18.5 kg/m. It is well known that an undernourished mother inevitably gives birth to an undernourished baby, perpetuating an intergenerational cycle of under nutrition. Undernourished girls have a greater likelihood of becoming undernourished mothers who in turn have a greater chance of giving birth to low birth weight babies, perpetuating an intergenerational cycle. This cycle can be compounded further in young mothers, especially adolescent girls who begin childbearing before they have grown and developed enough. When mothers take only short intervals between pregnancies and have many children, this can exacerbate nutrition deficits, which are then passed on to their children.

Foetal stunting is largely caused by the mother's inadequate nutrition before conception and in the first trimester.

The major reason for stagnant levels of under nutrition among Indian children is because of a failure so far to adequately prevent under nutrition when it happens most - in the womb, which is caused by poor nutrition of women before and during pregnancy which continues her whole life. (5)

2. LITERATURE REVIEW:

Nisargapriya has conducted a study on Nutritional knowledge, attitude and practice and its impact on health among female workers in the apparel industry in Bangalore. The present study was carried out in Creative garment industry Bangalore designed to find out the health and nutritional status of female workers. Sample size was 50. Both primary and secondary methods of data collection were adopted, a self-prepared Interview schedule was administered to collect the primary data. The analysis was carried out by applying a simple statistical percentage calculation method. The result found that there is a lack of knowledge on nutrition and its consumption practices. Consumption of fruits and vegetable salads was very low among them. There is a lack of nutritional information sources. Severe body pain was felt by the workers during the work, 50 percent of the women were moderately malnourished. There is a slight chance of increased health risk among these women. Therefore it can be concluded that there is a great need of social work intervention for promoting health and nutritional awareness. (1) Tanya Zilbeter et.al conducted a study on Breakfast: To Skip or Not to Skip. Human eating behaviors are often non-homeostatic, and thus unlike homeostatic behaviors, they are not exclusively reliant on rigid brain mechanisms, but heavily depend on psychological, sociocultural, and educational factors as well. A clear understanding of the mechanisms and consequences of various eating behaviors is necessary for giving comprehensive educational guidance. They suggest that BF is just another meal, rather than the "most important meal of the day" as is commonly believed and that prolongation of overnight fast, which depends not only on timing of BF but also on timing of the last meal of the day, can be beneficial.(3) Achu Agarwal et. al has conducted a study on Diet and nutrient intakes in urban women of Rajasthan State, Northern India. This study assessed the diet and nutrient intake of women in the age group of 35 –70 years. Door to door personal contact was done with women in identified locations and background was elicited using a questionnaire. Average intake of different foods and nutrients were recorded using semi quantitative FFQ and compared with Indian standards. Results revealed that average cereal, pulse, fruits, and vegetable intakes were below recommendations. Both energy and protein intakes were inadequate among subjects. Total fat, SAFA, and TFA intakes were higher and PUFA, MUFA, fibre, dietary iron, and folic acid intakes were lower than the recommendations. It was concluded that high fat intake and low fibre, PUFA, MUFA, iron, and folic acid intake may prone this community to diet-related chronic disease. (5)

Carol E Neil et.al has conducted a study on The Role of Breakfast in Health: Definition and Criteria for a Quality Breakfast. The purpose of this commentary is twofold: to propose a definition of breakfast, and to further define what constitutes a quality breakfast. The descriptor "quality" was selected to characterize a nutritious breakfast because it encompasses key attributes that include energy consumption, nutrients to include or reduce, portion sizes, and nutrient-dense food/ beverage choices. It also allows for future quantification or scoring of breakfast meals using a quality index, such as the Healthy Eating Index.40 This commentary also provides an overview of the existing knowledge of breakfast, including what is known about the frequency of breakfast consumption, nutrient contributions, consumer perceptions, and key outcomes associated with eating breakfast.(8)

Priya Deshmukh et.al has conducted a study on The Relationship of Breakfast Skipping and Type of Breakfast Consumed with Overweight/Obesity, Abdominal Obesity, Other Cardiometabolic Risk Factors, and the Metabolic Syndrome in Young Adults. The National Health and Nutrition Examination Survey (NHANES): 1999-2006. To examine the association between breakfast skipping and type of breakfast consumed with overweight/obesity, abdominal obesity, other cardiometabolic risk factors and the metabolic syndrome. Results suggest that consumption of breakfast, especially that included an RTEC, was associated with an improved cardiometabolic risk profile in U.S. young adults. Additional studies are needed to determine the nature of these relationships.

