

Food Behaviours among Male Subjects from Regions in the Coastal Belt of South Kanara: Influencing Factors

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KEYWORDS Food Behaviors. Food Procurement. Food Distribution. South Kanara. Daily Wagers. Professionals

ABSTRACT Food behaviors of male population are less frequently studied; however it is important to understand the food behavior pattern. This study aimed to determine food behavior of adult males belonging to different socio- economic and occupational status from Western belt of coastal Karnataka in South India. Information regarding factors contributing to decision-making about food procurement in the family, eating outside and other food related habits was obtained through pretested questionnaires. Food purchase behaviors were distinctly different in the two groups, professionals (PS) prioritized likes/ dislikes (62.6%) followed by nutritional requirements (24%) while the daily wagers (DW) considered cost of food followed by likes/ dislikes. 32% of DW mentioned eat the food available and 29.3% ate what was liked. On the other hand, 50% PS ate according to their liking. Boiled rice was the staple food. 26.6 and 64.0% of PS consumed pulses daily and weekly while majority (77.3%) of DW consumed weekly. Fruits were consumed more by PS. Sea foods and eggs were consumed frequently by PS. Among the beverages, tea and coffee was used by 94% PS while DW had *Kashaya* (56%) Eating outside was more frequent among PS (56%). Alcohol intake (33%) and smoking (46.6%) were significantly high among DW. Education, income and lifestyle patterns were major determining factors. Decision making for food procurement and distribution was associated with likes and dislikes and the cost.

INTRODUCTION

Food is truly the everlasting pleasure. However, faulty eating habits add to health risk. The present day economic scenario, emerging globalization and growing demands for food have changed the perception about food. Social, cultural and economic factors therefore contribute in the development of dietary patterns. De Castro and Redd (1992). Research has shown that perceived impressions of the social acceptability of particular foods, combined with social pressure leads to changes in dietary pattern. However, beliefs about food and desire for food preferences affect food choice (Drewnowski 1997; Curry et al. 2001; Baeyens et al. 2002). Food behavior is therefore the ultimate dependent variable influencing food intake. Further, availability, cost, and familiarity of food also influence food choices (Steptoe et al. 1995; Mela DJ 1999). Socio-economic status is the most important moderator for food acquisition in the contemporary society (Baeyens et al. 2002) Cultural diversity is a unique feature of Indian society, hence eating behaviors vary enormously; especially people from coastal regions have different dietary practices from other regions (Geront et al. 1980; Nihar 2009). They differ

because of increased use of sea foods, coconut oil and parboiled rice. Gruels made from cereals are commonly consumed as breakfast along with pickle and thick curry.

With the change in life style and activity pattern, eating behaviors have changed as well as the participation in family meal and related activities such as procurement of foods, taking decision about items for meal etc. Socially active life, attending parties or dining outside home are the modern culture that has influenced the traditional dietary practices. Men enjoy a higher privilege of being socially active and therefore tend to have outside eating opportunities. The study area is the coastal region that lies adjacent to the highland of the Western Ghats in south India. The region is experiencing a rapid growth of water based industries and consequent spurt in population. These characteristics make the region different from other parts of the Indian continent. Hence it was proposed to study the current trends in food behavior and family meal participation of men with two different economic status.

This study sought to investigate the existing food behavior and related factors of male subjects in population from coastal region of Karnataka.

METHODOLOGY

The present study is a cross sectional home based survey on 150 adult male subjects from Karkala and Moodbidre taluks, for which purposive selection was adopted.

Selection of the Subjects

75 men aged between 35 – 55 years were included each in two categories of jobs. One group was laborers on daily wages employed in construction industries, cashew factories, *beedi* making etc. (DW) and the other group was professional (PS) like doctors, bank employers and teachers. A purposive selection was adopted. One of the criteria for inclusion of the subjects was their willingness to provide information required for the study. A consent letter was obtained from each participant (the contents of the letter was read and explained to the laborers and those who wished to participate made a thumb impression). The study was approved by the HEC, University of Mysore.

Data Collection

The required information was elicited using pretested interview schedules. Subjective information such as employment, education, social mobility and smoking habit was obtained. Elaborate information about food behavior was elicited. This included food procurement practices, frequency of consuming different foods, participation in family meal, food served at meal time, munching habits, eating outside home, attending weekend parties etc. Ranking method was used to identify the preferences exercised for food purchase and serving at the dining table. The participants were asked to rank their order of preferences.

