

Family Food Security - Factors Influencing

Archana Prabhat¹, Khyrunnisa Begum²

¹Department of PG studies in Food Science and Nutrition, Alva's College, Moodbidri

²Department of Studies in Food Science & Nutrition, University of Mysore, Mysore

Corresponding Author: Archana Prabhat

Received: 22/01/2017

Revised: 14/02/2017

Accepted: 20/02/2017

ABSTRACT

Family food security is the ability of the household to secure enough food to meet nutrient requirements of all family members. This infers that food in terms of quality, quantity, safety, cultural acceptance, and future expectations are secured. The objective of the study is to study the food and nutrition security at Household level in selected families and to study the factors influencing the Food Security. Participants were selected from two taluks namely Karkala and Moodbidri from Dakshina Kannada. 350 families from each taluk formed the population, men and women heads aged more than 35 years were interviewed. Standard schedules were used to elicit information. Demographic profile including education and occupation, anthropometric measurements, weight, height, waist and hip circumference and MUAC were measured using standard procedures and equipments. 97% of the families with high economic status were secured, where in lower to the extent of 55%. Vegetarians and non vegetarian consuming families (72-76%) were secured. The food security among labourers (men v/s women) was 42 and 62%. And retired were satisfactorily secured. More than 50% of the educated females were secured. It is obvious in our findings that monitoring food security can help to identify and understand the basic aspect of well-being of the population and to identify population subgroups or regions with unusually conditions. The measurement of food security is crucial for projection of the need to introduce and monitor intervention programs by national and agencies.

Key Words: Family food security, Nutrition security, Household, anthropometric assessment,

INTRODUCTION

Food security is a state of existence in which people have physical, social and economic access to sufficient, safe and nutritious food that meet their dietary needs and food preferences for an active and healthy life”(FAO). [1-2] India is likely to be the most populous country on this planet with the population projection of 1.6 billion by 2030. Ensuring food and nutrition security is thus a challenge for India, [3] FAO (2012) estimates nearly 2 billion people to be food in secured. Six million children die of hunger every year – 17,000 every day according to 2007 report. Food riots have recently taken place in many

countries across the world. [4-5] India's high growth has had little impact on food security and the nutrition levels of its population. [6-7]

Family food security is the ability of the household to secure enough food to meet nutrient requirements of all family members. It is rather critical to link national food security and household food security, because both point towards availability of food supplies in adequate quantities to meet food needs of the population for a healthy and active life. This infers that food in terms of quality, quantity, safety, cultural acceptance, and future expectations are secured, where in national food security is

important to provide a foundation. In the ultimate analysis what is more important is food security for each and every household and within it to every member of the family. [1, 8-10] The ability of an individual to fully reach his/her personal and economical potential depends to a large degree on his/her level of nutrition security. [11] However, various household characteristics, such as, household income, consumption patterns, living condition, social etiquettes, tastes and preferences are the determining factors of individuals' food security in the family. [12] Within a household, each member participates in producing commonly consumed goods and therefore contributes in achieving the desired food security.

Attempts are being made to develop tools to measure food security or insecurity in different nations. Nevertheless, research is under way to explore the feasibility of adapting these methods for use in other countries. [13] The food security measure provides independent and specific information on the various dimensions of well-being than can be inferred from income data alone. [14] Further, food security measures involve collecting data related to different aspects affecting food consumption in the food chain. The measurement of food security is crucial for governmental and development agencies to monitor and evaluate the impact of their programs at the household level. [15,16] However, validation of the tool is a necessary step to develop a household food security survey tools that can be applied ubiquitously to diverse populations and is critical for food assistance programs. [9, 17] The food security scale has been designed, not only for use in national surveys, but also for local groups wanting to determine the extent and severity of food insecurity / hunger within their own communities, using a technically well-grounded and tested method to produce local prevalence estimates of food security comparable with national and state-level standard benchmark figures. [18-21]

The major factors that affect an individual's food security are household food availability, household behaviours (including decisions and choices regarding food acquisition and intra household allocation), and the individual's health and nutritional status. In urban areas, the main determinants of food availability at the household level are food prices and family income, access to home production (urban agriculture), and access to formal and informal transfers.