3. MATERIALS:

Questionnaires regarding the personal information, diet intake, food pattern, educational status, diseases etc were considered. Perceived stress and depression scale. Nutritive value table from nutritive value of Indian foods, NIN IBM SPSS version 20.0

4. METHOD:

4.1. Data collection:

A total of 200 subjects were included in the program. Present study assessed the diet and nutrient intake of women in the age group of 35 –70 years. Door to door personal contact was done with women in identified locations and background was elicited using a questionnaire. Average intake of different foods and nutrients were recorded using semi quantitative FFQ and compared with Indian standards. Correlation matrix between the well-being, nutritional status, and dietary diversity among the domestic helpers.

Data processing: The data was converted to a standard format for processing using a statistical analysis tool.

4.2. DISCUSSION:

- Some of these domestic workers husbands are unemployed where the burden of the whole family is falling on these females, so job has become the primary concern for these females so they are working as domestic workers.
- There is no proper working time, no holidays, lack of wages and as most of the domestic workers did not have at least primary school education, lack of self-confidence and skills have lead to insecurity for acquiring new jobs.
- No proper wages for buying food, lack of availability of food is the main cause of malnutrition among the domestic workers.
- Lack of knowledge about the importance of nutrition which is having a severe impact on their health.
- Faulty dietary habits and food pattern is causing pain in various regions of the body which has become a cause for other chronic diseases.
- When assessed the BMI was found less the normal range due to lack of consumption of single meal a day due to lack of financial stability which in turn became a reason for undernourishment.
- Some of the domestic workers are being exploited for personal gains, husband were drunkards and the responsibility of the whole family was on these females and excessive working time with lack of food are some of the causes for increase in the stress and depression levels among the domestic workers.
- Some of the domestic workers were under treatment, whereas few of them took self-medication like painkillers of pain with the fear of visit to doctor and cost of treatment.
- Due to illiteracy there is no family planning and more than 50% of these families have more than 4 – 5 children where the parents are finding difficulty in providing the basic facilities to these children.
- Lack of availability and accessibility of basic resources like proper built house, hygienic water for drinking and sanitation, electricity, have become basic problems due to lack of awareness as they serve as a primary cause in developing non communicable diseases.

4.3. ANALYSIS:

Statistical tests	Use
Frequency	To find the distribution of variables in the sample.
Descriptive statistics (%, average, mean, standard deviation, minimum, maximum)	To find the mean and standard deviation of various variables in the study sample.
Chi square test	To test relationships between categorical variables

5. RESULT:

5.1. CLASSIFICATION BASED ON COMMUNITY: The domestic workers were classified based on the community. Out of total women 46.7% were SC, 3.3% were ST, 48.3% were BC and 1.7% were OC.

5.2. MARITAL STATUS: Among the domestic workers 86.7% were married, 3.4% were unmarried and 10% of the population were surviving wives.

5.3. FAMILY SIZE:

Family Size	Percentage (%)
No. of members in a family	
i) 2-4	70
ii) 5-7	30

Family Type	
I) Nuclear	96.7
II) Join	3.3
Husband	
I) Employed	88.6
II) Un Employed	11.4
Children	
I) 2 -3	35
II) 4-5	58.3
III) 6-7	6.7

The above table illustrates that 96.7% belonged to nuclear families, 88.6% of the husbands were employed and 58.3% of the population had 4 – 5 children.

5.4. EDUCATIONAL QUALIFICATION:

Education Status		**Percentage**
i)	Illiterate	68.3
ii)	Primary Education (1-5)	18.3
iii)	Secondary Education(6-10)	11.7
iv)	11 and above	1.7

The above table illustrates that 68.3% were illiterates, 18.5% had primary education (1 – 5), 11.7% had secondary education (6 – 10) and more higher education was seen in 1.7%. Some of the servants were educated at a lower level because of their 'unwantedness'.

Distribution of Part – time Domestic Servants according to the number of houses they serve per day:

No. of Houses per day	Percentage
1	25
2	36.7
3	28.3
4	10

Full-time workers had to do household work including cooking, taking care of children from school and buying groceries

Part time workers also do all the work except from the kitchen.