Statistical Analysis

Descriptive analysis was used to present the data; chi-square analysis was employed for comparisons between variables. Pearson's correlation was done to associate the of food behavior in males from two economic groups.

RESULTS

Results of the investigation are presented in Tables 1 to 7. The general profile of the selected

subjects is presented in Table 1. It can be perceived that the daily wage for men was 150 Rs/day and professionals payment varied from Rs. 10,000 - 25,000. Marked differences can be seen in the educational level between the two economic groups; subjects from PS possessed graduate and postgraduate degrees while those from DW had primary education. Education level showed an extremely high level of significance. Dietary practices also seemed to vary among the two groups, higher percentage (80) of the DW were non- vegetarian than those in PS group, which exhibited a significant association. Other habits like smoking and alcohol consumption was also significantly different; higher percentage of subjects from the PS groups appeared to abstain from smoking and alcohol. An extremely significant association was observed with weekend parties while visiting friends and dining outside home were moderately and mildly significant. Especially weekend parties were seen more among PS group, visiting friends was common among DW, although in small percentage (26.6 vs. 53.4%) dining outside home was seen in 37.4 and 56 percentage of men in the two groups respectively. Interesting observations were obtained with regard to the factors that influenced purchasing behavior of subjects from the two economic categories.

It is evident from Table 2 that the two groups had different priorities; the top listed factor was the likes/dislikes among families in PS while cost was the predominant factor followed by likes/ dislikes in DW. Custom as a factor for food choice is ranked least by both the groups. It is very obvious that according to ranking, custom was ranked 5th in the order of importance. It is also evident that the responses obtained seemed to be significantly associated to economic status.

It can be seen from Table 3, pattern followed for food distribution among selected subjects followed certain trends. Attitude, culture and knowledge about food needs did govern the behaviors. Vast differences can be observed in practices followed by the two groups. Similar to the purchasing behavior, food distribution was governed by likes and dislikes of the individual family member in PS group while availability was important for DW group. It is evident however that likes and dislikes and availability are the most important factors that influenced food distribution. It is discouraging to note that food

Table 1: General profile of the selected subjects (%)

Variables	Description	Economic group n=150		Chi-square		
		DW	PS	Observed value	Critical value	P value
Education Level	School level	80.0 (60)	-	3.841	100.000	< 0.0001***
	College level	20.0 (15)	100 (75)			
Diet Type	Veg	20.0 (15)	38.6 (29)	3.841	6.304	0.012*
	Non- veg	80.0 (60)	61.4 (46)			
Smoking	Yes	46.6 (35)	26.6 (20)	3.841	6.459	0.011*
	No	53.4 (40)	73.4 (55)			
Drinking	Yes Total	33.4 (25)	18.6 (34)	3.841	2.263	0.132 ^{NS}
	Wkly	56.0 (14)	58.8 (20)			
	Ocly	44.0 (11)	41.2 (14)			
	No	66.6 (50)	81.4 (41)			
Visiting Friends	Yes	26.6 (20)	53.4 (40)	3.841	11.111	0.001**
	No	73.4 (55)	46.6 (35)			
Eating Outside	Weekend Parties	Yes	1.4 (01)	3.841	71.331	<0.0001***
	No	98.6 (74)	33.4 (25)			
	Other Eateries	Yes Total	37.4 (28)	3.841	5.250	0.022*
	Daily	50.0 (14)	12.0 (5)			
	Wkly	35.7 (10)	33.3 (14)			
	Occ.	14.3 (04)	54.7 (23)			
	No	62.6 (47)	44.0 (33)			

*P<0.005, **P<0.01, ***P<0.0001, NS - Non-significant

Table 2: Factors influencing food procurement practices of the participants (%)