The present study focuses on assessing household security in two taluks from South Canara district. Social studies of health and food security suggest a complex relationship between socio-economic status, nutrition and well being. This study bridges these fields of research, focusing attention on the intersection of education, income and access to food. The objectives of the study are:

- To study the food security at Household level in selected families in two taluks of South Canara
- To study the factors influencing the family food security

MEASUREMENT OF FOOD SECURITY

An attempt was made to compile the tools used to measure food security by various organisations. It is clear from the food security definitions that it is measured at various levels; at each level the criteria for measurement should be different. This is true for the reasons of application of data and interpretation. Appropriately measured data offers wide usage and adds advantage for developmental activities at global and national level. The history for development of tools is parallel to the development and standardisation of the concepts of food security. [21]

Food security has been identified as an important feature of any nation; it indicates a nation's resource that can contribute to the health and wellbeing of its people. The global scenario of food security

and its consequent effects are being debated for many decades now. Attempts are being made to define food security in various perspectives; the international and national bodies engaged in human health have put forth definitions for food security. It is essential to understand the term 'food security' to appreciate its dimensions.

METHODOLOGY

Food security in terms of national security and household security are the most debated subjects. Since it has relevance to the national development on one side and health and well being individuals on the other. Therefore, the term food security has been defined and redefined frequently. According to Gillespie and Haddad (2001), food-secured households are those with consistent access throughout the year to adequate food for active healthy living.

Literature provides enormous data about food security at various levels; however, there appears to be a great lacuna in the data. Infact food security is the widest aspect of nutritional studies applicable at global level, national level and individual level. India comprises of a diverse population with varying food cultures, although volumes of literature presents the food and cultural information, limited literature is available about household food security from the coastal regions of Karnataka. Therefore, the study was taken up to assess the family food security and also to examine the gender based differences in food security. The details of methodologies included in the present study are given under the following heads.

1. Selection of the area
2. Selection of the population
3. Description of tools used in the study
4. Statistical analysis

1. Selection of the study area

South Canara district has four taluks, among them Karkala and Moodbidri taluks were selected for the study. They are the urban regions and known for their good educational institutions.

2. Sampling procedures

Cluster sampling was adopted for the purpose. Two urban regions i.e., Karkala and Moodbidri taluks were chosen as major clusters. Each taluk was divided into 5 clusters being north, south, east, west and centre. A total of 350 household formed the study population. 70 households were chosen from each cluster for the study.

Families were selected by house to house contact; those families who extended full cooperation to provide the information completely were included for the study. A total of 700 families from the two regions formed to total population of the study.

3. Description of the tools

a. The questionnaire was developed to elicit general information about family. Demographic details with education and occupation of the family members were included.

b. Food security Module: This is a structured questionnaire adopted from USDA (2002).^[19] This is a model for global application for adults. It is a simple questionnaire covering 5 domains for food security. This elicited information about food available at home and the experience of food shortages within one year.

The schedule helped to identify the groups with 3 different states of food security, including state of severe food insecurity

- Food secured
- Food insecure without hunger
- Food insecure with hunger

c. Scoring for food security: In the questionnaire each statement has 4 responses varying from 'Often true', 'Sometimes true', 'Never true' and 'Don't know'. These responses were designated a score starting from 0 for 'Don't know' to 1 for 'Often true' and 3 for 'Never true'. Therefore, a total score of 8-20 was obtained, wherein highest score indicated 'Food security' and low scores 'Food insecurity'. The following classifications were thereby used for the study population to classify into

- Food secured (16-20)
- Food insecure without hunger (12-15) and
- Food insecure with hunger (8-11)

4. Data Management and Statistical analysis:

The individual data obtained were made into data sheet for easy access of information. It was tabulated in Excel 2007 version. Chi Square was applied to describe the relationship and significance among the variables of the study.

