



RESEARCH ARTICLE

STUDY ON PURCHASE AND CONSUMPTION OF FOOD ITEMS, AND HEALTH STATUS AMONG DIFFERENT PHYSICAL ACTIVITY WORKERS FAMILIES IN RURAL AREA OF PONDICHERRY

Prasad K N^{*1}, Monica P S², Nandhini S P², Nepolean P², Nisar Ahamed², Nivetha M² and Shalini V²

^{1,2} Department of Community Medicine Shri Lakshmi Narayana Institute of Medical Science, Kudapakkam, Pondicherry

ARTICLE INFO

Article History:

Received 14th, April, 2015
Received in revised form 23th, April, 2015
Accepted 13th, May, 2015
Published online 28th, May, 2015

Key words:

Food Items, Per Capita, Purchase, Consumption, Community, Commodities, Sedentary, Moderate, Heavy, Workers

ABSTRACT

Introduction: Hunger and poverty elimination are the basic responsibilities of the country. This depends on the availability, purchase and consumption food items or commodities in the respective countries. Periodical assessment is essential to support to country's commitment.

Objective: To find the purchase and consumption of food items, and health status among families of different workers in the rural area of Pondicherry.

Materials And Methods: A community based cross sectional quantitative descriptive study is conducted in rural area of Pondicherry during March to April 2015 among 300 families of sedentary moderate and heavy workers by using pilot tested structure, questionnaire at the door steps of residents. Data are collected on purchase and consumption of different food items for the last 7 days. Analysis was done using Microsoft EXCEL, proportion, mean, per capita, purchase on various worker families.

Results: The mean of family member was 4.3 ± 1.4 among 1177 population and there were 17, 61 and 22% of families belonging to sedentary, moderate, heavy workers. The purchase of food items on per capita per day basis was Rs51, Rs 55 and Rs 56 among sedentary, moderate, heavy workers respectively. The families spent nearly 47% of their total monthly income towards purchase of food items or commodities. 73 people were suffering from chronic diseases and 50 % of them belonging to moderate worker family, 34% are heavy workers family.

Conclusion: The per capita per day of Rs 54 was spent on purchasing food items and it was purchase of food commodities was inversely proportional to the family size. The detailed analysis may be taken periodically for comparison and betterment of the community.

Copyright © Prasad K N *et al.*, This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

The consumption of food may be varying depending on the living beings nature of activity and availability of food in their surroundings. Consumption of food items are varying in the world due to topographic structure, crops grown and other environmental factors. The pattern of food items consumption depends on the cultural belief, religion, abundance availability of food items, economic conditions and other acquired processed or stored foods. Recently the disease pattern in the community also determining factor for food consumption behaviour.

The per capita income is highly variable from developed countries to low and middle income countries. It is estimated to be \$ 1570 (Rs. 97340) for India in the year 2013, ranked 120th of 164 countries by World Bank. [World Bank 2014. GOI India 2014]

The purchasing power of the food by the community and social assistance to the families of poverty exist in many countries on order to eliminate the ill health and deaths due to inadequate food or starvation in any given situations. Similarly in some countries the calories consumption are high owing to their body size and activity whereas in low and middle income countries the per capita calorie are less. There is lack of studies on the scenario of food purchase, consumption pattern among the rural communities in India. Thus the study was conducted to find the purchase and consumption of food items and health status among families of different workers in the rural area of Pondicherry.

MATERIALS AND METHODS

This is a cross sectional, quantitative, descriptive and community based study conducted in the randomly selected 4 villages of Pondicherry during the period of March and April

**Corresponding author: Prasad K N*

Department of Community Medicine Shri Lakshmi Narayana Institute of Medical Science, Kudapakkam, Pondicherry

2015. The questionnaire was pilot tested and structured to the objectives of the study. The data includes the family size, structure, physical activity or working nature of family members and their health status, non financial assistance, purchase and consumption of each food items. The data was confined for purchase for last one week (7 days) or previous week and consumption pattern for the same because it helps the family members to recollect the money spent on buying them. The sample size in the study was 300 families and data collected at their doorsteps. The purpose of the study was explained to the available family members and their consent was taken before the data collection. The information was collected from reliable and responsible members of the family. The average time taken to complete the data collection was approximately 20 minutes. The reliability and completion of the data verified among ten percent of the families.

Definitions used

1. Category of food items: for convenient purpose the food items were categorised as cereal, pulses, etc., for the analysis purpose on weekly basis.
2. Per capita or pro rata calculation: the per capita purchase was estimated by dividing the amount spent on food items or total items divided by number of family members.
3. Purchase of food items: The purchase of food items on weekly basis were collected in Indian Rupees. If the family is availing the government assistance on foods, the same food items rate was converted to rupees at the lowest market rate for the respective food item.
4. The physical activity of the adult family members were categorised as sedentary, moderate and heavy workers.
5. The families are categorised as sedentary, moderate and heavy workers family if more number of adult family members are doing the similar nature of work.
6. The diet coefficient was applied to family as total calories of the families as a standard procedure. [Sabysachi Sarcar 2008]

The calories were calculated as sedentary, moderate and heavy working pattern per day separately for men and women respectively. [Sabysachi Sarcar 2008]

Statistical Analysis: Data was analysed by using the Microsoft Excel 2007 version. The proportions, percentages, mean, standard deviation, pro rata per family and capita were calculated for the analysis.