Influencing factors	Economic groups	Order of importance for procurement Ranking					Chi-square		
		1	2	3	4	5	Observed value	Critical value	P value
Cost	DW	38.6(29)	26.6(20)	18.6(14)	10.6 (8)	5.6 (4)	9.488	38.633	0.0001***
	PS	1.3 (1)	24.3(18)	21.0(16)	33.3(25)	20.0(15)			
Likes/Dislikes	DW	16 (12)	34.7(26)	28.0(21)	18.7(14)	2.6 (2)	9.488	38.396	0.002**
	PS	62.6(47)	9.3 (7)	10.7 (8)	13.4(10)	4.0 (3)			
Availability	DW	20.0(15)	26.6(20)	36 (27)	13.4(10)	4.0 (3)	9.488	2.311	0.068 ^{NS}
	PS	13.4(10)	24.3(18)	40 (30)	14.3(11)	8.0 (6)			
Customs	DW	6.6 (5)	2.6 (2)	5.6 (4)	22.6(17)	62.6(47)	9.488	5.106	0.035*
	PS	6.6 (5)	10.7 (8)	9.3 (7)	20.0(15)	53.4(40)			
Nutritional Req	DW	14.3(11)	14.3(11)	13.4(10)	38.0(28)	20.0(15)	9.488	9.700	0.003**
	PS	20.0(15)	24.3(18)	22.6(17)	25.1(19)	8.0 (6)			

*P<0.005, **P<0.01, ***P<0.0001, NS - Non-significant

Table 3: Factors considered while foods served at meal time to the selected subjects

Variables	Economic groups	Food distribution: Order of importance Ranking				Chi-square		
		1	2	3	4	Observed value	Critical value	P value
Likes/Dislikes	DW	29.3(22))	36.0(27)	21.3(16)	13.4(10)	7.815	7.924	0.048*
	PS	50.6(38)	22.6(17)	13.4(10)	13.4(10)			
Availability	DW	32.0(24)	28.0(21)	26.6(20)	13.4(10)	7.815	8.889	0.031*
	PS	16.0(12)	44.0(33)	33.0(25)	7.0(5)			
Customs	DW	22.6(17)	21.3(16)	21.3(16)	34.8(26)	7.815	9.982	0.019*
	PS	24.0(18)	9.4(7)	10.6(8)	56.0(42)			
Food Req	DW	20.0(15)	20.0(15)	46.6(35)	13.4(10)	7.815	2.929	0.403 ^{NS}
	PS	22.6(17)	25.3(19)	33.5(25)	18.6(14)			

*P<0.005, NS - Non-significant

requirement of individuals was not considered for any such purpose. None of the observations

exhibited statistical association to economic groups.

Table 4: Percent of selected subjects who participated in family meal (eating together)

Meal time	Economic group		Chi-square		
	DW	PS	Observed value	Critical value	P value
Breakfast	20.0 (15)	16.0 (12)	9.488	1.764	0.779 ^{NS}
Lunch	2.6 (2)	1.5 (1)			
Dinner	62.8 (47)	61.3 (46)			
All meals	12.0 (9)	18.6 (14)			
Not eaten together	2.6 (2)	2.6 (2)			

Munching habit was found among the groups 35-75% of DW and PS respectively had the habit of munching. However, the major differences were that subjects from DW did while chatting and PS preferred while watching TV (Table 4).

The frequency of consuming different foods was compared between the two economic groups according to their dietary practices (vegetarian and non- vegetarians) represented in the Tables 5a, b indicates an essentially similar among the different groups suggesting, indicating that the pattern of consumption adopts regional customs.

Significant differences were noted in consumption of green leafy vegetables, fried foods and beverages. DW group consumed greens more frequently and fried foods less frequently which are obviously healthy practices. The beverage consumption needs a special mention, principally tea and coffee intake was common to all, wherein less percentage of DW consumed regularly. *Kashaya* is a special drink prepared using herbs commonly available at home is a healthful drink compared to tea/ coffee. This was consumed regularly by DW than those in PS.

Table 5a: Frequency of food consumption among the selected subjects (plant foods)

