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Editorial

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The journal provides the platform for the young researchers to publish their research work. It is aimed at motivating the researchers from different disciplines. Even though the journal focuses on various disciplines, the articles are selected for publication based on the relevancy and quality of the topics. The major disciplines covered under this edition are Clothing, Nutrition, History, Women's Studies and Gerontology. Relevant research and review papers are included in this edition. The Editorial board is thankful for the blessing from the almighty. A special word of thanks to all our well-wishers especially the support and encouragement of principal, staff and management. A great word of thanks to all authors for the timely submission of articles. The peer reviews helped in maintaining the quality of each article.

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STANDARDIZATION OF BODY MEASUREMENTS OF TODDLERS

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ABSTRACT

For the construction of well fitting garments proper measurement is essential. In India we do not have a standard body measurement chart. Since there is variation in the body structure among those in North and South it is essential to standardize body measurements for different age groups to construct a well fitting garment. Body measurements of toddlers belonging to South India were taken and standardized. For that individual measurements of toddlers were taken using inch tape following the rules. Then the measurements were standardized based on the chest measurements. The chest measurements were grouped into three. They were A (43 cm – 48 cm), B (48 cm – 53 cm), C (53cm – 58 cm). The modal values of other measurements for these chest groups were calculated as the standard measurement for the particular chest group.

Key Words: *Toddlers, Body measurements, Standardization.*

INTRODUCTION

Well fitting and luxurious clothing can enhance the status of the wearer, which gives him/her a feeling of satisfaction. The main reason for dissatisfaction regarding the garment is the unavailability of a drafting pattern of proper body measurements which would comply with all types of figures. In India, we do not have proper Standard body measurements. Lack of artistic sense and non availability of standardized measurements and paper patterns are major problems in stitching well fitted clothes at home. Therefore it is essential to develop standardized body measurements. Vuralet.al (2007) standardised body measurements of the elderly

women to produce underwear since they felt that the ready garments are usually designed for young people with normal body dimensions and therefore do not address the elderly.

Kids garments are the ones in which anybody can impart any design variations without much social and cultural inhibitions. So for those who wish to bring out their creativity through designing garments for the kids these standardized measurements will be very helpful. Toddlerhood is a period of childhood which gives opportunity to create a wide variety of costumes. According to Hurlock (1998) a toddler is a baby who has achieved enough body control to be relatively independent.

MATERIALS AND METHODS

The investigator selected the toddler-hood age group ($1\frac{1}{4}$ to $2\frac{1}{2}$) for the study. Gupta (2000) strongly stresses that a sample should be so selected that it truly represents the universe. Hence the investigator selected 100 toddlers at random from the Mullakkara village in Trichur District for the study.

As suggested by Coles (1989), the toddlers were requested to stand erect in a natural pose with proper foundation garments and the measurements were taken comfortably without pulling the tape too tightly or loosely. The body measurements taken are shown in Figure-1

Simplicity (1970) remarks that pattern sizes are determined by horizontal body measurements. So the investigator grouped all the measurements based on the chest measurements. The chest measurements were grouped into three. They were A (43 cm – 48 cm), B (48 cm – 53 cm), C (53cm – 58 cm). According to Sherlekar (1981), the standardization of body measurements is necessary to get a specific set of the body measurements which can be said to be the true representation of the whole group. The modal value of each measurement was taken as a standard measurement for the particular chest group.

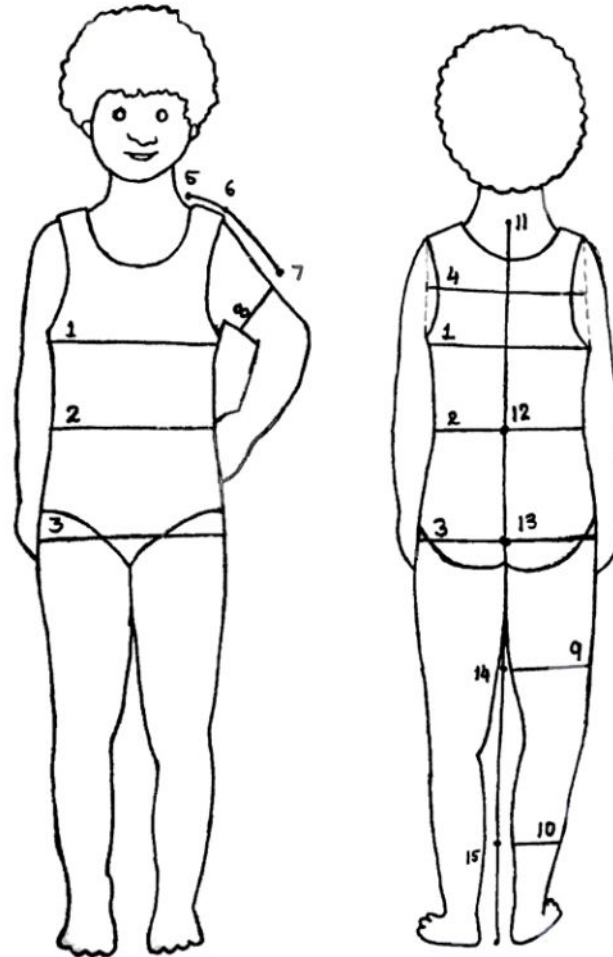


Fig.1 Guidelines for taking body measurements for toddlers

- | | |
|----------------------------|---------------------------------|
| 1. Chest measurement | 9. Mid thigh circumference |
| 2. Waist measurement | 10. Below knee circumference |
| 3. Hip measurement | 11-12 Neck to waist measurement |
| 4. Back width | 12-13 Waist to hip measurement |
| 5-6 Shoulder | 11-14 Neck to mid thigh |
| 6-7 Sleeve length | 11-15 Neck to below knee |
| 8. Lower arm circumference | |

RESULTS AND DISCUSSION

The chest circumference of 100 toddlers ranged from 43 cm- 58 cm. Number of samples belonging to each chest group is given in Table-1

Table-1: Grouping of chest measurements

Particulars	Chest Measurement	Number of samples
Group A	43 cm – 48 cm	30
Group B	48 cm – 53 cm	58
Group C	53cm – 58 cm	12

The chest circumferences of majority of the samples were found in the range of 48 cm and 53 cm.

The modal value of each measurement was considered as the standardized measurement. The standardized body measurements of the three chest groups of toddlers are given in Table – 2

Table-2: Standardized Body Measurements

Sl. No.	Name of the Body Measurement	Body Measurements (in cm)		
		Group A (43 cm – 48 cm)	Group B (48 cm – 53cm)	Group C (53cm – 58 cm)
1.	Chest circumference	45	50	55
2.	Waist circumference	44	49	52
3.	Hip circumference	47	52	55
4.	Back width	21	21.5	21.5
5.	Shoulder width	6.5	7.5	7.5
6.	Lower arm circumference	15	15.5	15.5
7.	Mid thigh circumference	23	24	25
8.	Below knee circumference	16	18	18
9.	Neck to waist	23	25	25
10.	Waist to hip	13	13	13.5
11.	Neck to midthigh	44	45	45
12.	Neck to below knee	58	60	62
13.	Sleeve Length	10	10	10

When comparing the three chest groups 5 to 10 cm variation was found in the measurement of chest, waist and hip circumferences. Four centimeter difference was found in neck to below knee measurement. Two centimeter difference was found in the measurement of mid thigh circumference, below knee circumference, neck to waist and neck to mid thigh measurements. One centimeter difference was found in

the measurement of back width, shoulder, lower arm circumference and waist to hip measurement. The sleeve length remained constant for the three chest groups. There were no significant differences found between the body measurements of male and female toddlers.

SUMMARY AND CONCLUSION

Since grouping was done based on chest measurements, the other measurements were standardized using mode in statistics. The modal value of each measurement was taken as a standard measurement for particular chest group. It could be concluded that the chest measurement of the majority of the toddlers are in the range of 48-53cm. Since the chest measurement of the majority of the toddlers are in the range of 48-53cm (group-B), the modal values of other body measurement of this group were considered as the standardized measurements.

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PREVELANCE OF GOITER AMONG WOMEN IN KOCHI

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ABSTRACT

Iodine is an essential micronutrient required in a minute amount for normal growth and development of human beings. Iodine deficiency disorder (IDD) or goiter is the most common cause of preventable brain damage, mental retardation, and stunted growth and development in children. The study reveals that prevalence of goitre was more in Kochi area. Irrespective of the area goitre is prevalent; it was more among non vegetarians than vegetarians. The reasons may be the consumption of goitrogens and the depletion of nutrients from the soil and water has aggravated the problem. Due consideration has to be given in this area since the prevalence is increasing day by day. Early identification and awareness has to be created among the women. Hyperthyroidism was more among vegetarians and hypothyroidism among non vegetarians. It has been noted in other studies that low quality salts which are deficient in iodine are also available in the markets. This might be a contributing factor for goitre.

Key words: *Goitre, goitrogens, micronutrient, Hyperthyroidism*

INTRODUCTION

Iodine deficiency has several important health consequences that together are called iodine deficiency disorders (IDD). The effects begin before birth and have various manifestations throughout a person's life. The most outstanding abnormalities include detrimental effects on brain development, stillbirths, increased infant and child mortality, and growth abnormalities. An estimated 1571 million people worldwide live in iodine-deficient environments and are at risk of IDD.

Poor health has repercussions not only for women but also their families. Women in poor health are more likely to give birth to low weight infants. They also are less likely to be able to provide food and adequate care for their children. Finally, a woman's health affects the household economic well-being, as a woman in poor health will be less productive in the labour force.

Objectives: To find out the prevalence of goitre in coastal and urban areas. To study the dietary pattern.

METHODOLOGY

The study was comparative in nature; the comparison was between vegetarians and non vegetarians. Survey method was adopted for the study. The area selected for the study was Palluruthy and Mattanchery in Ernakulam district. Palluruthy and Mattanchery were also located in urban areas of Kochi. These areas were selected due to the easy access and availability of enough samples meant for the present study.

The method of sampling adopted for the present study was random sampling. In random sampling method, each and every item in the population has the same probability of being selected. The number of sample selected for the present study was 400 women, with equal distribution from both the areas (Palluruthy and Mattancherry). The tool used to collect the information was an interview schedule. The interview schedule was formulated to find out the background information, a health assessment schedule to assess the health condition of sample, an awareness schedule to assess the awareness of the sample about iodized salt and iodine deficiency and lastly a dietary schedule to assess the dietary pattern of the sample was also used. Tools such as weighing machine and stadiometer were also used to assess the weight and height of the sample to find out the BMI. The data collected were analyzed, interpreted and presented in results. The percentage of responses was calculated, by taking the number or rate of sample favoring each alternative. Later the percentage of responses favoring each alternative was found out.

