

Educational vs health status on family food security

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ABSTRACT

Education is the key to food security for populations in developing countries. Knowledge with higher levels of education and cognitive assets achieve a higher level of spirituality that prevents disease. Improving women's access to education will be crucial for maintaining global food security. **Objective:** To study the family food security and to understand the educational and health status on family food security. **Methodology:** Two taluks of Dakshina kannada with 350 families each, were the selected population. Demographic details including education were elicited. Health profile was also studied. **Results:** 67-69% of the study population with normal health condition were food secured where in 26-29% were insecured with hunger. More than 50% of the educated females were secured, when both men and women were uneducated, 58% were insecured. **Conclusion:** Education of women contributed extremely to the food security, although education of both adult man and woman had an affect. It is obvious that monitoring food security helps to identify well-being of the population. The measurement of food security is crucial for projection of the need to introduce and monitor intervention.

Key Words : Food security, Food insecurity, Education, Health

INTRODUCTION

Food security critically links national and family 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 (Benson, 2004). However, various household characteristics, such as, income, education, occupation, living condition and health are the determining factors of individuals' food security in the family (Alderman and Garcia, 1994). The food security measure provides independent and specific information on the various dimension of well-being than can be inferred from income data alone (Rahim *et al.*, 2011 and Wolfe and Edward, 2001).

Knowledge with high levels of education provides the cognitive assets to prevent disease and conscientious about their diet to achieve a quality life. More knowledge of disease processes, diet, or other knowledge, not directly related to health may explain why those with more education were more likely to agree that they were conscientious about their diet to prevent disease (Sen and W.I.F.D.E. Research, 1987 and Webb *et al.*, 2006). Scientific thinking, encouraged by education addressed the correlation between education, empowerment and food security, mainly through a number of 'good practice' case studies from all over the world, confronting rural people. It is about strengthening their capacity to achieve food security (Coates *et al.*, 2006). The measurement of

food security is crucial to monitor and evaluate the impact of their programs at the household level (Sen and W.I.F.D.E. Research, 1987 and Webb *et al.*, 2006).

In developing countries, rural women and men play different roles in guaranteeing food security for their households and communities (Michelle, 2008). When women are educated and empowered economically, income flow increases. When women's participation in household decision-making is strengthened, not only does the overall household-asset base increase, but also its composition changes, with women typically spending a higher proportion on food and other items to meet immediate family needs. Similarly, when men along with women engage in household planning for food and nutrition security, families become more food secure (www.fews.net). There are differences in their roles played and burdens in relation to these coping mechanisms, with women bearing the major load.

Women's education and health status have both direct as well as indirect effects on sustainable family food security. There are differences in the roles played by men and women in burdens handled and coping mechanisms, wherein women are known to major load. Finally, future analysis using repeated observations may be needed to examine the relationship between gender and food security (Michelle, 2008). When women are empowered with modern training and the technology needed to transform food production at household level into sustainable, they improve their food security and resilience in the face of climate change and price fluctuations. Consequently, an analysis with particular attention to gender is appropriate in assessing and improving the family food security (Benson, 2004).

The present study focuses on assessing and comparing the educational and health status of the selected adult couples on family food security. Social studies of health and education 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, access to food, and perceptions of health.

METHODOLOGY

Selection of subjects:

Two taluks *i.e.*, Karkala and Moodbidri were selected as our study area with 700 households from each of the taluk as the study population. Cluster sampling was adopted dividing the whole into two halves *i.e.*, 350 households each. Selected subjects cooperated with full efficient support providing information. The demographic information such as family size structure, education and employment status was elicited using pre tested and standardised questionnaire. The study was approved by IHEC, University of Mysore, Mysore, India. A consent letter was obtained from the participants. The content of the letter was read by the contractor/ head and explained to the labour groups. Descriptive analysis was used to present the data; Chi-square analysis was employed for comparisons between variables.

Food security Module:

This is a structured questionnaire covering 5 domains for food security adopted from USDA, 2002 applicable for adults. This elicited information about food available at home and the experience of food shortages within one year.

Identification of the groups with 3 different states of food security, helps to understand the state of severe food insecurity

1. Food secured
2. Food insecure without hunger
3. Food insecure with hunger

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:

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

RESULTS AND DISCUSSION

Health is a relative expression of metabolic efficiency, and is a valued state of existence in individuals from a given community especially adults and the elderly. 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 (Rahim *et al.*, 2011; Coates *et al.*, 2006 and Michelle, 2008). The data presented in Table 1 clearly states that 67 and 69% of the normal male and female partners 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’.

Per cent occurrence of DM was similar among men and women, nevertheless significantly higher per cent (71%) of females were food secured as compared to men (57%). As against DM, higher percentage of men with hypertension was food secured compared to female subjects. Hence our results indicate a higher percentage of men with DM and a higher percentage of female with hypertension had food insecurity. It is difficult to explain this observation; stress may have also contributed to the condition apart from other causative factors. Further, the pattern of distribution of food insecure population into presence or absence of hunger remained essentially similar. A small variations were observed, nevertheless, significantly higher proportion of the food insecure males and females regardless of their health conditions were found to experience food insecurity