Food items	Ec Gp	Non-vegetarians			P Value	Ec Gp	Vegetarians			P Value
		Daily	Wkly 1/2	Mthly			Daily	Wkly 1/2	Mthly	
Cereals	DW(60)	96.8(58)	1.6 (1)	1.6 (1)	0.123 ^{NS}	DW(15)	100 (15)	0	0	0.320 ^{NS}
	PS (46)	86.9(40)	10.8 (5)	2.3 (1)		PS (29)	86.4(25)	6.8 (2)	6.8 (2)	
Pulses	DW	15.0 (9)	71.6(43)	13.4 (8)	0.895 ^{NS}	DW	13.4 (2)	86.6(13)	0	0.068 ^{NS}
	PS	17.5 (8)	71.7(33)	10.8 (5)		PS	41.5(12)	51.7(15)	6.8 (2)	
Green Leaves	DW	50.0(30)	48.3(29)	1.6 (1)	0.024*	DW	66.6(10)	33.3 (5)	0	0.006**
	PS	23.9(11)	74.5(34)	1.6 (1)		PS	20.6 (6)	55.1(16)	24.5 (7)	
Fruits	DW	15.0 (9)	60.0(36)	25.0(15)	0.534 ^{NS}	DW	33.4 (5)	60.0 (9)	6.6 (1)	0.889 ^{NS}
	PS	52.3 (2)	39.1(18)	8.6 (5)		PS	34.5(10)	62.0(18)	3.5 (1)	
Milk	DW	100 (60)	0	0	0.103 ^{NS}	DW	100 (15)	0	0	-
	PS	95.6(44)	4.4 (2)	0		PS	100 (29)	0	0	
Fried Items	DW	0	16.6(10)	83.4(50)	<0.0001***	DW	0	20.0 (3)	80.0(12)	0.002**
	PS	21.7(10)	65.3(30)	13.0 (6)		PS	0	69 (20)	31.0 (9)	
Biscuit	DW	15.0 (9)	68.4(41)	16.6(10)	0.027*	DW	6.6 (1)	26.6 (4)	66.8(10)	0.010*
	PS	36.9(17)	54.3(25)	8.6 (4)		PS	10.3 (3)	68.9(20)	20.6 (6)	
Tea/Coffee	DW	86.8(52)	1.6 (1)	11.6 (7)	0.044*	DW	93.4(14)	6.6 (1)	0	0.977 ^{NS}
	PS	95.6(44)	4.4 (2)	0		PS	93.2(27)	6.8 (2)	0	
Kashaya	DW	60.0(36)	15 (9)	25 (15)	<0.0001***	DW	40.0 (6)	33.4 (5)	26.6 (4)	0.133 ^{NS}
	PS	15.2 (7)	19.5 (9)	65.3(30)		PS	13.7 (4)	55.3(16)	31.0 (9)	
Coke/Soda	DW	0	20.0(12)	80.0(48)	0.216 ^{NS}	DW	0	13.4 (2)	86.6(13)	0.767 ^{NS}
	PS	0	30.5(14)	69.5(32)		PS	0	10.4 (3)	89.6(26)	

*P<0.005, **P<0.01, NS - Non-significant

Table 5b: Frequency of food consumption among the selected subjects (Animal Foods)

Food items	Ec Gp	Non-vegetarians			P value
		Daily	Wkly 1/2	Mthly	
Meat	DW(60)	1.6 (1)	13.4 (8)	85 (51)	0.240 ^{NS}
	PS (46)	2.3 (1)	26 (12)	71.7(33)	
Sea Food	DW	0	58.4(35)	41.6(25)	0.035*
	PS	6.5 (3)	39.2(18)	54.3(25)	
Egg	DW	8.4 (5)	75 (45)	16.6(10)	0.016*
	PS	28.2(13)	52.3(24)	19.5 (9)	

*P<0.005, NS - Non-significant

Table 6: Practices and occasion of munching among the selected subjects

Ecgp	Munching practice		Chi-square			Occasion for munching		Chi-square		
	Yes	No	Observed value	Critical value	P value	Watching TV	Chatting	Observed value	Critical value	P value
DW	34.6(26)	65.4(49)	3.841	0.116	0.734 ^{NS}	8.0(6)	26.6(20)	3.841	7.810	0.005**
PS	37.3(28)	62.8(47)				22.6(17)	14.6(11)			

**P<0.01

The practice of eating meal together with family members is an Indian tradition, however due to the technological development and urbanization and present day life style eating together in family has become less common.

Economic status did not seem to influence the family meal pattern, dinner was the most common meal where the family participated and is evident from the Table 6.

Although comparisons of the practices exhibited certain associations which were statistically significant between the two economic groups, a highly significant correlation was found for the weekend parties. Except for eating out side home all other variables studied exhibited significant correlation to the economic status (Table 7).