Table 1 Age wise distribution of the subjects

Age	Non vegetarian (n=21)	Vegetarian (n=9)
25 - 40	9 (43.0)	1 (12.0)
41 - 50	8 (38.0)	3 (33.0)
51 - 65	4 (19.0)	5 (55.0)

Figures in parenthesis indicate percentages

The background information regarding the age of sample shows that among non vegetarians about half of the sample was between the age group 25-40 years (43.0%). Almost 38.0 percent were between the age group of 41-50 years and the remaining 19.0 percent was between the age group of 51-65 years. In the case of vegetarians more than half of the sample (55.0%) were between the age group of 51-65 years. Almost 33.0 percent were in the age group of 41-50 years and the remaining 11.0 percent were 25-40years.

Table 2 Body mass index of the sample

Particulars	CED-III	CED-II	CED*-I	Low normal	Normal	Over Weight	Obesity
Non vegetarian (n=21)	1(5.0)	1(5.0)	1(5.0)	Nil	6(29.0)	6(28.0)	6(28.0)
Vegetarian (n=9)	0	0	1(11.0)	1(11.0)	4(44.0)	0	3(34.0)

Figures in parenthesis indicate percentages
Ref: James et al.(1988)

**CED-Chronic Energy Deficiency*

The information regarding the grade of obesity shows that among non vegetarians 28.0 percent were over weight and obese. Normal weight was observed in almost half of the vegetarians (44.0%) and more than one fourth among (29.0%) non vegetarians. Among non vegetarians 15.0 percent were chronic energy deficient with equal distribution from all three grades, while in vegetarians it was 11 percent.

According to Deakin University study they has found that the rate of morbid obesity in women increased by almost 70 per cent over a 10 year period (James, 2001).

According to study conducted by Mishra (2003) on the topic covariates of overweight and obesity among women in North India states that overweight and obese women age 15-29 are significantly more likely to have experienced a miscarriage or stillbirth.

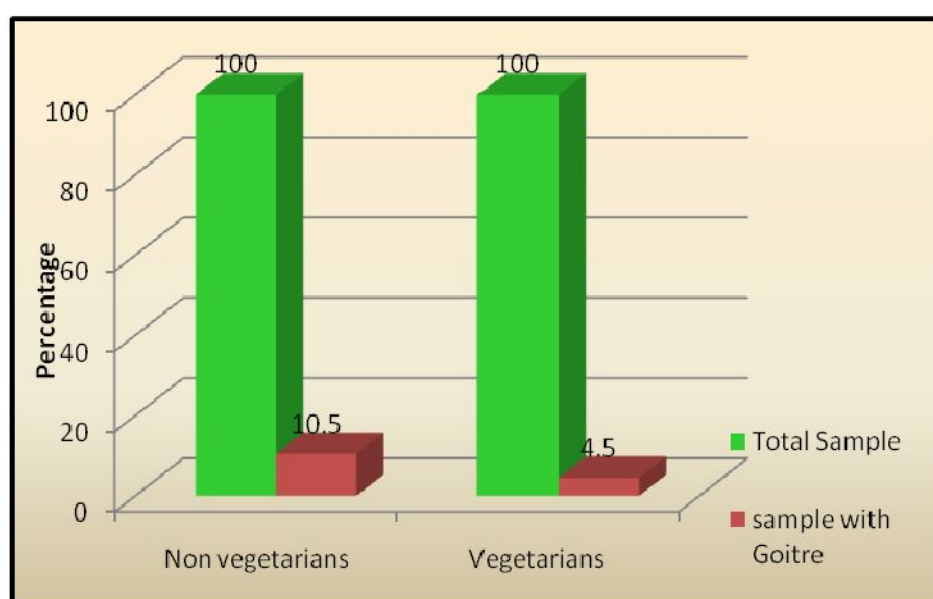


Figure 1 Prevalence of goitre

The information regarding the prevalence of goitre among the sample from both non vegetarians and vegetarians is shown in the figure. Two hundred sample were screened for goitre from each group a total of four hundred sample were taken. Among the non vegetarians about 21 (10.5%) sample were having goitre problems and from 200 samples taken from vegetarians about 9 (4.5%) were having goitre problems that is comparatively less when compared to non vegetarians.

A similar study conducted in Ernakulam district by James and Kumar (2012), there was a high prevalence of thyroid problems among non vegetarians.

Table 3 Type of thyroids among the sample

Particulars	Non vegetarian (n=21)	Vegetarian (n=9)	Chi square	<i>p value</i>
Hyperthyroidism	9 (43.0)	7 (77.0)	22.688	< 0.0001***
Hypothyroidism	12 (57.0)	2 (23.0)		

*** Significant at 1% level

Figures in parenthesis indicate

percentages

The information regarding type of thyroid problem among both non vegetarians shows that among non vegetarians about 57.0 percent of the samples suffer from hypothyroidism and 43.0 percent of the samples suffer from hyperthyroidism. In the case of vegetarians 77.0 percent of the sample suffer from hyperthyroidism and 23.0 percent of the sample suffer from hypothyroidism. The statistical analysis shows the two-sided P value is < 0.0001, considered extremely significant.

Table 4 Grades of goitre among the sample

Particulars	Non vegetarian (n=21)	Vegetarian (n=9)	Chi square	<i>p value</i>
Normal	3 (14.0)	2 (23.0)	2.715	0.2573NS
Grade I	8 (38.0)	3 (33.0)		
Grade II	10 (48.0)	4 (44.0)		
Grade III	Nil	Nil		
Toxic goitre	Nil	Nil		

NS-Not Significant

Figures in parenthesis indicate percentages

The information regarding goitre grades among both non vegetarians and vegetarians shows that among non vegetarians 48.0 percent of the sample suffer from grade II goitre about 38.0 percent of the sample suffered from grade I goitre and remaining 14.0 percent of the sample suffered from normal grade goitre. In the case of vegetarians 44.0 percent of the sample suffered from grade II goitre about 33.0

percent of the sample suffered from grade I goitre and remaining 23.0 percent of the sample suffered from normal grade goitre.

The statistical analysis showed no significant relationship between these groups, since the p value is 0.2573.

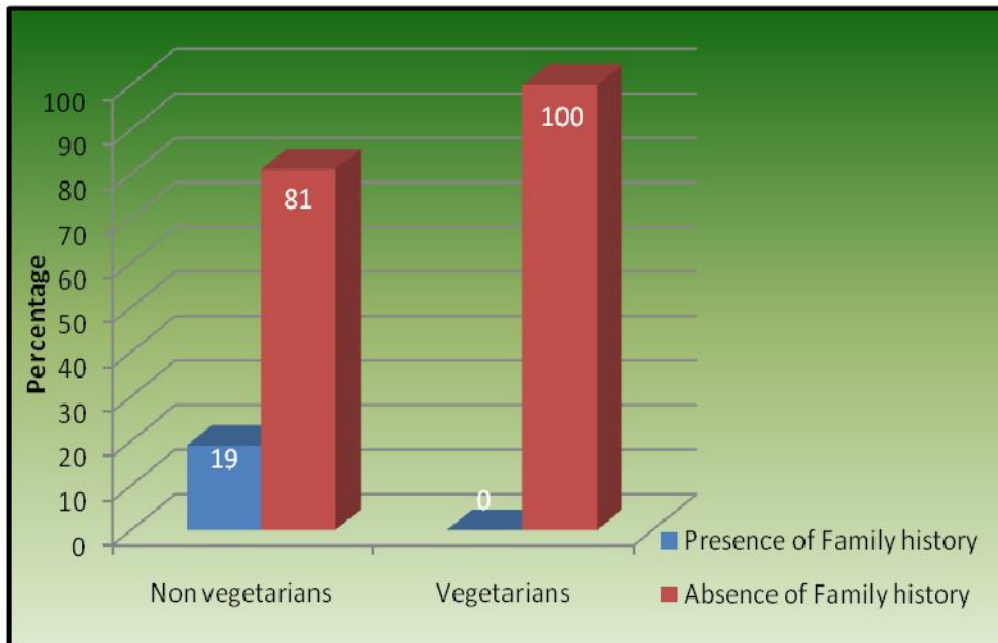


Figure 2 Family history of goitre

The information regarding the family history of goitre among non vegetarians and vegetarians shows that among non vegetarians 81.0 percent of the sample had no family history of goitre and the remaining 19.0 percent of the samples had a family history of goitre. But in the case of vegetarians none of the sample had family history.

According to Hara (1993) thirty-six of the 108 patients (33%) had a family history of autoimmune thyroid disease.

Table 5 Food Frequency

Food Items	Daily		Weekly		Rarely/Not used	
	NVeg (n=21)	Veg(n=9)	NV (n=21)	Veg(n=9)	N Veg (n=21)	Veg (n=9)
Cereals	21 (100.0)	9 (100.0)	Nil	Nil	Nil	Nil
Pulses & legumes	13 (62.0)	4 (44.0)	2 (10.0)	Nil	6 (28.0)	5 (56.0)
Nuts & oilseeds	7 (33.0)	3 (33.0)	12 (57.0)	3 (33.0)	2 (10.0)	3 (34.0)
Milk & Meat	12 (57.0)	6 (66.0)	5 (24.0)	2 (22.0)	4 (19.0)	1 (12.0)
Egg & fish	13 (62.0)	Nil	5 (24.0)	Nil	3 (14.0)	Nil
Fruits	10 (48.0)	5 (56.0)	9 (42.0)	2 (22.0)	2 (10.0)	2 (22.0)
Vegetables	15 (72.0)	7(78.0)	3 (14.0)	2 (22.0)	3 (14.0)	Nil
Green leafy	5 (24.0)	4 (44.0)	12 (57.0)	2 (22.0)	4 (19.0)	3 (34.0)
Roots & tubers	3 (14.0)	4 (44.0)	9 (43.0)	3 (33.0)	9 (43.0)	2 (22.0)
Fats & sugars	19 (90.0)	7 (78.0)	1 (5.0)	1(11.0)	1 (5.0)	1 (11.0)

N Veg: Non Vegetarians

Figures in parenthesis indicate percentages

Veg: Vegetarians

The information regarding food frequency shows that among non vegetarians and vegetarians 100.0 percent of the sample consume cereals daily, 90.0% consume fats and sugars daily, 72.0 percent of the samples consume vegetables daily. About 62.0 percent of the sample consume pulses, legumes egg, fish daily, 57.0 percent of the sample consume milk and meat products daily, 48.0 percent of the sample consume fruits daily, while 42.0 percent of the sample consume fats and sugars daily, 33.0 percent of the sample consume nuts and oilseeds daily and 14.0 percent of the sample consume roots and tubers daily.