RESULTS AND DISCUSSION

Food security is a measure of the availability of food in required quantities to maintain a state of health. Measurement of food security helps to understand and identify the population with risk for poor health. [13-14,16] The data presented in table 1 clearly states that 67 and 69% of the families were food secured, 31-33% was food in-secured, and of which 'Insecurity without hunger' predominated. 71-74 and 26-29% respectively were insecure without hunger and 'insecurity with hunger.'

TABLE 1: Family food security

Family food security					
		Food secured	Food insecure% (No.)	Food insecure	
	N	% (No.)		With hunger	Without hunger
	700	68.0 (470)	32.0 (230)	28.0 (64)	72.0 (166)

Table 2 presents the multiple factorial influences on Food Security. Across socio economic groups, the rate of food security was much higher among the high SES groups (97%); followed by those in middle SES group (80%) the least was among low SES groups with 55%. Food insecurity was experienced by people who were socio economically deprived or those with low income to meet the basic needs, the differences in percent distribution were statistically extremely significant. 69 and 87% of families in low SES and middle SES groups were identified as food insecure without hunger; while 31 and 13% respectively had food insecurity with hunger (severe insecurity). It is evident therefore that an extremely significant association exists between income and food security. Our results are in confirmation with the studies reported from other developing countries. [22]

Household food security is associated with socioeconomic status, wherein 50% of food-secure households have incomes above the poverty line. [23] Therefore, the construct of food insecurity includes socioeconomic variables, such as household income, family size and employment status. [24, 25] Contrarily a few

other studies have shown that a larger number of low SES appears to be food secured than the middle and high SES.

In addition, the diet type was noted to have had a marked influence on the extent of food security, vegetarians (76%) and non vegetarians (72%) were found to be food secured while the occurrence of insecurity was 24 and 27% respectively. Among the families who were food insecure, 83 and 76% of non vegetarian and vegetarian respectively did not experience hunger. It is clear therefore that a small percentage of the families were found to experienced severe food insecurity i.e., with hunger, the occurrence of high proportion of food insecurity with hunger among vegetarians could be coincidental. Although a small percentage of families were found to experience food insecurity with hunger in the study population, nevertheless, when this is extrapolated to the entire population it is a rather large segment who may be at the risk for severe malnutrition. Hence it is an important public health issue.

The level of food security was much higher i.e., 83-87% among all the participants from different occupational categories except for labour class. 81% of

the labourers from the food insecure group had food security without hunger. Those families in which females were engaged in Jobs as labourer, food security was least (62%) followed by homemakers (73%). Those families who were food insecure, higher percentage experienced food insecurity without hunger, indicating the food insecurity to be moderate. It is a glaring fact that families with working women, the percentage of food security was

considerably higher as compared to those where men alone were earners. The families in which the females are working contribute enormously to the family income improving the food security status. Where men were labourers the family insecurity was high, more than 50% were food insecure. It is observed that when women were employed food security was better and had extremely significant statistical association.