Health status	Males						Females					
	N	FS	FIS	FIS		Chi-square	N	FS	FIS	Food insecure		Chi-square
		% (No.)		With hunger	Without hunger			With hunger		Without hunger		
Family food security	700	68.0 (470)	32.0 (230)	28.0 (64)	72.0 (166)		700	68.0 (470)	32.0 (230)	28.0 (64)	72.0 (166)	
N	85.0 (593)	69.0 (407)	31.0 (186)	26.0 (48)	74.0 (138)		86.0 (604)	67.0 (406)	33.0 (198)	29.0 (58)	71.0 (140)	
DM	9.0 (65)	57.0 (37)	43.0 (28)	14.0 (14)	86.0 (14)	4.197 ^{NS}	10.0 (70)	71.0 (50)	29.0 (20)	25.0 (5)	75.0 (15)	2.668 ^{NS}
HT	6.0 (42)	62.0 (26)	38.0 (16)	13.0 (2)	87.0 (14)		4.0 (26)	54.0 (14)	46.0 (12)	8.0 (1)	92.0 (11)	

*P<0.05, **P<0.01, ***P <0.0001 & NS-Non Significant

N-Normal, DM-Diabetes mellitus and HT- Hypertension; Food Secured-FS, Food insecure-FIS

without hunger. Occurrence of food insecurity with hunger varied from 13-26% among men and 8-29% among females.

Nutritional risk due to poor dietary quality can persist across periods of food insecurity and may increase the risk of nutritional deficiencies and diet-sensitive conditions like hypertension and diabetes (Vozoris and Tarasuk, 2003). Invariably, rise in occurrence of hypertension, diabetes, CVD and other disease condition are common in urban occupants. Studies from Canada indicated occurrence of chronic conditions, including heart disease, diabetes, high blood pressure (Bickel *et al.*, 2000). Literature has not provided any information about food security/insecurity in people with DM and HT.

Studies have indicated that Family Food Security is known to be effected by a variety of factors and apart from climate and socio-economic impacts. Education status of family members contributes to food security and is linearly associated with food security (Hompsen *et al.*, 2012). It was imperative therefore to study the education level of men and women counterparts on family food security; data is presented in the Table 2.

It is important to indicate that proportion of families with educated men with uneducated women found a small proportion (13%). It is interesting to observe from the Table 2, that the combination of educated and uneducated counterparts exerted a tremendous effect on food security (statistically extremely significant). Those families where men and women were educated 93% were food secured, followed by those families where only men were educated, 65% were food secured. However, families with men uneducated had a significant association with food insecurity. Women educated with uneducated men, 51% were insecured while both men and women were uneducated 58% were insecured. This demonstrates the variability in food security/in security of the families, related to education of family stake holders.

Education of both men and women is essential to make a family food secure. Our results are demonstrative about the role of education; It can be seen that, in the group with educated couple (man and woman educated) 93% were food secured. Among the 7% who were insecured, 94% had food insecurity without hunger. This means that, an overall percentage of families with risk of severe insecurity were only 1%. It is widely noted that improvement of female educational status is crucial for maintaining global food security (Coleman-Jensen *et al.*, 2011). This in general means the more education a person is, the greater the income they earn, thus more money is available for food. Similarly, households become more food secured when both men and women are earning and

Table 2 : Educational status of male and female counterparts on family food security

Educational status of male and female counterparts		N	Food secured	Food In secured	Food In security		Chi- Square
					Without hunger	With hunger	
% (No.)							
Men educated	Women educated	38.0 (263)	93.0 (245)	7.0 (18)	94.0 (17)	6.0 (1)	153.148***
Men educated	Women uneducated	13.0 (90)	65.0 (59)	35.0 (31)	96.0 (30)	4.0 (1)	
Men uneducated	Women educated	24.0 (171)	49.0 (84)	51.0 (87)	75.0 (66)	25.0 (21)	
Men uneducated	Women uneducated	25.0 (176)	42.0 (74)	58.0 (102)	79.0 (81)	21.0 (21)	

*P<0.05, **P<0.01, ***P <0.0001 and NS=Non-significant

aware of planning to maintain food and nutrition security (Tarasuk *et al.*, 2007).

Degenerative diseases like DM and hypertension were prevalent in the population studied, 8-12% of males and females in the two regions were diabetics while 4-8% were hypertensive. A difference in their anthropometric profile was noted as compared to their normal counterpart (non diabetic non hypertensive). Diabetic and hypertensive males and females were shorter and heavier as compared to the normal subjects. Other parameters such as hip and waist circumferences were markedly lower in normal subjects than those with DM and HT.

The family food security was found to be 67% in the study population, those who were in secured, 72% had no hunger and 28% experienced hunger. A variety of factors was found to associate with family food security such as education status of the family head; education of both male and female had a marked effect. The phenomenal influence was seen when both man and woman were educated. Food security percentage decreased with one of the partners were uneducated, least security was noted in families where both were uneducated. A simultaneous increase in food insecurity with hunger was noted. Socio economic status is a corollary to education; hence a marked effect of SES was noted on family food security. Hence there was extremely significant association between income and food security. Family size was also found to influence family food security.

Conclusion :

According to the data available for rural areas of 22 developing countries, it shows how a higher level of undernourishment, used as a proxy of food insecurity, correlates with a lower level of literacy. However, data on literacy are available only for a very small group of countries, even though the Indian government has launched programs like education and stipend for the poor to enhance literacy among the poor. Being educated improves rural people's capacity to diversify assets and activities, increase productivity and income, access information on health and sanitation, strengthen social cohesion and participation: these are all essential elements to ensure food security in the long run.

Finally, we can conclude that education for rural people is a relevant tool for promoting overall national food security as there is lack of data concerning, as the majority of people in most of the developing countries live in rural areas. And it is in these areas that the largest proportion of world poverty and hunger exists.

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