Table 7: Correlation coefficient between economic groups and eating behaviors

Determinants	Correlation coefficient "r"
Diet type	0.201*
Smoking	0.203*
Drinking	0.291*
Visiting friends	0.263*
Weekend parties	0.568*
Eating outside	0.184*

*At the level of 5% significance

DISCUSSION

Dietary practices are reflection of economic status and food believes of the families. Influence of urbanization has modified eating behavior to a large extent in the contemporary society, regardless of the economic or religious groups (Geront et al. 1980). The major feature of these changes is brought about by the increased social mobility and interest in trying new foods or eating outside home. Kuhnlein (1989). A family meal which was the tradition of Indian eating behavior is being drifted, and has become an occasional affair. The study area is known to strictly practice traditional eating

behavior, however is now experiencing the changes. It is well known that food behavior and other supporting factors are influenced by each other; factors that are synergistically modulated by the socio-economic factors include the literacy status, income and employment. Studies have reported that higher level of education was a motivating factor for being conscientious about diet (Baeyens et al. 2002). This may be related to ethical concerns about food, such as avoidance of foods associated with issues as determined by individual and social perceptions of food and their availability. (Shafiee and Begum 2009). The study population had wide differences in the practices between; the two economic groups, significantly higher proportions of DW practiced non vegetarianism as compared to the PS, and it was also surprising that the practice of smoking and drinking was significantly higher in DW. On the other hand, social mobility and attending parties was more common in PS. Eating outside home is the culture of the day and was seen common in the study population although it was associated to the economic status at a significant level, 37.4 and 56.0 % of DW and PS mentioned to eat out side respectively. It could be right to comment that our results are essentially similar to other studies in that the educated group do adopt health related dietary practices (Gould et al. 2002).

Eating together in a family is considered as a time to develop bonding and sharing feelings of oneness. Studies have revealed that family meal is an opportunity for healthy eating (De Castro and Redd 1992; Gould et al. 2002) and also participating in activities like purchasing food or sharing decision- making for planning menu are family events that help to establish cordial relationships (Shafiee and Begum 2009). These activities envelope the cultural backdrop for food believes and practices that affect food choices and procurement (Bisogni et al 1996 ; Vernon 1983; Pollard et al. 1998). Baeyens et

al. (2001) hypothesized in broader context, that culture may influence buying and eating behavior directly, but more often it plays a moderating role on other variables to determine inter-individual differences in food likes and eating behavior (Nihar 2009); food likes and dislikes are central to the development and maintenance of eating behaviors (Baeyens et al. 2002; Salvy 2007). Food cost, another important factor, is said to be a complex combination of a food's availability, status, purchasing decision and demand (Steptoe et al. 1995). In the present context, the factors that influence food purchase were likes and dislikes of food, cost and availability of food, while custom was considered the last priority. Nutritional concern exhibited a mixed behavior. Significant differences in ranking order on their preferences, cost was the first priority for DW followed by likes/dislikes while the PS considered likes and dislikes as the prioritized factor followed by availability and cost was found. Economic factor therefore play a crucial role in food choices for low income in general. Kuhnlein (1989). The factor that is concerned for food serving at meal time was also found to be associated with likes and dislikes at the individual level. Probably within the range of food that is served at the dining table, the inter-individual differences for likes or dislikes become important influencing factor deciding the food intake (Table 4). Availability, custom and requirements appear to overlap since the ranking had spread from 1 to 4 indicating their relative importance in both the economic groups.

Differences in dietary patterns were observed across economic groups. Nihar (2009). Non-vegetarians and vegetarians from the two groups reported higher frequency of weekly consumption of fresh fruit and daily intake of greens while fried foods were consumed occasionally. The frequency of consumption of meat and sea food was higher in the PS group; eggs were consumed once or twice week. Beverages were preferred by all the participants regardless of the economic group. (Chrzanowska and Gacek 2009). *Kashaya*, a popular herbal drink has antimicrobial properties which helps to cure indigestion, boosts metabolism and improves memories was consumed regularly by the DW and coke/soda was an occasional drink. The habit of munching was seen among PS while watching TV and the DW group munched while chatting.

CONCLUSION

The pattern of eating and the related behaviors have been studied. The study has brought about the relative participation of male members in family meal and the associated activities. Education marked an extreme level of significance associated with eating behaviors. Influence of economic status of men on their food related behaviors attitudes indicated significant differences. Eating outside home and attending week end parties was most common among men from high income group. Munching was common in all the participants regardless of income however, the occasion and pattern of munching varied in the two groups. Food selection and purchase was based on likes and dislikes for food followed by cost especially for the high income group. Significant correlation was found for the weekend parties.

ACKNOWLEDGEMENTS

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

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