RESULTS

There were 1177 family members among 300 families in this study area. There were 609 and 568 males and females respectively. The family size of 4 and 5 constituted about 74% of the total families as shown in Table1 and the mean number of family members in this study was 4.3±1.4.

Table 2 shows 256 and 44 families are nuclear and joint family type respectively, similarly the non financial assisted families

(pink card) were nearly two thirds among both type of families. Table 3 depicts 17, 61 and 22 percent of families were belonging to sedentary, moderate and heavy workers. There were 742(64%) family members in the moderate workers and equal proportions in sedentary and heavy workers family.

Table 1 Distribution of families according to their size and sex wise

Family size	Total no of families	Male	Female	Total No (%)
≤2	24	21	26	47 (3.9%)
3	66	114	84	198 (16.8%)
4	132	283	245	528 (44.8%)
5	69	164	181	345 (29.3%)
≥6	9	27	32	59 (5%)
Total	300	609	568	1177 (100%)

Table 2 distributions of families according to their type of family and ration card.

Type of Family	No. (%)	Yellow Card No. (%)	Pink Card No. (%)	Total No. (%)
Nuclear	256(85%)	91(35%)	169(65%)	260(100%)
Joint	44(15%)	15(37.5%)	25(62.5%)	40(100%)

Table 3 Distribution of families with predominant type of working

Type Of Work	No. of Families (%)	Total no. of family members (%)
Sedentary	51 (17%)	221 (17.9%)
Moderate	183 (61%)	742 (64%)
Heavy	66 (22%)	214 (18.1%)
Total	300 (100%)	1177 (100%)

Table 4 Distribution of families with their total monthly family income and expenditure towards food items purchase

Type Of Work	Total Monthly Family Income (Rs)	Expenditure On Food Items In %
Sedentary	812700	48
Moderate	3197100	47
Heavy	968000	46
Total	4977800	46.6

Table 5 Distribution of families according to expenditure per day per family and person

Type Of Work	Mean (±Sad) Per Family	Per Capita Per Day
Sedentary	216.6 (92.5)	51
Moderate	222.1 (92.52)	55
Heavy	182.5 (92.8)	56
Total	212.4 (92.4)	54

Table 4 shows the percentage of total family income spent towards the purchase of food items expressed per month was 46.6% and the total monthly income of the 1177 members was observed to be Rupees 4,977,800.

Table 5 showing the purchase of food items expressed as Rupees per family was found to be not different pattern between sedentary and heavy workers families. The per capita was observed to be 51, 55 and 56 for sedentary, Moderate and heavy workers families respectively.

Figure 1 showing 27 percent of the amount goes towards the purchase of cereals followed by 20, 15, 10.5, 10, 8.8 and 8 percent of pulses, non vegetarian items, milk and milk products, fruits, vegetables and edible oils respectively. The

total per capita of Rupees 66 to 38 was observed as inverse proportion to the increase in family size.

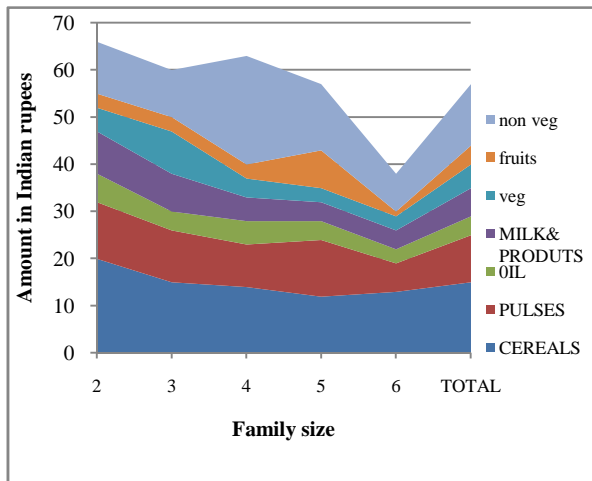


Fig: 1 pattern of consumption of commodities per capita per day in Indian rupees

Table 6 Prevalence of Chronic diseases among family members belonging to different workers

Type Of Work	Male	Female	Total
Sedentary	7	5	12
Moderate	25	11	36
Heavy	13	12	25
Total	45	28	73

Table 7 Distribution of type of worker families according to their chronic disease and their per capita income

Type Of Work	No Of Families		Per Capita Per month*	Per Capita Per Day*
	With Chronic Disease	Without Chronic Disease		
Sedentary	9	18	4129.5	344.1
Moderate	30	60	6000	166.7
Heavy	12	13	5767.4	230.7
Total	51	91	15896.9	217.8

Table 6 shows that 73 of 1177 family members suffering from chronic disease mainly non communicable diseases. More than fifty percent of these were present among the moderate workers family and 34 percent were among the heavy workers family. Table 7 shows the per capita income of the chronic diseases suffering individuals is found to be higher compared to the total family members of the respective families.