In the case of vegetarian (100.0%) all used cereals daily, 78.0 percent of the sample use vegetables, fats and sugars daily, 66.0 percent of the sample use milk and milk products daily, 56.0 percent of the sample use fruits daily, 44.0 percent of the sample use pulses, legumes, green leafy vegetables, roots and tubers daily and 33.0 percent use nuts, and oilseeds daily.

Among non vegetarians weekly consumption of nuts, oil seeds and green leafy vegetables was noticed among 57.0 per cent of the sample this was followed by roots, tubers (43.0%), and fruits (42.0%). Milk and meat products, egg and fish was consumed weekly by 24 percent. In the case of vegetarians 33.0 percent consume nuts, oil seeds, roots and tubers weekly and 22.0 percent consume milk, fruits, vegetables and green leafy vegetables weekly.

Table 6 Frequency of consumption of goitrogens

Goitrogens	Daily		Weekly		Rarely/Not used	
	NVeg (n=21)	Veg(n=9)	NVeg (n=21)	Veg(n=9)	N Veg (n=21)	Veg(n=9)
Broccoli	Nil	Nil	1 (5.0)	Nil	20 (95.0)	9 (100.0)
Cauliflower	Nil	1 (11.0)	3 (14.0)	Nil	18 (86.0)	8 (89.0)
Soy based	Nil	Nil	2 (10.0)	Nil	19 (90.0)	9 (100.0)
Groundnut	6 (29.0)	2 (22.0)	4 (19.0)	4 (44.0)	11 (52.0)	3 (34.0)
Tapioca	3 (14.0)	1 (11.0)	6 (29.0)	3 (33.0)	12 (57.0)	5 (55.0)
Sweet potato	Nil	Nil	7 (33.0)	2 (22.0)	12 (57.0)	7 (78.0)
Maize	Nil	Nil	Nil	Nil	21 (100.0)	9 (100.0)

N Veg: Non Vegetarians
Veg: Vegetarians

Figures in parenthesis indicate percentages

The information regarding consumption of goitrogens among non vegetarians and vegetarians in daily pattern shows that among non vegetarians 29.0 percent of the samples consume groundnuts daily and 14.0 percent of the sample consume tapioca daily. In the case of vegetarians 22.0 percent of the sample consume groundnut daily and 11.0 percent of the sample had cauliflower and tapioca daily.

Among non vegetarians weekly consumption of sweet potato (33.0%), tapioca (29.0%), groundnut (19.0%), cauliflower (14.0%), soya based products (10.0%) and broccoli (5.0%). In the case of vegetarians 44.0% of the samples consume groundnuts weekly. Tapioca (33.0%) and sweet potato (22.0%) was also consumed weekly

Rare consumption of broccoli, soya and maize was also noticed. There are other goitrogens such as kale, Brussels sprout, mustard green, radish and peaches these food stuffs are not included in the list of goitrogens because our samples do not consume these types of food stuffs because it is not commonly available in our market.

Table 7 Mean nutrient intake of women in comparison with RDA

Nutrients	Standard value	Non vegetarian	Vegetarian
		Mean± Standard deviation	Mean ± Standard deviation
Calorie	1875	1153.095±329.24	1410.72±8.55
Protein	50	35.469±6.20	39.795±.05
Fat	30	11.35±.80	13.743±.18
Calcium	400	103.749±7.63	67.662±5.27
Iron	30	11.025±.75	14.093±.09

Mean intake of all nutrients was significantly low than the standard value suggested by ICMR. When comparing vegetarians and non vegetarians except for calcium vegetarians were slightly better in their intake eventhough they did not meet the standards.

CONCLUSION

Prevalence of goitre was more among non vegetarians (10.5%) than vegetarians (4.5%)

Non vegetarians suffered from hypothyroidism and vegetarians from hyperthyroidism. In the case of grade of goitre majority of the samples from both the groups were suffering from grade II goitre. Family history of goitre among non vegetarians and vegetarians shows that among non vegetarians 19.0 per cent of the samples had a family history of goitre. But in the case of vegetarians none of the sample had a family history. Frequency of consumption of goitrogens among non vegetarians and vegetarians shows except for groundnut and tapioca rest of the items were rarely used. Mean nutrient intake shows that only calories and proteins met 75 percent of the requirement, while the intake of other nutrients was considerably less.

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BRITISH COLONIALISM AND CLASSICAL ETHNOGRAPHY: A STORY OF IDEOLOGICAL SUBJUGATION

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ABSTRACT

British colonialism played a crucial role in both the identification and production of Indian “tradition’. Colonialism itself was a cultural project of control. Knowing the natives was their first and foremost strategy. Colonialism introduced many mechanisms to legitimate their rule in the colonies and India was not an exception. This article discusses the annals of Ethnography as a colonial methodology and its application as a political tool of colonial subjugation taken into account the Indian scenario.

ARTICLE

At the turn of the 20th Century, comparative studies of human culture (ethnology) gave way to studies of the details of individual societies (ethnography). And this paradigm shift was motivated by political factors. European rule over Asians and Africans could not have been sustained without a clear degree of understanding of the conquered societies. In India, colonial knowledge was derived to a considerable extent from indigenous knowledge, albeit torn out of context and distorted by fear and prejudice. Without good political and military intelligence, the British could never establish their rule in India or consolidate the dominant international position of the United Kingdom. During the years of conquest, British knowledge of the country was drawn largely from Indian sources and supplied by Indian agents. Some of the colonial administrators served as a bridge between officialdom and academic certification. The driving force for the mapping of India was war and commerce. On the other hand, ethnographic surveys created an intellectual resource for the administrators, military men, traders and merchants. As such they can be regarded as

a model. The false trails they had set not withstanding, they explain or contextualize social and cultural life in new and compelling ways. A new corpus of knowledge was created, which enabled the scholars and generalists alike 'to 'discover', 'imagine' and 'map' India. The geographic mapping of new territories , the cultivation of economic plants for the productive use of colonial land, agricultural theories of rural progression, anthropological understandings of the worker, the noble savage and the cultural mind, social as well as scientific theories ranging from economics to linguistics became important to the British Crown and Parliament, to adventurers and entrepreneurs and to colonial administrators.

Systematic production of knowledge about the world and its inhabitants became not just a by-product of empire but also the fuel by which its engines were run. The empire making process was inextricably interrelated with the development of imperial disciplines.

Colonialism and the Cultural Project of Control

Colonial conquest was not just the result of the power of superior arms, military organization, political power or economic wealth. Colonialism was made possible and then sustained and strengthened as much by cultural technologies of rule. Colonial knowledge both enabled conquest and was produced by it; in certain important ways, knowledge was what colonialism was all about. Cultural forms in societies newly classified as 'traditional' were reconstructed and transformed which created new categories and oppositions between colonizers and the colonized, European and the Asian, modern and traditional, west and the east. Ruling India through the delineation and reconstruction of systematic grammars for vernacular languages, representing India through the mastery and display of archaeological memoirs and religious texts, Britain set in motion transformations every bit as powerful as the better-known consequences of military and economic imperialism.

The colonial powers attempted in their own ways to display its hegemony over the colonized. The nationhood of the imperial powers was displayed through well-defined strategies. For instance, Britain attempted to project its imperial power and

modern nationhood through exhibits of colonial 'Indian tradition' in London – the 1886 Colonial and Indian Exhibition, 1908-Franco-British Exhibition and the 1924 Empire Exhibition. The juxtaposition of Indian 'tradition' and British modernity at the exhibitions denoted India's inferior 'difference' from Britain and thus the necessity of imperial rule in India. These Empire Exhibitions strategically rendered cultural visions of India's pre industrial past as reasons for British rule. The pavilion dedicated to India included models of local villages, agriculture and handmade products, and living displays of Indian artisans and peasants that fashioned the illusion that non-colonial visitors traversed the boundaries of colony and metropole. It contrasted the 'modernity' of Britain's urban, industrial nationhood against the 'tradition' of India's rural, agricultural, and artisanal locales. Imperial exhibitions encouraged European colonizers to envision themselves simultaneously as imperial, imperial, industrial, modern, and opposite the colonized 'other'.

From the 18th century onward, European states increasingly made their power visible not only through ritual performance and dramatic display but through the gradual extension of 'officialising' procedures that established and extended their capacity in many areas. They took control by defining and classifying space, making separations between public and private spheres; by recording transactions such as the sale of property, by counting and classifying their populations, replacing religious institutions as the registrar of births, marriages and deaths and by standardizing languages and scripts. The state licensed some activities as legitimate and suppressed others as immoral and unlawful. With the growth of public education and its rituals, it fostered official beliefs in how things are and how they ought to be. The schools became the crucial civilizing institutions and sought to produce moral and productive citizens. Finally nation states came to be seen as the natural embodiments of history, territory and society.

The establishment and maintenance of these nation states depended upon determining, codifying, controlling and representing the past. The documentation that was involved created and normalized a vast amount of information that formed the basis of their capacity to govern. The reports and investigations of commissions, the

compilation, storage and publication of statistical data on finance, trade, health, demography, crime, education, transportation, agriculture and industry.

The British conquest of India brought them into a new world which they tried to comprehend using their own forms of knowing and thinking. To the educated Englishman of the late 18th and 19th centuries, the world was knowable through senses, which would record the experience of a natural world. The British had not only invaded a territory but through their scholarship had invaded an epistemological space as well.

The cultural background that colonialism had set forth had also led to the rise and growth of imperial disciplines in India. Botany, anthropology, scientific forestry, geography, linguistics etc had their most important sources of data; their objects of investigation located at colonial sites. The colonies were laboratories for the 19th Century sciences of race and resources. Indigenous Indian knowledge of forests and cropping techniques influenced the thinking of late 19th century Hippocratic and physiocratic thinkers in Britain, spurring the theory and practice of a romanticist environmentalism. Caribbean and South Asian plant species radically changed the shape of European botany in the 18th and 19th Centuries. Ethnography, a true colonial methodology, was dependent on colonial infrastructures in order to obtain access to its object of study, the non-western native, who in intricately constrained ways participated in the construction of anthropological knowledge.