TABLE 2: The general pattern of family food security and factors influencing

Variables	Characteristics	N	Food Secured	Food Insecured	Severity of insecurity		
					With hunger	Without hunger	
			% (No.)				
Family Income	Low	367	55.0 (200)	45.0 (167)	33.0 (52)	67.0 (115)	
	Middle	271	80.0 (210)	22.0 (61)	13.0 (8)	87.0 (53)	
	High	62	97.0 (60)	3.0 (02)	50.0 (01)	50.0 (1)	
	Chi Square		64.437***				
Diet type	Vegetarian	212	76.0 (162)	24.0 (114)	26.0 (27)	74.0 (87)	
	Non-vegetarian	488	72.0 (308)	27.0 (116)	17.0 (37)	83.0 (79)	
Occupation	M	Labourers/ agriculturist/ others	238	42.0 (99)	58.0 (139)	19.0 (42)	81.0 (97)
		Professionals/teacher/ Dr/lawyer	112	83.0 (109)	17.0 (19)	0	100.0 (19)
		Business/govt. officials/office work	270	84.0 (192)	17.0 (31)	13.0 (6)	87.0 (25)
		Retired	80	87.0 (70)	12.00 (41)	10.0 (16)	90.0 (25)
	F	Home makers	343	73.0 (251)	27.0 (92)	18.0 (32)	82.0 (60)
		Labourers /agriculturist/others	160	62.0 (99)	38.0 (91)	34.0 (32)	66.0 (59)
		Professionals/teacher/ Dr/lawyer	130	91.0 (119)	9.0 (11)	0	100.0 (11)
		Business/ govt. officials/office work	46	93.0 (86)	6.0 (3)	0	100.0 (03)
		Retired	21	100(41)	33	0	33
	Chi Square		193.043***				
Education	M	Attended schools	396	35.0 (196)	65.0 (200)	20.0 (53)	80.0 (147)
		Graduates	209	80.0 (179)	20.0 (30)	18.0 (11)	82.0 (19)
		Professionals	95	97.0 (95)	0	0	0
	F	Attended schools	462	54.0 (250)	46.0 (205)	26.0 (59)	74.0 (146)
		Graduates	193	78.0 (176)	22.0 (25)	12.0 (5)	88.0 (20)
		Professionals	45	98.0 (44)	0	0	0
Chi Square		225.032***					

***P<0.0001; NS=Non significant

Table 2 has brought to light the extent of education of man and woman on the family food security. Education is universally acknowledged to benefit individuals and promote food. [23] Educated

females and males produce similar increase in their subsequent earnings and expand future opportunities and make food choices. However, educated women produce many additional socio-economic gains that benefit

household members. These benefits include increased economic productivity, higher family incomes, food security and improved health and Nutritional status. Lower is the education lower the security; higher the education, higher the security. Additionally educated women are in a better position to exercise scientific knowledge into practice.

It is obvious that an increase in education status there is a linear increase in extent of food security among the families. [24] Literature has documented the influence of education on various aspects of human development. Especially, education of woman has been frequently referred to improved family status as well as food availability. So it is used as a reference measure to assess family food security. [25, 26]

Although, several aspects of family food security have been discussed in previous sections, the salient feature of families that exerts effects on food security is of prime importance. Therefore, the characteristics that were found to influence family food security were identified and the Pearson's correlation was performed. The results are presented in table 3. Among the various factors tested, males and female adults and their associated variable were found to exhibit significant association. Considering males income, education and family size were significantly correlated while; income and family size were associated to female adults. Hence, the results reveal that, considering both adult males and females, income and family size have significant correlation with family food security.

TABLE 3: Correlation of important influencing factor with the family food security (n=700)

Major factors	Variables	"r"	F
Males	Income	-0.145	5%
	Education	-0.157	
	Family size	0.132	
Females	Income	-0.145	
	Family size	0.132	

CONCLUSION

My study has brought forth important and useful information regarding

the family security, characteristics of food insecurity and the influencing factors. The family food security in study population was found to be 67% across the region and the families with vegetarian and the non-vegetarianism. Income and education were most influencing factors for food security. Education of woman contributed extremely to the food security. The total food insecure families 33% among these 73% were food insecure without hunger, wherein the labourer families were maximally affected. Education of both adult man and woman affected family food security.

ACKNOWLEDGEMENTS

Special acknowledgement to all the participants for their kind cooperation during the data collection.

REFERENCES

- Eide, A., A. Oshaug, and W.B. Eide, Food Security and the Right to Food in International Law and Development, The. Transnat'l L. & Contemp. Probs., 1991. 1: p. 415.
- Sharp, K., Between Relief and Development: targeting food aid for disaster prevention in Ethiopia. 1998: Overseas Development Institute.
- Nandakumar, T.G., K.Sharma, P. Gulati, A., Food and Nutrition Security Status in India: Opportunities for Investment Partnerships. 2010, Manila: Asian Development Bank.
- Food security From Wikipedia, the free encyclopedia
- Kumar, S. and J. Ali, Analyzing the Factors Affecting Consumer Awareness on Organic Foods in India.
- Ahluwalia, M.S., 'Rural poverty and agricultural performance in India'. Journal of Development Studies, April 1978.
- Saxena, N., Food Assistance Programmes and their Role in Alleviating Poverty and Hunger in India. Delhi: Unpublished, 2002.
- Jenkins, J.C. and S.J. Scanlan, Food security in less developed countries, 1970 to 1990. American Sociological Review, 2001: p. 718-744.