DISCUSSION

The hunger and poverty are related events in any of low and middle income countries. The rapidly developing countries with large population size like India with divergent, culture and topographic terrain are challenging to provide basic right to its citizen. The country is responsible to provide the basic rights to each citizen as declared by the United Nations. [FAO 2013] The family size in this rural population of Pondicherry is 4.4±1.3 is showing the acceptance of limiting the number of births by adopting the family planning methods as shown in Table1. This observation is in concurrence with the available reports published by Government of India. [NCAER 2011]. Similarly the pattern of consumption also reflects on the family if there are more male members since the energy requirement will be higher compared to females. [Sabysachi Sarcar 2008].

In this study it depicts the ratio of Male to female is 609 to 568. The social change in this family structure is not uncommon in rapidly developing community or effect of industrialisation or urbanisation. It reflects in this study 85% of the families are nuclear type or extended with the presence of single parents of couples as shown in Table 2 and nearly two thirds are utilising the concessions given by the government for their welfare as shown as pink car holders (65%).

In this study rural area which is combined with farming and industries and offices as developing territory, majority of the families are having moderate workers (61%) and accounts for 64% of total population of the study area as depicted in table 3. The study population has culture as preparing (cooking) food at home two times (78%) compared to 3 times (20%) in a day and the habit of eating is common that the family members will eat three times a day as the breakfast, lunch and dinner.

The expenditure of purchase of food items was calculated for the last 7 days or previous week as shown in the table4. The amount spent per family per day is Rs 212.4±92.4 and per person per day is Rs 54. This applies to only purchase of food items which are supposed to be cooked or prepared at home and does not include the expenditure towards the purchase of snacks, confectionaries, ready to eat foods or eating in hotels or restaurants. The per capita income observed to be Rs 97340 for the year 2013 for India and the same for Union Territory of Pondicherry was Rs. 122654. [GOI 2014, World Bank 2014] This indicates the capacity of the families to on expenditure in per capita spent on food items.

The experts in this field of economics and agricultural field are expecting that with three fold increase in India DGP by 2030, food consumption will rise by 4% each year from Rs 11 in 2010 to Rs 22.5 by 2030 which equates to growth in per capita consumption from Rs. 9360 to Rs. 15390. [Whitehead 2013] In comparison with the available reports on expenditure at households on food, it is found to be the same in this study. [NSS report 2012] The proportion of total monthly family income expenditure remains the same in this study as compared to the National Sample Survey report of 2011-12. Similarly the pattern of commodities or food items consumption per capita per day was higher by 6 percent in this study compared to the same report. [NSS report 2012, NSS 2013]

More than sixty percent of chronic diseased people in this study were male members and the per capita per day was four times higher among the similar working group family members especially among moderate and heavy workers. The conclusion cannot be done based on this observation and it requires detailed analysis after further studies in this rural area.

Limitations

The data shown in this study reflects for the rural community and the differences in purchase or consumption pattern may be having marginal variation throughout the year. This data does not include the amount incurred on purchase of prepared, ready to eat, confectionaries, bakery products and eating in hotel or restaurants.

CONCLUSION

The proportion of expenditure on was nearly fifty percent of the total monthly family income and the per capita per day of the families was Rs. 54. There were 73 chronic disease people and the per capita expenditure was higher among moderate worker families and family size of 3 or less.

References

1. GMI per capita, Atlas method (Current US\$), World Bank, Retrieved 2015-05-08.
2. Per capita income by states in India. Maps India. <http://www.mapsofindia.com/maps/india/percapitaincome.htm> retrieved on 2015-05-08.
3. Sabysachi Sarcar. Principles of Medical Physiology, Thyme Medical Publishers, Germany, 2008, page 477-478.
4. http://www.fao.org/hunger/en/#jfmulticontent_c130584-2 retrieved on 2015-05-08
5. A research paper prepared under the project Agricultural outlook and situation analysis reports. National council of Applied Economic Research, Parisila Bhawan, New Delhi, 2013, page 12-18.
6. Key Indicators Of Household Consumer Expenditure In India, 2011-12, National Sample Survey, Ministry of Statistics and Programme Implementation, Government of India , 2013.
7. Level Of Consumption in 2006-07, NSS report on Consumer Expenditure survey of 63rd round, 2008, Ministry of Statistics and Programme Implementation, GOI. Page 1-4.
8. Whitehead R J. <http://www.foodnavigator-asia.com/Markets/Food-consumption-in-India-will-double-by-2030> accessed on 08-05-2015

How to cite this article:

Prasad K N *et al.*, Study on Purchase and Consumption of Food Items, and Health Status Among Different Physical Activity Workers Families in rural area of Pondicherry. *International Journal of Recent Scientific Research* Vol. 6, Issue, 5, pp.3933-3936, May, 2015