ETHNOGRAPHY- A METHODOLOGY

Ethnography is a research methodology that is employed in anthropology. It is a practice and an expression with a capacious historical past that necessarily includes philosophical, political, spiritual and aesthetic elements. These elements have at times defined cultures, named people and told them who they are and what they might become. In short, ethnography grew out of a master discourse of colonization. Colonialism pawned renewed interest in ethnography, mostly as a means of saving cultures that were being virtually annihilated. It began during the mercantilist period in Europe and continued through the 1800s. Exploration and trade increased as did the

lust for land and the greed for gold. European conquerors ravaged what came to be known as North and South America, Latin America and Africa and Asia. Historians, poets, explorers and missionaries kept careful diaries that detailed the conquests of these strange cultures. And indeed the new world cultures were strange to the Europeans. These cultures evidenced such curious customs that Europeans were forced to question what could be deemed natural to humankind and what was culturally specific. Ethnographers and historians working from the late fifteenth to mid nineteenth centuries lived during tumultuous times and provided accounts of cultural annihilation, slavery and torture.

The presence of a dominant culture that intended to exterminate, assimilate or control the subordinate culture placed cultural survival as an anthropological priority. As Marcus and Clifford mentioned in their work, 'the main motif that ethnography as a science developed was that of salvaging cultural diversity. The ethnographer would capture in writing the authenticity of the changing cultures, so they could be entered into the record for the great comparative project of anthropology'.

British Colonialism and Classical Ethnography

Colonization brought with it a perspective concerning who constituted the other and which cultures would or should be documented. The game of territorial expansion was taken over by Britain, France, Spain, Portugal etc. The scramble for power increased by the latter half of the 19th Century. Imperialism and its race prejudice were subjected to criticism in various ethnographic works of Dubois. The writers of the times also understood the ravages of imperialism. The novels of James Joyce – 'The Dubliners' (1914) and 'A Portrait of the Artist as a Young Man' (1916) provided an auto-ethnographic account of struggles in British occupied Ireland. Bronislaw Malinowski's writings on the people of New Guinea, George Orwells's Burmese Days (1934), Gregory Bateson and Margaret Mead's (1942) study of the Balinese, E.Evans-Pritchard's (1940) studies on the Nuer etc. are some of the major ethnographic writings which provide us with some cultural insights on colonialism and ethnography.

Classical ethnographic methods are those that ethnographers have traditionally used, such as carrying out fieldwork and living in the living communities of their hosts, observing activities of interest, recording fieldnotes and observations, participating in activities during observations (participant observation), and carrying out various forms of ethnographic interviewing. Other methods that anthropologists have traditionally used include the physical mapping of the study setting, conducting household censuses and genealogies, assessing network ties, and using photography and other audio/visual methods.

Classical Ethnography : The Indian Scenario

By the second half of the 19th century, the colonial state in India was about to undergo several major transformations. The period also witnessed the emergence of mutually sustaining set of practices and institutions that served both the material as well as the ideological needs of the empire. It was the British who in the 19th century defined in an authoritative and effective fashion how the value and meaning of the objects produced or found in India were determined. This was same in the case of ethnology also. The major interpretative strategy by which India was to become known to Europeans in the 17th and 18th centuries was through a construction of a history of India. India was seen by the Europeans not only as exotic and bizarre but as a kind of living museum of the European past. As De La Crequiniere mentioned in his writings “In India could be found all the characters who are found in the Bible and books which tell us of the Jews and other ancient nations”.

The capture of Seringapatam in 1799 and the final defeat of Tipu Sultan led to the direct involvement of the Company’s government in a systematic effort to explore and document India’s past. But after the Great Rebellion of 1857, British rule became increasingly secure and during this period, caste began to spin a career of its own. The relative silence about caste matters in the early official writings as well as in the collections of local texts was broken by this period. In official manuals, gazetteers, and other statistical data including the census, caste became the most important classificatory schema for the organization of India’s social world. To keep India, the British felt the need to ‘know’ India far better than they had to be about the society of

India and not just its political economy. The ethnographic state was driven by the belief that India could be ruled using anthropological knowledge to understand and control its subjects and to represent and legitimate its own mission. The more the British believed they could know India, the less the native could know them in turn.

The British government's continuous concern to find some method that could produce useful and uniform knowledge for all of India found its expression in ethnographic writings on the latter's population. In the years after the rebellion, the detailed compilation of empirical material on British India escalated dramatically first in occasional manuals of local districts, such as J.H.Nelson's 'The Madura Country', then in the gazetteers and statistical surveys that proliferated as the ethnographic state gained momentum. In 1869, Hunter was appointed Director General of Statistics to the government of India and over the years, gazetteers, manuals and other useful statistical data which were of great use to the British were produced. But the study of ethnology in India was meticulously done under the guidance and action plans of Sir Herbert Hope Risley. The founding of the Ethnographic Survey of India in 1901 added the right impetus to his works. Risley, who was the census commissioner and the director of Ethnographical Survey of India in 1901 had earlier produced the multi volume work-*The Tribes and Castes of Bengal* (1891). But his classic work is 'People of India' in which he summarized his views on the origin and classification of the Indian races based on its historical speculations and his anthropometric research. But Risley's methods invited widespread criticisms.

The ethnographic survey resulted in a series of volumes organized around the encyclopedic delineation of the customs, manners and measurements of the castes and tribes of the different regions of India. By the time of the publication of Maclean's *General Manual of Madras Presidency* (1892) the subject matter of ethnology had been standardized. Each entry included such salient ethnographic facts as caste origin stories, occupational profiles, descriptions of kinship structure, marriage and funerary rituals, manners of dress and decoration as well as assorted stories, observations and accounts about each groups. The texts were obviously designed as easy reference

works for colonial administrators, for the police as well as revenue agents, district magistrates and army recruiters.

Ethnography developed as a result of the dialectic between the colonial and the European states. The theories and fieldwork methods of those engaged in creating ethnographic accounts were predominantly meant to serve as instruments of governmental planning. The ethnographic methodology was used as a tool of colonial governmentality. The European colonial project is a complex construct that functioned within a framework of racial and cultural superiority, as also a spiritual, economic, technological and political hierarchy. The nexus between cultural ways of knowing, scientific discoveries, economic impulses and imperial power enabled the West to make ideological claims to having a superior civilization. The 'idea' of the west became a reality when it was re-presented back to indigenous nations through colonialism. By the nineteenth century, colonialism not only meant the imposition of western authority over indigenous lands, indigenous modes of production and indigenous law and government, but the imposition of western authority over all aspects of indigenous knowledge, languages and cultures. Classical ethnography served a better tool to ascribe these impositions by theoretically establishing the overarching domination of the West.

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PREVALENCE OF OBESITY AMONG THE SCHOOL GOING ADOLESCENT GIRLS (12-14YRS) IN THOOTHUKUDI DISTRICT

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ABSTRACT

The purpose of the present study is to evaluate the prevalence of obesity among the school going adolescent girls (12-14yrs) in Thoothukudi district. Obesity is now reaching epidemic proportions in both developed and developing countries and is affecting not only adults but also children and adolescents. The investigator selected 60 school going obese adolescent girls in the age group of 12-14years using purposive sampling technique, further they were divided into two groups - control(30 in number) and experimental(30 in number). The prevalence of obesity was probably due to their faulty food habits more of fatty items and less consumption of fruits and vegetables. Post nutrition education survey revealed that in the experimental group 10 per cent of the respondents were in the BMI of below <18. 63 per cent of the respondents were in the BMI of between 18-24.9. and 27 per cent were above 24.9. The BMI values among the adolescent girls changed after the nutrition education. The nutrition education may be imparted to the school going adolescent girls to prevent the obesity.

Key Words: *Obesity, adolescent girls (12 – 14 years) and Nutrition education.*

INTRODUCTION

Over the past three decades, the number of young people who are obese has nearly tripled (National Centre for health Statistics, 2010). Obesity during childhood and adolescence has been associated with high rates of sickness and death in adulthood. This means that overweight kids may be putting themselves into serious risk of lifelong obese (Freedman, 2001).One theory is that as the society has become

more convenient foods that are high in fat and calories such as candy, chips, and sugary drinks are produced and consumed more frequently (Goran&Treuth, 2001). Another is that the present day children are leading more inactive life styles than in the past rather than playing outside, children watch television, play video games, and sit at the computer (Robinson& Killen, 2001). Although the technology may be advancing the children are sitting more and exercising less. Being overweight or obese increases the risk for heart problems, high blood pressure, and other medical problems and the psychological impact of being overweight can be devastating (Sothorn et al.,2000). When there is too much body fat, the result is obesity. Obesity can be identified using the Body Mass Index (BMI). BMI is calculated by measuring the proportion of weight to height. (Center for Disease control and prevention, 2006). The prevalence of obesity among the school going adolescent girls in Chennai have been conducted by Sabin (2006) and reported that the prevalence of overweight was high among the respondents. This study was undertaken to analysis the socio economic profile of the obese school going adolescent girls, the nutritional status and the impact of the nutrition education among school going obese adolescent girls of Thoothukudi district.

MATERIALS AND METHODS

The investigator selected 60 school going obese adolescent girls in the age group of 12-14 years using purposive sampling technique (Best and Khan, 2002). A detailed interview schedule was developed by the investigator. The various anthropometric measurements like height, weight, body mass index (BMI), mid upper arm circumference,(MUAC), waist circumference,(WC) hip circumference (HC) were taken for the respondents. Diet survey was conducted to find out the dietary intake of the selected respondents using interview schedule. Clinical examination was conducted to determine the nutritional status of respondents. Information on food consumption pattern was collected using 24 hours recall method. To implement the nutrition education, the selected schools were visited on every month for the period of six months and data collected. The investigator selected respondents who were

moderately obese to create awareness, as the experimental group and the control group was not given any nutrition education.

RESULT AND DISCUSSION

Table 1 Occupational status of the families of the selected respondents

Sl.No	Occupation	Experimental group		Control group	
		No	per cent	No	per cent
1	Coolie	1	3	8	27
2	Business	2	7	12	40
3	Drivers	1	3	4	13
4	Fisherman	26	87	-	-
5	Others	-	-	6	20
	Total	30	100	30	100

Table 1 reveals that, among the experimental group, 87 per cent of the respondents were from fishermen family, 7 per cent were doing business and 3 per cent were coolie workers and drivers. Among the control group, 40 per cent of the respondent's parents were doing business, 27 per cent were coolies, 20 per cent were doing other jobs and 13 per cent were drivers. The highest percentages of the occupational status of the respondent's parents were fishermen (87 per cent) in the experimental group and business 40 per cent in the control group.

