Pattern of consumption of livestock products among adolescents in Kerala*

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Abstract— *The research was conducted among the adolescents in Keralastate to study their livestock products' consumption pattern and to understand thedeterminants of consumption.*
Keywords— adolescents, livestock products, dairy products, meat preparations, consumption.

I. INTRODUCTION

Adolescence is a transitional stage between childhood and adulthood. It is the rapidly growing stage of life. During this stage, protein is essential and the essential amino acids can only be obtained from proteinaceous foods eaten. Protein content is generally higher in animal foods than in plant foods. According to Grigg (1995) meat and cereals are the two most important sources of proteins. Throughout the developed world meat is the main source of protein, where as in the developing countries cereals is the main source. He also reported that protein consumption is positively related to income and the religious taboos influencing meat consumption.

Manyresearchers had reported that increase in the demand for livestock products ismainly due to human population growth, income growth and urbanization. Demand for livestock products depends on socio-economic factors, human health concerns and changing socio-cultural values. Therefore information about consumers' preference is crucial in developing and implementing appropriate livestock improvement strategies. According to World Bank report of 2009, consumption of livestock products are growing only slowly or stagnating, although at high levels in developed countries.

Culture, traditions, customs, taboos also play significant roles in the consumption of certain types of meat (Johnson et al. 2011). Ahmed et al (2004) opined that rapid population growth, urbanization and increase in income have played an important role to increase the demand for dairy products in Ethiopia especially in urban areas.

Though the state of Kerala has greater potential for production of livestock products there is limited documented information on consumption pattern and the constraints associated with the consumption of products. Hence the study was designed with the following objectives

- To assess the consumption pattern of animal protein products among the school going adolescents of Kerala
- To identify determinants of consumption of livestock products among the school going adolescents of Kerala.

II. METHODOLOGY

The study was conducted among adolescent boys and girls in Kerala state of South India. A pretested semi-structured questionnaire was used for data collection. Data were collected through participatory methods, questionnaire techniques and telephonic interviews wherever necessary.

A multi stage random sampling procedure was employed to select samples. First the state was stratified as south, central and northern regions. Then one district each was randomly selected from each stratum. Then three local bodies were selected from the districts. From the identified local body a minimum of 100 respondents were selected. The improper questionnaires were eliminated. Thus a total of 299 respondents formed the sample for the study.The study was conducted during January to May 2017. The data were analysed using simple statistical techniques.

III. RESULT

Results of the study are presented in this section.

Table.1: Socio-personal profile of respondents n=299

Sl.No	Category	Frequency	Percentage
1	**Place of residence**		
	Urban	128	42.8
	Rural	171	57.2
2	**Sex of respondent**		
	Female	160	53.5
	Male	139	46.5
3	**Religion of the respondent**		
	Christian	65	21.7
	Hindu	186	62.2

	Muslim	48	16.1
4	**No of Family Members**		
	1-4	172	57.5
	5-8	125	41.8
	>8	2	0.7
5	**Monthly Family Income (Rupees)**		
	< 15000	262	87.6
	15000 - 25000	28	9.4
	>25000	9	3.0
	Total	**299**	**100.0**

From the Table – 1, it was found that respondents from urban (42.8%) and rural (57.2%) local bodies were included in the study. Among them 53.5 per cent of respondents were female and 46.5 per cent were male.Majority (62.2 %) of the student respondents were Hindus, 21.7 per cent were Christians and Muslims constituted 16.1 per cent of the respondents. It was observed that majority (57.5 per cent) of the respondents belonged to small families with 1 - 4 members and majority (87.6per cent) of the respondents had income of below Rupees 15000 per month.