9. Alaimo, K., C.M. Olson, and E.A. Frongillo, Importance of cognitive testing for survey items: an example from food security questionnaires. *Journal of nutrition education*, 1999. 31(5): p. 269-275.
10. Bickel, G.N., M.Price, C.Hamilton, W.Cook, J., Guide to measuring household food security. US Department of Agriculture, Food and Nutrition Service, Office of Analysis, Nutrition, and Evaluation. 2000.
11. Benson, T.D., Africa's food and nutrition security situation: where are we and how did we get here? Vol. 37. 2004: Intl Food Policy Res Inst.
12. Alderman, H. and M. Garcia, Food security and health security: Explaining the levels of nutritional status in Pakistan. *Economic Development and Cultural Change*, 1994.42(3):p.485-507.
13. Nord, M.S., A.K. Raj, N. Webb, P. Houser, R., Comparing household survey-based measures of food insecurity across countries: Case studies in India, Uganda, and Bangladesh. *Working Papers in Food Policy and Nutrition*, 2002.
14. Rahim, S.S., D.Rasool, G.A.Saeed, G., Factors Influencing Household Food Security Status. *Food and Nutrition*, 2011. 2: p. 31-34.
15. Sen, A.K. and W.I.f.D.E. Research, Freedom of choice: concept and content. 1987: World Institute for Development Economics Research.
16. Webb, P.C., J. Frongillo, E.A. Rogers, B.L. Swindale, A.Bilinsky, P., Measuring household food insecurity: why it's so important and yet so difficult to do. *The Journal of nutrition*, 2006. 136(5): p. 1404S-1408S.
17. Bickel GW, N.M., Price C, Hamilton W, Cook JT, Guide to Measuring Household Food Security. University of Department of Agriculture. Food & Nutrition Service. Office of Analysis, Nutrition and Evaluation. 2000.
18. Wolfe, W.S.F., Edward A., Building household food-security measurement tools from the ground up *Food & Nutrition Bulletin*, March 2001,. 22, Number 1: p. pp. 5-12(8).
19. Food Security Scale www.fews.net/foodinsecurityscale. www.census.gov.
20. Bezuneh, M. and Z. Yiheyis, Assessing the Relationship Between Food Insecurity Events and Food Assistance Programs in Two Different Public Housing Communities. 2003.
21. Prättälä, R.P., L. Grinberga, D. Helasoja, V. Kasmel, A.Petkeviciene, J., Gender differences in the consumption of meat, fruit and vegetables are similar in Finland and the Baltic countries. *The European Journal of Public Health*, 2007. 17(5): p. 520-525.
22. Nord, M., M. Andrews, and S. Carlson, Household food security in the United States, 2008. *Economic Research Report*, 2009. 83.
23. Frongillo EA, O.C., Rauschenbach BS & Kendall A, Nutritional Consequences of Food Insecurity in a Rural New York State County. Madison, WI: Institute for Research on Poverty, University of Wisconsin. 1997.
24. Rose, D., Economic determinants and dietary consequences of food insecurity in the United States. *J Nutr Educ*, 1999. 129: p. 517-20.
25. Wohlfarth, T., Socioeconomic inequality and psychopathology: Are socioeconomic status and social class interchangeable? *Social Science & Medicine*, 1997. 45(3): p. 399-410.
26. Link, B.G.N., M.E.Phelan, J.C.Ganz, M.L., Social epidemiology and the fundamental cause concept: on the structuring of effective cancer screens by socioeconomic status. *Milbank Quarterly*, 1998. 76(3): p. 375-402.

How to cite this article: Prabhat A, Begum K. Family food security- factors influencing. *Int J Health Sci Res*. 2017; 7(3):301-307.