Table 2 Annual income of the families of the selected respondents

Sl.No	Range	Experimental group		Control group	
		No	per cent	No	per cent
1	<5000	9	30	5	17
2	5000-10,000	15	50	11	37
3	>10,000	6	20	14	46
	Total	30	100	30	100

Table 2 shows the monthly income of the respondents among the experimental group, 50 per cent of the respondents were in the income group of Rs.5000 – 10,000, 30 per cent of the respondents were in the income group below Rs. 5000/- and 20 per cent the respondents were in the income group above Rs.10, 000/- In the control group 46 per cent of the respondent's family's income was above Rs.10, 000/- 37 per cent the respondents were in the income group of Rs. 5000/- Rs. 10,000/- and 17 per cent the respondents were in the income group below Rs. 5000/- Majority of the respondents in the experimental group were in the income group of Rs. 5000/- Rs. 10,000/- and in the control group majority of the respondents were in the income group above Rs.10, 000/-

Table 3 Nutrient intake of the selected respondents

Sl.No	Nutrients	RDA	Experimental			Control		
			Actual intake	Excess	Deficit	Actual intake	Excess	Deficit
1	Energy (K cal)	1970	2045	+75	-	2196	+226	-
2	CHO(gm)	400	340	-	-60	414	+14	-
3	Protein(gm)	57	62	+5	-	59	+2	-
4	Fat(gm)	30	58	+28	-	70	+40	-
5	Calcium(gm)	600	412	-	-188	486	-	-14
6	Iron(mg)	19	12	-	-7	20	+1	-
7	Vit-A(μ g)	2400	1900	-	-500	2160	-	-240
8	Fibre(gm)	25	12.6	-	-12.4	10.3	-	-14.7

Table 3 exhibits the nutrition intake of the respondents. The experimental group had an actual intake of 2045 Kcal of energy, 340gm of carbohydrates, 62gm of protein, 58 gm of fat, 412 gm of calcium of 12 mg of iron and 1900 μ g of Vit - A respectively. The nutrient intake was excess in energy (75Kcal), protein (5gm) and fat (28gm) and deficit in carbohydrate (60gm), calcium (18gm,) Iron (7mg), vit-A(500 μ g), fibre (12.4 gm) respectively. Among the control group, the actual intake of Energy is 2196 kcal, 414 gm of

carbohydrates, 59 gm of protein, 70gm of fat, 486 gm of calcium, 20mg of iron, 2160 µg of Vit- A, fibre 10.3gm. The nutrient intake was excess in energy(226 kcal), carbohydrates(14gm), protein(2gm), fat(40gm),iron(1mg) and is deficit in calcium(14gm) and Vit -A (240 µg) and fibre (14.7gm).Energy and fat intake are computed and compared with the RDA , to determine the expenditure of the energy balance and fat balance. The study indicates that due to awareness of nutrition education among the respondents from experimental group intake of energy, protein, and fat were lower than the control group, who were not exposed to nutrition education.

Table – 4 Weight Measurements of the Selected Respondents

Sl.No	Range (Kg)	Experimental group				Control group			
		Before		After		Before		After	
		No	per cent	No	per cent	No	per cent	No	per cent
1	30-39	10	33	9	30	6	20	6	20
2	40-49	5	17	7	23	7	23	7	23
3	50-59	12	40	13	44	15	50	15	50
4	>60	3	10	1	3	2	7	2	7
	Total	30	100	30	100	30	100	30	100

The weights of the respondents are given in the table 4. In the experimental group about 33 per cent of the respondents were in the weight range of 30-39 kg, 17 per cent were in the range of 40-49 kg, 40 per cent were in the range of 50-59 kg and 10 per cent were above 60kg. After the nutrition education, the post survey reveals that in the experimental group 30 per cent of the respondents were in the range of 30-39 kg, 23 per cent were in the range of 40-49 kg, 44 per cent were in the range of 50-59 kg and 3 per cent were in the range of above 60kgs. In the control group, 20 per cent of the respondents were in the range of 30-39 kg, 23 per cent were in the weight range of 40-49 kg, 50 per cent were in the weight range of 50-59 kg and 7 per cent were in the weight range of above 60kg throughout the study period. The prevalence of overweight and obesity

was found to decrease to some extent in experimental group. The study reveals that after imparting nutrition education showed positive changes in dietary behaviour and improvement in intake of nutrients and food groups.

Table 5 Body Mass Index (BMI) of the Selected Respondents

Sl.No	Range	Experimental group				Control group			
		Before		After		Before		After	
		No	per cent	No	per cent	No	per cent	No	per cent
1	<18	4	14	3	10	3	10	3	10
2	18-24.9	16	53	19	63	16	53	16	53
3	>24.9	10	33	8	27	11	37	11	37
	Total	30	100	30	100	30	100	30	100

The Body mass index of the respondents is shown in Table 5. In the experimental group, 14 per cent of the respondents were in the BMI of less than <18, 53 per cent of the respondents were in the BMI of 18- 24.9 and 33 per cent of the respondents were in the BMI of above 24.9 before the nutritional educational in the experimental group. After the nutrition education the post survey reveals that in the experimental group 10 per cent of the respondents were in the BMI of below <18. 63 per cent of the respondents were in the BMI of between 18-24.9 and 27 per cent were above 24.9. Whereas among the control group, 10 per cent of the respondents were in the BMI of less than <18. 53 per cent were in the BMI of 18- 24.9 and 37 per cent were in the BMI of above 24.9. In both the experimental and control group there were nearly 30 per cent of obese students, who belonged to Grade I obesity. The obesity was probably due to their faulty food habits, intake more of fatty items and less consumption of fruits and vegetables. It was observed that the BMI values among the adolescent girls have slightly changed after the nutrition education.

CONCLUSION

Based on the findings of the present study it is concluded that the prevalence of obesity was found to be high in the urban area. An increased waist circumference above normal, increased waist- hip ratio and body fat, decreased physical activity, snacking habit, fast food consumption and increased energy intake were seen to be positively associated with weight gain. It can be concluded that Nutrition education, increased physical activity and substituting of high calorie foods with low calorie, low fat and high fibre foods can be recommended and encouraged as an effective method to reduce obesity and adolescent girls.

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CONSUMPTION PATTERN OF FRUITS AND VEGETABLES AMONG ADULTS

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ABSTRACT

A diet high in fruits and vegetables is associated with decreased risk for chronic diseases. In addition, because fruits and vegetables have low energy density (i.e., few calories relative to volume), eating them as part of a reduced-calorie diet can be beneficial for weight management. So assessment of “**Consumption Pattern of Fruits and Vegetables among Adults**” is great importance. For the study, hundred samples between the age group of 19-39 were selected randomly from Madakkatharapanchayath in Thrissur district. All the subjects were interviewed personally. The majority of the subjects interviewed belonged to the age group of 19-24 years and were from both Hindu and Christian religions. Among the selected subjects most of the subject’s belonged to nuclear family and the families were earning more than Rs10000 per month. Even though majority of the subjects were non vegetarian they were aware of nutritive importance of vegetarian diet and they also preferred raw fruits and vegetables. They observed the quality while purchasing fruits and vegetables. But the consumption pattern of green leafy vegetables was very less. Roots and tubers were consumed more whereas fruits and other vegetables were consumed in moderation, by adults.

Key Words– Food Consumption Pattern, Frequency score.

INTRODUCTION

Fruits and vegetables provide health benefits and are important for the prevention of illnesses. Fruits and vegetables contain a variety of nutrients including

vitamins, minerals and antioxidants. Eating the recommended amount of fruits and vegetables each day can reduce the risk of chronic diseases [1].

Vegetables are rich in vitamin A, vitamin C, folate, fiber and potassium. Most vegetables are naturally low in fat and calories. None have cholesterol. Fruit is naturally low in fat, sodium and calories, and rich in potassium, fiber, vitamin C and folate. Fruits and vegetables also contain different phytochemicals, which are natural chemical compounds in plants that maintain proper cell health. Vitamin C in foods like citrus and strawberries help in wound healing and keep gums and teeth healthy. Vitamin C aids in iron absorption. Vitamin A-rich foods such as sweet potatoes, carrots and butternut squash help keep the skin and eyes healthy and protect against infections.

Eating a diet rich in vegetables and fruits as part of an overall healthy diet may reduce risk for heart disease, including heart attack and stroke and may protect against certain types of cancers. Fiber is important for proper bowel function. It helps reduce constipation and diverticulitis. Fiber-containing foods such as vegetables and fruits also provide a feeling of fullness with fewer calories. Fiber in fruit helps to protect against obesity, type II Diabetes and lower cholesterol [2-5].

Eating vegetables and fruits rich in potassium as part of an overall healthy diet may lower blood pressure, and may also reduce the risk of developing kidney stones and help to decrease bone loss. Eating foods such as vegetables that are lower in calories per cup instead of some other higher-calorie food may be useful in helping to lower calorie intake. Fruits and vegetables work as excellent substitutes in different recipes.

Fruits and vegetables should be the foundation of a healthy diet. Most people need to double the amount of fruits and vegetables they eat every day. CDC analyzed data from the Behavioral Risk Factor Surveillance System (BRFSS). This report indicates that, in 2009, an estimated 32.5% of adults consumed fruit two or more times per day and 26.3% consumed vegetables three or more times per day, far short of the national targets [7,8].

Keeping all these factors in mind the present study is designed with the following objectives:

- To assess the socio-economic status of the subjects.
- To determine fruits and vegetable consumption pattern of adults.
- To assess the food preference and dietary habits of adults.
- To assess the nutritional awareness about fruits and vegetables.

METHODOLOGY

The area selected was Madakathrapanjayath in Thrissur district. A total of 100 adults, 50 men and 50 women, belonging to the age group 19 to 39 years were selected randomly for the present study.

For effective study the investigator collected maximum information from the sample. So, the tool used by the investigator was interview schedule. It was designed to find the objectives of the study through a set of questions. Each question must be related to the variables under investigation. Each information was tabulated and the results were analyzed.

RESULTS AND DISCUSSIONS

Socio-economic status of the families

Socio economic status of the families was studied. It was conducted among Hundred Adults between the age group of 19-39 years. The data revealed that 41 per cent of the subjects belonged to the age group of 19-24 years and 28 per cent of the subjects were in the age group of 25 – 29 years. In the present study, 53 per cent of the subjects were Hindus followed by 47 per cent Christians. Majority (52%) of subjects were officials. A greater prevalence of nuclear family system in the society was reported. On the basis of monthly income of the families forty three per cent were earning more than Rs10000.

Food consumption pattern of the subjects

Food consumption pattern of the subjects were studied with respect to their dietary pattern, food habits and knowledge, frequency of use of various food items of the subjects etc.

The study depicted that majority (96%) of the subjects were non vegetarian but all were aware about the nutritional importance of fruits and vegetables. Ten percent of the subjects occasionally used fruits and vegetables as medicine, mainly drumstick leaves. Drumstick leaf juice is used for the prevention of respiratory disorders such as asthma, bronchitis and tuberculosis, for several sexual disorders, high BP, for glossy and lustrous hair. Extract from its leaves mixed with warm milk is used as a tonic to purify blood and build strong bones [9].