Table.2: Pattern of consumption of meat

Meat type	**Daily**	**Weekly**	**Monthly**	**Yearly**
Chicken	0	84 (28.1%)	175 (58.5%)	24 (8.0%)
Beef	0	26 (8.7%)	86 (28.8%)	56 (18.7%)
Chevon	0	4 (1.3%)	30 (10.0%)	53 (17.7%)
Others	0	1 (0.3%)	14 (4.7%)	48 (16.1%)
Fish	77 (25.8%)	16 (5.3%)	12 (4.0%)	18 (6.0%)

Major types of meat consumed by the respondents were chicken and beef. From the table it is observed that, majority of the respondents consumed chicken (58.5%) and beef (28.8%) monthly. Other types of meat like chevon, turkey, duck, pork, goose, quail etc. were consumed by some students occasionally.

The proteinaceous food consumed daily by maximum number of adolescents was fish (25.8%).Islam and Jabbar (2010) among the major types of meat consumed in Bangladesh, urban consumers most preferred chicken followed by beef, goat meat, buffalo meat and sheep meat.

Okunlola (2012) reported that the types of meat preferred by the respondents in the decreasing order of percentage were poultry, beef and fish.He also reported that their meat consumption pattern was influenced by access, moderated by income, season, location and their likes and hence their consumption was in the order of beef, poultry and fish respectively. Also it was reported that preferred processing method was frying for half of the respondents.

Table.3: Distribution based on quantity of meat consumed in the family

Quantity of meat consumption	**Weekly**	**Monthly**
<-1	19.4%	39.1%
1.-2	20.1%	30.4%
3.-4	2.0%	3.7%
5-<	0.3%	0.3%

Table 3 showed that in 19.4per cent of adolescents' families weekly meat purchase was less than one kg, in 20.1per cent of the families it was between 1 and 2 kg, 2.0per cent of the families consumed between 3 and 4 kg of meat and0.3per cent of the families consumed 5 or more kg of meat in a week.Less than 1 kg per month was purchased in 39.1 per cent of the families and 1-2 kg was consumed in 30.4 per cent of the families.

Table. 4: Distribution based on the place of purchase of meat

Place of Purchase of meat	**Frequency**	**Percentage**
Farmers	15	5.0
Farm production	34	11.4
Meat shop	256	85.6
Neighbourhood	5	1.7
Super market	2	0.7

Table 4 shows majority (85.6%) of the respondents purchased meats from local meat shops, 5.0per cent of the respondents purchased directly from farmers, 11.4per cent produced in own farm, and 1.7per cent of the meat purchased from neighbourhood and the rest 0.7per cent of the respondents bought from super markets.

Table.5: Distribution based on preferred meat preparation

Preferred meat preparation	**Frequency**	**Percentage**
Curry	152	50.8
Fried	142	47.5
Grilled	7	2.3
Roasted	21	7.0
Others	32	10.7
All of these	14	4.7

From the Table 5, it is evident that majority of the respondents, preferred meat curry with gravy while a least per cent of 2.3 liked to had grilled meat. Just below the half, 47.5per cent of them consumed fried meat and a small percentage preferred roasted and other meat preparations.Okunlola (2012) reported that preferred processing method was frying for half of the respondents.

Table.6: Distribution based on egg consumption of the respondents

Consumption of egg	Daily	Weekly	Monthly
Hen	49(16.4%)	180 (60.2%)	58(19.4%)
Duck	3 (1.0%)	11 (3.7%)	19 (6.4%)
Quail	6 (2.0%)	11 (3.7%)	16 (5.4%)
Others	0	2 (0.7%)	1 (0.3%)

The table 6depicted that, 16.4per cent of the respondents consumed hen egg, 2 per cent consumed quail egg and 1 per cent of them consumed duck egg daily. Other types of eggs were consumed only occasionally.Islam and Jabbar (2010)reported that hen eggs were more preferred than duck eggs.

Table.7: Distribution based on preferred egg preparations of the respondents

Preferred egg preparations	Frequency	Percentage
Boiled egg	45	15.1
Egg curry	155	51.8
Omelette	130	43.5
In pastry	36	12.0
Others	8	2.7
All of these	39	17.0

It is noticed that, most of them preferred egg curry (51.8%) while 43.5per cent of them showed interest to omelette, while 15.1per cent liked boiled egg.