The wages of these domestic workers were very low which made them to work for more than house.

Distribution of working hours in a day:

Working hours		Percentage
i)	2-4 Hours	51.7
ii)	4-6 Hours	16.7
iii)	6-8 Hours	26.7
iv)	8-10 Hours	5

The above table illustrates that 51.7% work for 2 – 4 hours, 16.7% work for 4 – 6 hours, 26.7% work for 6 – 8 hours and 5% work for 8 – 10 hours.

Distribution of domestic Wages:

Wage Structure (Salary per month)	Percentage
1000 to 2000	26.7
2000 to 4000	60
4000 to 6000	13.3
Total	100

Wages were not given uniformly every month and wage structure for each individual was very low ranging from 1000 rupees to 6000 rupees which was very low for the survival of whole family.

Distribution of Domestic workers according to the nature of their diseases:

Chronic health issue	**No of workers**	**percentage**
Epileptic seizers	4	6.6

Thyroid	2	3.3
Frequent fevers	3	5
Low BP	4	6.6
Eye problem	3	5
Anxiety	1	1.6
Diabetes	2	3.3
Paralysis	1	1.6
Skin issues	10	16.6
Acidity	3	5
Sleep Apnea	32	50

The above table illustrates that 76.7% of domestic workers are suffering from various chronic diseases. The rest 23.3% of the domestic workers have not done any proper medical check – ups.

Distribution of workers according to pain in different areas:

Nature of pain	No of domestic workers	Percentage (%)
Full body pain	19	31.6
Headache	15	25
Low back pain	6	10
Leg pain	10	16.6
Neck pain	5	8.3
Knee pain	9	15
Shoulder pain	7	11.6
Stomach pain	3	5

The above table illustrates that most of the individuals are having some pain in different areas of the body. The rest of the sample are still not facing any pain.

Other problems faced by domestic workers:

- It was observed that 90% of the population were living in kutcha house in slum areas of government land where as only 10% individuals only had pucca house.
- 70% of the houses did not have electricity.
- 95% of those workers were dependent on public tap or public wells for drinking water.
- 98.3% of the population had stress level of score above 20.
- Most of the married workers (>80%) complained that their husbands were drunkards and were not cooperative which made them take the responsibility of the children. Some of them were exploited for personal gains. Most of them were unhealthy which is causing them severe mental and physical stress.
- 98.3% of the population were facing depression level of score above 16.

Distribution of domestic workers according to food status:

61.7% of the domestic workers were able to eat two times per day, 36.7% of this population was able to eat three times in a day, 1.7% were able to eat only once in a day. Most of them were able to eat in the afternoon (65.3%), evening (33.3%) and only 1.7% were able to eat in the morning. The whole population eats only rice (100%).
The main energy source for these domestic women is typically rice, where they hardly eat only 2 bowls of rice in a day with a cup of dal or curry. They consume dal twice a week, green leafy vegetables, other vegetables 2 – 4 times a week, fruits, meat and poultry once a week with egg being consumed twice. They don't consume milk directly but drink 4 – 5 cups of tea with 1tbsp of curd 3 – 4 times in a week with 8 glasses of water per day. The most common thing is they skip breakfast.

Food Status	Percentage
No. of Meals per day	
I) 1 Time	1.7
II) 2 Times	61.7

III) 3 Times	36.7
At What Time	
I) Morning	1.7
II) Afternoon	65.30
III) Evening	33.3

BMI:

The average height among these workers is 157.3cm and average mean weight is 51.5kg. From the data obtained it is observed that most of them were underweight or under the normal range. 18% of the population were overweight.

BMI	
Under Weight <18.5	40
Normal(18-25)	41.7
Over Weight/Obese (>25)	18.3

6. CONCLUSION:

- Illiteracy, no regular jobs and burden of the whole family was on these domestic workers without proper wages.
- Personal exploitation, work load and husband being drunkards has become the main cause of stress and depression.
- Lack of knowledge about nutrition and due to lack of availability of food these domestic workers are unable to consume single meal per day.
- Lack of money, faulty food habits, lack of basic facilities like availability of hygienic water and sanitation has become a leading cause of chronic diseases and malnutrition has been prevalent among these domestic workers.

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