The study revealed that majority (90%) of the subject's families purchased fruits and vegetables daily. Thirty per cent of the subjects had kitchen garden at home, which grows mainly spinach. From this study it was found that, the subjects observed food quality while purchasing fruits and vegetables.

Ninety five per cent of the subjects consumed fruits as raw and they consume fruits and vegetables as soon as chopped. During the processing of fruits and vegetables, several types of oxidative reaction may occur, leading to the formation of oxidized products. These reactions cause browning reaction, which resulting in the loss of nutritional value by the destruction of vitamin and essential fatty acid [10].

Ninety nine per cent of the subjects preferred jam than other forms like pickle, jelly etc. as preserved form of fruits. Majority (75 %) of the subjects prefer peeled fruits and vegetables. If fruits and vegetables are consumed raw, extra care is needed in cleaning them. They are washed with hot salt water to remove the insects or washed under running tap water (Srilakshmi, 2007). The results of the study coincides with the review of "Food Science" by Srilakshmi, that majority (80%) of the subjects follow different methods for cleaning fruits and vegetables before cooking.

Frequency of use of different food items by the subjects

From the study it was found that seventy per cent of the subjects included green leafy vegetables in their diet once a month and only thirty per cent included it twice a week. Majority of the subjects consumed roots and tubers (70%) and other vegetables (50%) daily. Sixty per cent of the subjects included fruits in fresh and dried form (locally grown fruits only) in their diet twice a week.

The frequency of use of various food items was measured on a four point scale. The result obtained for each item on the basis of frequency is given in Table 1. Mean per cent score over total score for these foods was hundred. There were changes in the mean score, depending on its frequency of use. Table 1 reveals that the percentage score over total score obtained for roots and tubers and other vegetables were 97.5 and 80 respectively. For fruits the per cent was 67.5 whereas green leafy vegetables scored 40 per cent.

Table 1: Food use Frequency Scores obtained for various food items

Food items	Mean score	Percentage score over total score
Green leafy vegetables	1.6	40
Roots and tubers	3.9	97.5
Other vegetables	3.2	80
Fruits	2.7	67.5

Based on the percentage of mean score obtained the food articles were further classified into 3 groups, most frequently used foods, moderately used foods and less frequently used foods. The details are presented in figure 1.

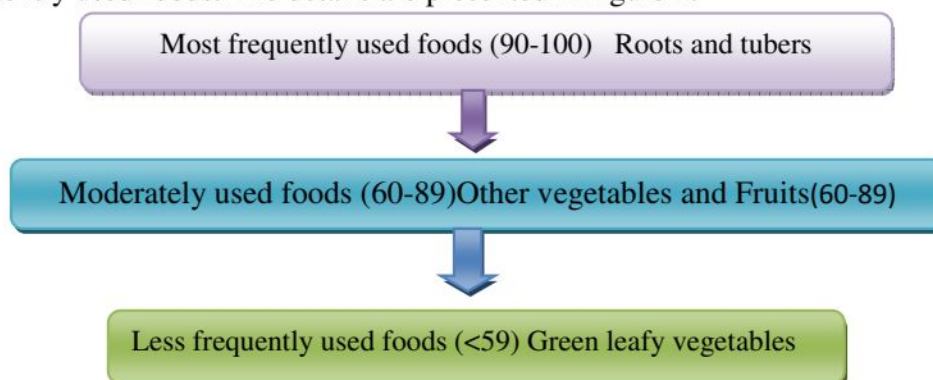


Figure 1: Classification of food items based on food use frequency scores

Roots and tubers were found to be most frequently used food item while other vegetables and fruits were moderately used food item, whereas green leafy vegetables intake was inadequate.

SUMMARY AND CONCLUSION

It can be concluded that roots and tubers were consumed adequately, fruits and vegetable were consumed satisfactorily but the consumption of green leafy vegetables was inadequate in the daily diet of many adults. Diet with plenty of fruits and vegetables provides several health benefits. India is currently undergoing rapid socio-economic, demographic, health and nutritional transition. These results helped to identify the poor eating habits of adults. Therefore, implementation of programs to encourage higher fruit and vegetable intakes is a great necessity. These findings underscore the need for interventions to improve fruit and vegetable access and affordability, as a means of increasing individual consumption.

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ECONOMIC COSTS OF VIOLENCE AGAINST WOMEN

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ABSTRACT

Violence against women has been recognized internationally as a serious violation of women's human rights. Atrocities against women are increasing at an alarming rate at regional, national and international levels. It is quite true to identify that the incidence of crimes against women is a negative indicator of development. The costs of violence against women are borne by individuals, families, communities and societies as a whole. Measuring the costs of violence against women also gives the human story at easily understandable magnitude. Thus violence is complex and diverse in its manifestations with far - reaching and long - lasting consequences. Its elimination requires a comprehensive, systematic and determined response.

Key Words: *Violence, Interpersonal Violence, Ecological Model, Economic Costs of Violence*

INTRODUCTION

Defining Violence against Women

The Declaration on Elimination of Violence against Women adopted by the UN General Assembly in 1993, defines "violence against women as any act of gender-based violence that results in or likely to result in physical, sexual or mental harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or in private life. WHO defines violence as: "The intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community that either results in or has a high likelihood of resulting in injury, death, psychological harm, mal development or deprivation". In its World Report on Violence and Health (2002) WHO makes a

strong case for prevention of violence by highlighting the enormous economic costs inflicted by its consequences. It clearly explains the risk factors of violence.

OBJECTIVES

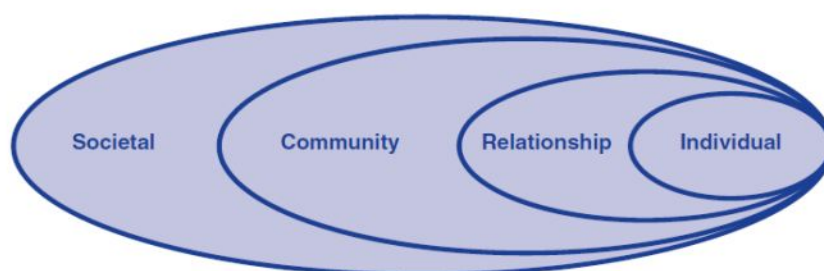
- To examine the prevalence of violence against women in Kerala.
- To have an understanding of the various costs resulting from violence against women

METHODOLOGY

The study exclusively relies on secondary sources of data. Secondary data on violence against women published by the State Crime Records Bureau and National Crime Records Bureau are used for the study. A trend analysis of the data has also been attempted.

The Ecological Model of Violence

The Report on Violence and Health adopted an ecological model that organizes the risk factors for interpersonal violence into four interacting levels: the individual level, relationships, community contexts and societal factors.



Source: Krug E G (2002), World Report on Violence and Health, Geneva, World Health Organization

Individual level risk factors such as age, income, education, psychological and personality disorders, habit of substance abuse, use of alcohol, history of engaging in violent behavior, can be the underlying factors behind violence. Poor parenting, family dysfunction, marital conflict, association with friends having violent behavior increases the risk for interpersonal violence. The community level risk factors emerge

from neighborhoods, schools, workplaces and other institutions. Poverty, high residential mobility and unemployment, social isolation, the existence of a local drug trade, and weak policies and programmes within institutions also increase the risk of interpersonal violence. Lapses at community level from schools, work places, poverty, unemployment, social exclusion, influence of mafias, all can explain ones inclination to engage violent activities. Society level risk factors cover defective economic, social, health and education policies, rigid social and cultural norms, easy availability of means to execute atrocities, loop holes in laws etc.

Heise found that gender based violence against women takes many forms and occurs throughout a woman's life cycle.

Table 1
Forms of Violence against Women

Phase	Types of Violence
Pre –birth	Sex selective abortions, battering during pregnancy, coerced pregnancy
Infancy	Female infanticide, emotional and physical abuse, differential access to food and medical care
Girlhood	Child marriage, genital mutilation, sexual abuse by family members and strangers, differential access to food, medical care and education.
Adolescence	Violence during courtship; economically coerced sex (e.g., for school fees); sexual abuse in the , rape, sexual harassment, arranged marriage, trafficking etc.
Reproductive age	Physical, psychological and sexual abuse by intimate male partners and relatives, forced pregnancies by partner, sexual abuse in the workplace, sexual harassment, rape, abuse of widows including property grabbing and sexual cleansing practices.
Elderly	Abuse of widows including property grabbing, accusations of witchcraft, Physical and psychological violence by younger family members, differential access to food and health care.

Source: Heise, Pitanguay and Germain (1994), Violence against Women; The Hidden Health Burden. World Bank, Discussion Paper, Washington D.C; The World Bank.

Violence against Women in Kerala

Gender based violence is a common reality and it persists across all kinds of societies at greater or lesser freedom. This negative indicator has been widely

recognized as a clear case of violation of human rights. Though the state of Kerala boasts of its exceptional achievements in various social development indices, elements of patriarchy still holds the state away from gender equality. The actual dimension of the atrocities being committed against women would be horrifying as many of the cases goes unreported. An analysis of the available statistics (reported cases) on violence against women gives a grim picture of what exactly is the state of a women's life in Kerala.

Table 2 concludes a surge in the number of reported cases of domestic violence against women in the form of cruelty by husband or relatives over the specified 7 year period (2008-2014), followed by rising incidence of molestation. Data on registered number of cases under dowry deaths seems to be less in number among the four categories. This further hints the persistence of increasing cases of interpersonal violence at household level.