Table.8: Distribution based on consumption of dairy products

Consumption of Dairy Products	**Daily**	**Weekly**	**Monthly**	**Yearly**
Milk	210 (70.2%)	38 (12.7%)	16 (5.4%)	1 (0.3%)
Curd	13 (4.3%)	97 (32.4%)	50 (16.7%)	8 (2.7%)
Butter	7 (2.3%)	5 (1.7%)	20 (6.7%)	17 (5.7%)
Ice cream	1 (0.3%)	47 (15.7%)	116 (38.8%)	34 (11.4%)
Ghee	6 (2.0%)	16 (5.4%)	42 (14.0%)	14 (4.7%)
Milk powder	3 (1.0%)	9 (3.0%)	13 (4.3%)	17 (5.7%)

From the table 8, most of them consumed milk (70.2per cent), 4.3per cent of them had curd,2.3 per cent butter 2.0 per cent of the respondents consumed ghee, 1 per cent of the respondents had milk powder and 0.3per cent of the respondents consumed ice cream daily.Islam and Jabbar (2010) reported that raw fresh milk was regularly consumed by about 58 per cent of the households. Gebrewold et al (1998) reported that the overall milk consumption in Ethiopia was very low. Melesse and Beyene (2009) studied the consumption pattern of milk and milk products in the woreda area and reported that locally processed milk products were dominated in the study area; and the consumption of imported milk products was very low.

Table.9: Distribution based on place of purchase of dairy products

Place of purchase of dairy products	Frequency	Percentage
Farmers/ Neighbourhood	105	35.2
Grocery shops	122	40.8
Milk booth	33	11.0
Home production	32	10.7
Supermarket	12	4.0

The table 9showed that 40.8per cent of the families brought dairy products from grocery shops, because they are locally available in the society. Least 4 per cent of them got it from supermarket because as it seems to be expensive and not available everyone. 1.5 per cent of the participants purchased it from farmers while 11per cent of them brought it from milk booth. 10.7 per cent of respondents produced it in the home itself while 20.1per cent of them brought it from neighbours. Home delivery by producer was the most widely used source of raw fresh milk. Grocery shop was the most common source for pasteurized milk and local traditional market and grocery shops were the most widely used source for powdered milk and other products.

Table.10: Distribution based on the qualities considered while buying dairy products

Qualities considered	Frequency	Percentage
Brand	78	26.1
Colour	40	13.4
Date of manufacture	85	28.4
Price	114	38.1
Size	19	6.4
All of these	28	9.4

Data in Table 10revealed that 38.1per cent of the respondents considered the cost of products, 28.4per cent of them looked for the date of manufacture, 13.4 per cent

of the participants considered the colour of dairy products, 26.1 per cent of them looked for the brand of products, 6.4per cent of the people look the size of products and only 9.4 per cent of the respondents considered all these qualities.

IV. CONCLUSION

The probable reasons for the low consumption of livestock products are low level of income, limited market access,lack of marketing infrastructure, low level of urbanization and lack of rural retail markets for livestock products as suggested by Tafere and Worku (2012). Ogbeide (2015) reported that the increasing socio-economic position of consumers in Nigeria plays an important role in the food consumption patterns. Price, availability and social economic factors were significant in determining consumer preference. Poultry, pig, sheep, goat and cattle are the main livestock of marketing importance**.**Anyiro et al (2013) reported that quantity of meat consumed was influenced by age, annual income, price and household size of the respondents in Nigeria.Speedy (2003) reported that countries that consume the least amount of meat are in Africa and South Asia. The main determinant of per capita meat consumption appears to be wealth. Thornton (2010) reported that the demand for livestock products have been largely driven by human population growth, income growth and urbanization. Demand for livestock products is mainly affected by socio-economic factors such as health consciousness and changing socio-cultural values. Kerala is mainly a consumer state, depending neighbouring states for egg, meat and vegetables. Health consciousness of individuals in terms of quality and safety aspects also results in low intake of livestock products mainly from other states.

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