Table 2 Trends on Violence against Women in Kerala

Crime Heads	2008	2009	2010	2011	2012	2013	2014
Dowry deaths	31	20	22	15	32	21	13
Molestation	2745	2540	2936	3756	3735	4362	2760
Sexual Harassment	258	395	537	573	498	404	165
Cruelty by husband or relatives	4138	4007	4797	5377	5216	4820	3019

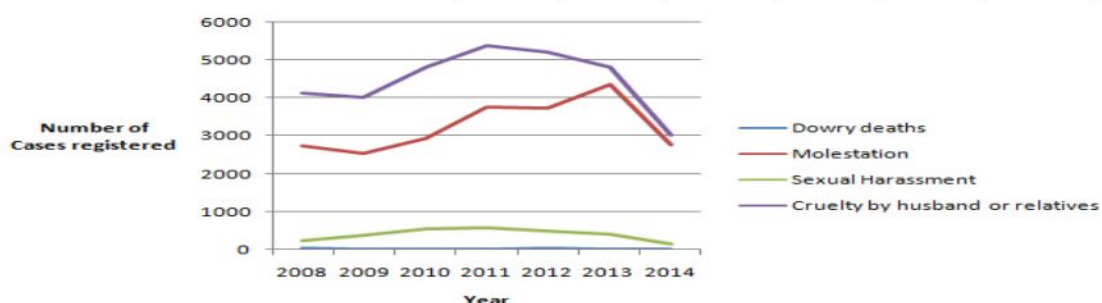


Figure 1

Source: IPC Cases, State Crime Records Bureau, 2014

A trend analysis of the above table is attempted below

Table 3 Reported Cases of Crimes against Women in 2014 (Up To July)

Sl No	Districts	Rape	Molestation	Kidnapping	Eve-Teasing	Dowry Death	Cruelty By Husband /Relatives	Other Offences
1	Trivandrum city	46	180	4	11	1	88	51
2	Trivandrum Rural	76	358	7	14	4	230	84
3	Pathanamthitta	29	108	9	6	0	78	74
4	Kollam city	44	193	4	12	1	170	42
5	Kollam rural	59	150	12	4	1	184	16
6	Alappuzha	38	154	5	6	0	177	12
7	Idukki	46	112	5	9	0	95	30
8	Kottayam	35	135	2	14	0	111	32
9	Ernakulam city	41	111	1	12	0	97	38
10	Ernakulam rural	36	142	3	23	0	102	194
11	Thrissur city	19	61	0	7	0	79	155
12	Thrissur rural	56	189	4	13	1	277	150
13	Palakkad	58	97	10	5	4	270	35
14	Malappuram	54	225	3	4	0	373	251
15	Kozhikode city	18	63	1	3	0	110	166
16	Kozhikode rural	36	144	2	2	1	175	79
17	Wayanad	36	81	6	3	0	60	59
18	Kannur	36	132	5	7	0	222	207
19	Kasargod	26	87	3	4	0	121	143

Source: State Crime Records Bureau, 2014, TVPM, Kerala.

Table 3 shows the various forms of atrocities widely prevalent against women in various districts of Kerala. The most number of cases are recorded against two crime heads- molestation and cruelty by husband and relatives.

The costs of violence

Studies on the prevalence of violence against women worldwide indicate that violence that permeates every corner of the society is wide spread and costly. Based

on the consequences of violence, costs of violence can be put into six major categories.

Justice

Both the perpetrators and victims of violence have the equal right to go through a fair and formal court trial. Execution of law and delivery of justice necessitates buildings for police stations, courts, penal institutions and their running expenses, policing, court trials and proceedings, compensation to victims, public prosecutors, judges etc.

Health

The state has to build up and equip its health infrastructure to address the health care concerns resulting from violence. Direct costs cover out of pocket expenditure incurred by victims, capital expenditure in the form of land acquisition for and, construction of hospital buildings, setting up of related infrastructure like, laboratory equipments, vehicles etc. Huge expenditure has to be made, to arrange material inputs like food, drugs, electricity, water, waste treatment mechanisms to handle biological wastes etc. Labour costs involve expenditure related to hiring of health care professionals like, physicians, specialized doctors, psychologists, physiotherapists, nurses, paramedical staffs, pharmacists, technicians and other supporting staffs.

Social Services

It is necessary to arrange various provisions of public services to support both victims and perpetrators of violence against women. Social services include social welfare agencies, NGO and other voluntary organisations helping abused women and their children. The service may be provided through a church, missionaries, community centers, counseling centres, rehabilitation centres, or by a committed social worker, religious leader or private agency. It costs heavy to government agencies to establish organizations like Women Commission at national and state levels, women cell to protect and promote interests of Women, administering social welfare payments, help to earn livelihood to the victimized women, rehabilitation of

the victimized, emergency helpline services, complaint cells, mental asylums etc. The government also bears indirect costs such as time in creating laws, administration of ministries responsible, policy analysis, research initiatives and public information programs etc.

Education

Special attention has to be given to children who became mere witnesses of atrocities at home. They may develop behavioral problems and learning disabilities and trauma. Special education services, including counseling have to be given. Proper training has to be given to the abused women to re-enter the workforce. Indirect costs may manifest in the form of deterioration of human capital by way of reduced earning capacity, poor educational attainment etc.

Business and employment costs

Violence against women adversely affects the economic performance of a country as it lowers women's productive capacity which results in loss in tax revenue, reduced output and consequently lower Gross National Product. The productive sector has to bear losses like lost time at work, reduced productivity and attention, lost profit from reduced productivity, lost time of co-workers who compensate the absence of the victim and extra payment made to them, administrative costs to process her time off, cost of searching and training her replacements. The firm has to spend much on the maintenance of anti harassment cell, grievance cell, and processing of harassment petitions at work place.

Personal costs

Victims and their families have to deal with substantial out of pocket expenses for restoration of their mental and physical well being, care of children who happen to be the witnesses. Added expenses like relocation of the family, replacement of damaged belongings may put extra pressure on their household expenditure. This necessitates quantitative and qualitative change in their regular consumption pattern badly affecting their overall health status.

Violence against women therefore entails massive costs to the State, and has a dragging effect on all other social and economic development efforts, particularly in humanitarian and development contexts. It is better to prevent violence rather than dealing with its invading effects that may invite substantial costs.

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AGEING SCENARIO IN KERALA

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ABSTRACT

This paper examines the current scenario of ageing in the state of Kerala. Kerala ranks highest in India with respect to human development index, social development index and gender development index. The state is often described as a land of 'good health at low cost' and is reported to have the lowest rural-urban inequalities in public health status. But Kerala finds itself facing a huge human development challenge in the form of its elderly population, burgeoning faster than in any other state. This terrific growth may pose mounting pressures on various socio economic fronts including pension outlays, health care expenditures, fiscal discipline, savings levels etc. Again this segment of population faces multiple medical and psychological problems. There is an emerging need to pay greater attention to ageing-related issues and to promote holistic policies and programmes for dealing with the ageing society

Key words

Ageing, longevity, elderly, fertility rate, demographic transition

INTRODUCTION

Population ageing has become one of the most important global trends in the twenty first century. The process which first started in low fertility western societies and in Japan is now spreading to the developing countries of Asia, Africa and Latin America. Countries like China and India will not only be at the forefront in terms of absolute number of total population, but also in terms of absolute number of the elderly (60+) population. The revolution in longevity and the steady declining fertility rates dramatically raised the number and proportion of elderly (60+) all over the world. The rate of increase in the number of aged persons at a pace higher than that of the general population has been pronounced in our country. But in the case of

Kerala, this phenomenon has been felt far more than even in some of the developed countries.

Current scenario of ageing in Kerala

Kerala ranks highest in India with respect to social development indices such as elimination of poverty, primary education and health. Population census of 2011 has placed Kerala in a proud position among the states of India and the development features of the state stands at par with the developed nations of the world. Kerala has entered the third stage of demographic transition, attained replacement level fertility, or total fertility rate (TFR) of 2.1, the lowest crude death rate around 6 per thousand, birth rate 15 per thousand population, lowest infant mortality around 10 per 1000 live birth, highest life expectancy at birth (75 years) and highest literacy rate (94 percent). With a good track record of social development indicators, Kerala is all set to witness a demographic transition with a rise in the proportion of aged in the total population along with one of the lowest population growth rates in India that is 3.44%. One of the important consequence of this is population ageing.

Research Problem

Kerala has the unique distinction of being the first state in India to complete the demographic transition. High life expectancy and low fertility rate in the state as a result of improvement in health infrastructure may be one of the reasons for increased in aged population. The ageing process is happening much faster in south India, especially a state like Kerala compared to the other northern states. Projections show that by 2026, Kerala will reach the level of demographic status experienced by Japan, Germany and Italy today. The emerging changes in the age and sex structure of Kerala's population, particularly at old and older ages will have a profound impact on the demographic landscape and are expected to pose multifaceted developmental challenge.

Importance of the study

Kerala is presently going through a phase of demographic paradox wherein it has to capitalize on the demographic window of opportunity by investing in youth and at the same time focus on an increasing elderly population. It is predicted that the number of elderly in Kerala will reach 7.2 million or 20 percent of the population in 2021 and 37 percent in 2051. The breakdown of traditional joint family system, massive employment of women, rapid rates of rural-urban migration and a decline in the pool of youth resources has posed new challenges in the care of the elderly population.

Objective

The major objective of this paper is to understand about the ageing scenario of Kerala from the 2011 census compared to earlier census as well as projections for the next 50 years. To examine the policy implications of the population ageing for Kerala.

METHODOLOGY

Data required for the present study has been collected mainly from various publications of the 'Sample Registration System' (SRS) of the Registrar General of India starting from 1970s to the year latest period 2011. Information for the projected periods are collected from the single source Population Reference Bureau (PRB's) 2007 publication entitled "The future population of India: A Long range Demographic View".

Demographic Transition in Kerala

Demographic transition is a change from high fertility and mortality to low fertility and mortality. The evidences of this transition are reflected in the current demographic trends of the state. In the succeeding paragraphs, an attempt is made to examine the pattern of demographic transition in the state.

Kerala's total population as per 2011 census is around 3.36 crore, of which 26.1 percentage represent children (0-14) which is the lowest among the major states in

India. Proportion of people in the working age group (15-59) Kerala is second only to Tamil Nadu (63.7%). The proportion of population above 60 years in Kerala is 12.6 percent, which is the highest among the major states in India. Their numbers are expected to increase to 57 lakh in 2021 and to 120 lakh in 2061. Thus, almost every sixth individual in Kerala is expected to be senior citizen by 2026.

Table 1.1 Demographic Profile of Aged in Kerala

Years	Aged population(in thousands)		
	60 +	70 +	80+
1961	986	363	85
1971	1328	496	125
1981	1910	712	186
1991	2574	1001	290
2001	3335	1401	389
2011	4884	2260	708
2021	7205	3223	1039
2031	10001	4906	1538
2041	11584	6758	2401
2051	11861	7439	3256

Source: Various Census Reports of India, and
Population Projections for Kerala, Bhat and Rajan, CDS.

The population trends in the state show that the older population in the state has increased and reached 1.9 millions since 1961. For the period 1991-2011, the state had an increase of 75 percent in 60+ population and 80+ populations in the state faced

an increase of 109 percent. Of this 85000 elderly belongs to the category of oldest old (age group 80 and above).

Table 1.2 Percentage of elderly population to total population in the selected states

State	Age group of 60 and above
Kerala	12.6
Punjab	10.3
Tamil Nadu	10.4
Himachal Pradesh	10.2
Madhya Pradesh	7.1
West Bengal	8.2
Uttar Pradesh	6.8
Bihar	7.4
Assam	6.1
Odisha	9.3

Source : - Census Data 2011

The share of Kerala's elderly in the total elderly population of India is four per cent. According to the 2011 Census, more than 12 per cent of Kerala's population comprises the elderly. In terms of the proportion of elderly in the population in 2001 as well as 2011, Kerala ranks first, with Tamil Nadu and Punjab occupying the second position, followed by Himachal Pradesh and Maharashtra.

Table 1.3 Old - Dependency ratios

Name of the State	Percentage in population
Kerala	196
Goa	168
Himachal pradesh	161
Punjab	161
Tamil Nadu	158
Meghalaya	84
Daman and Diu	81

Source: Census Reports -2011

The aged dependency ratio (the number of persons above 60 years of age and above per 100 persons in the working age group of 15 to 59 years) is to increase from 17 to 76 during the period from 2001 to 2061. Compare to other states Kerala has the highest dependency ratio.

FINDINGS

Major findings of the study are the following

The number of aged persons, as a proportion of the total population in Kerala, has increased at a rate double than the overall growth rate of population . This is a demographic pattern the state shares with other parts of the world. The study points out that Kerala added one million elderly every successive year since the census of 1981. This increment of elderly population reveals that the 80 plus population of Kerala increased by 0.1 million every census year since 1981 till 2001 and in 2011 the same is to the tune of 0.2 million. This clearly shows that the 21st century is witnessing the 'Ageing Scenario' more rapidly than the preceding century .

The study found that the older working age population in the state is estimated to double in number in the 20 years from 2001 to 2021, creating an atmosphere of unemployment more among the older age groups than among the youth in the foreseeable future.

People above 60 constitute 12.6 per cent of the state's population of 3.34 crore compared to the national figure of 8.2 per cent. In terms of the proportion of elderly in the population in 2001 as well as 2011, Kerala ranks first, with Punjab and Himachal Pradesh occupying the second position, followed by Tamil Nadu and Maharashtra. So every sixth individual in Kerala is expected to be a senior citizen by 2026.

Among all the conventional age groups (0-4, 5-9 ...80+), the highest growth rate is registered among the old, especially the oldest old. One of the most interesting characteristics of the oldest old is their growth rate. The growth rate among the oldest old is higher than that of the young old and the old old in Kerala over the last 50 years. A special feature of Kerala was that persons above 80 years increased by 0.1

million during every census year since 1981 till 2001 and in 2011, it increased to tune of 0.2 million. In Kerala the highest percentage of old age population is in Alappuzha district followed by Ernakulam, Kottayam, Thrissur and Thiruvananthapuram. The lowest is in Kozhikode and Wayanad District. As per the study predominance of females among the elderly population of Kerala the trend would remain the same in 2026.

Another important striking finding of Kerala is that the cost of “dependency burden” of Kerala households will also rise quite rapidly in the future. Each household will have more than one elderly person on an average, and a major share of the family income will go into taking care of them.

Another important finding is if the retirement age remains fixed, and the life expectancy increases, there will be relatively more people claiming pension benefits and less people working and paying income taxes. The fear is that those in work may have to pay higher taxes. This could create disincentives to work and disincentives for firms to invest, Therefore there could be a fall in productivity and growth.

Suggestions

1. The study suggests following measures Increase participation rate. Make it easier for people past 65 to keep working. Geriatric wards should be established in each hospital to take care of the older persons needs. Increase the importance of the private sector in providing pensions and health care. Enlisting the cooperation of the NGOs as well as the community schemes to keep elderly people economically active have also been mooted. NGOs have been encouraged to provide income generating activities so that people feel economically independent and also experience an increase in self-esteem. Tax incentives for families providing long-term care to elderly family members are also recommended.
2. The feeling of the elderly that they should be taken care of by family is important for better quality of life. We have to remember that it is not only the duty of the young to look after the elders but it is also a pleasure to care for those who cared for us.

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WEALTH OF MILLET

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ABSTRACT

India is the world's largest producer of millets. Millets are a group of highly variable small-seeded grasses, widely grown around the world as cereal crops or grains for both human food and fodder. They do not form a taxonomic group, but rather a functional or agronomic one. Millets are important crops in the semi-arid tropics of Asia and Africa (especially in India, Nigeria, and Niger), with 97% of millet production in developing countries. The crop is favored due to its productivity and short growing season under dry, high temperature conditions. Millet is not a commonly allergenic food and is not known to contain measurable amounts of oxalates or purines. Millet is a good source of the minerals copper, phosphorus, manganese, and magnesium.

In many studies, eating whole grains at least 3 servings eaten daily, has been linked to protect against atherosclerosis, ischemic stroke, diabetes, insulin resistance, obesity, and premature death. In addition to the matrix of nutrients in their dietary fibers, the whole-grain arsenal includes a wide variety of additional nutrients and phytonutrients that reduce the risk of cardiovascular disease. Compounds in whole grains that have cholesterol-lowering effects include polyunsaturated fatty acids, oligosaccharides, plant sterols and stanols, and saponins.

Key words: *Millets, Types, Importance, Nutrients, Uses & Health benefits.*



INTRODUCTION

The most widely grown millet is pearl millet, which is an important sized crop in India and parts of Africa. Finger millet, proso millet, and foxtail millet are also important crop species. While millets are indigenous to many parts of the world, millets most likely had an evolutionary origin in tropical western Africa, as that is where the greatest number of both wild and cultivated forms exist. Millets have been important food staples in human history, particularly in Asia and Africa, and they have been in cultivation in East Asia for the last 10,000 years. Millets are not only adapted to poor, droughty, and infertile soils, but they are also more reliable under these conditions than most other grain crops. Millet is a delicious grain whose consistency varies depending upon cooking method.

History

Millet is thought to have originated in North Africa, specifically in Ethiopia, where it has been consumed since prehistoric times. There is even mention of millet in the Bible as an ingredient for unleavened bread. Millet is still an extremely important food staple in many Africa countries. Since ancient times, millet has been widely

consumed in Asia and India as well. The Indian flatbread roti is made from ground millet seeds. In the Middle Ages, before potatoes and corn were introduced, millet became a staple grain in Europe, especially in countries in Eastern Europe. The *Setaria* variety of millet was introduced into the United States in the 19th century. While millet has been used primarily for birdseed and livestock fodder in Western Europe and North America, it is now gaining popularity as a delicious and nutritious grain that can be enjoyed for both its unique virtues as well as the fact that it is a gluten-free grain alternative to wheat. The majority of the world's commercial millet crop is produced by India, China and Nigeria. It is a delicious grain whose consistency varies depending upon cooking method; it can be creamy like mashed potatoes or fluffy like rice. Additionally, since millet does not contain gluten, it is a wonderful grain alternative for people who are gluten-sensitive. Millet is tiny in size and round in shape and can vary in color from white to gray to yellow to red. The term millet refers to a variety of grains. The types of millet consumed as food generally fall into the scientific categories *Panicum* or *Setaria*. Millet can accompany many types of food and is available in markets throughout the Year

Types of Millets

Jowar is a popular and powerful grain in our diet. Jowar millet has been reported from Pre-harappan culture and it is a succeeding crop in the "History of agriculture in India". Jowar is the fifth most important cereal crop grown in the world. Jowar otherwise known as "Sorghum" is one of the major staple crop cultivated next to wheat in India. In Tamil language it is popularly known as "Cholam (or) koorumcholam". Cholam was used as cold kanji during breakfast in the people diets of ancient Trichirappalli(District in Tamilnadu) was rightly pointed out by Heming F.R.(1907) in the book called "Trichinopoly". Some parts of ancient Tamilnadu used this millet in the preparations of paniyaram and dosai, in their diet. Millet improves cardiovascular health, as it contains fiber, magnesium, potassium in adequate amount. It also reduces the risk of abdominal cancer, digestive tract cancer, breast cancer because of the presence of fiber, phytochemical compound (antioxidant property).Since it is gluten free, it prevents allergic reaction. It helps in maintenance

of blood glucose and blood pressure. Millet can be mixed with pulses to bring variety and also it aids in weight loss. It maintains the health of bones, by reducing the risk of osteoporosis and arthritis. It prevents gum diseases and tooth decay. Sorghum contains compound called 3-Deoxyanthoxanins (3-DXA), which has the antiproliferative effect on human colon cancer cells. Millet is generally available in its hulled and whole-grain form in prepackaged as well as in bulk containers.

Health Benefits

Heart-Protective Properties:

Although oats have been widely publicized for their heart-protective properties, millet is a grain that should also be included on our list of heart-healthy choices because of its status as a good source of magnesium. Magnesium has been shown in studies to reduce the severity of asthma and to reduce the frequency of migraine attacks. Magnesium has also been shown to lower high blood pressure and reduce the risk of heart attack, especially in people with atherosclerosis or diabetic heart disease.

Development and Repair of Body Tissue:

The phosphorus provided by millet plays a role in the structure of every cell in the body. In addition to its role in forming the mineral matrix of bone, phosphorus is an essential component of numerous other life-critical compounds including adenosine triphosphate or ATP, the molecule that is the energy currency of the body. Phosphorus is an important component of nucleic acids, the building blocks of the genetic code. In addition, the metabolism of lipids (fats) relies on phosphorus, and phosphorus is an essential component of lipid-containing structures such as cell membranes and nervous system structures.

Prevention of Gallstones

Eating foods high in insoluble fiber, such as millet, can help women to avoid gallstones formation. Insoluble fiber not only speeds intestinal transit time (how quickly food moves through the intestines), but reduces the secretion of bile acids (excessive amounts contribute to gallstone formation), increases insulin sensitivity

and lowers triglycerides (blood fats). Abundant in all whole grains, insoluble fiber is also found in nuts and the edible skin of fruits and vegetables including tomatoes, cucumbers, many squash, apples, berries, and pears. In addition, beans provide insoluble as well as soluble fiber.

Protection against Childhood Asthma:

Increasing consumption of whole grains and fish could reduce the risk of childhood asthma by about 50%, suggests the International Study on Allergy and Asthma in Childhood . In children with a low intake of fish and whole grains, the prevalence of wheezing was almost 20%, but was only 4.2% in children with a high intake of both foods. Low intake of fish and whole grains also correlated with a much higher incidence of current asthma (16.7%). compared to only a 2.8% incidence of current asthma among children with a high intake of both foods.

Dr. Liu's findings have shown that populations eating diets high in fiber-rich whole grains consistently have lower risk for colon cancer, not just their fiber, but also their many phytonutrients. One type of phytonutrient especially abundant in whole grains including millet are plant lignans, which are converted by friendly flora in intestines into mammalian lignans, including one called enterolactone that protect against breast and other hormone-dependent cancers as well as heart disease.

Significant Cardiovascular Benefits for Postmenopausal Women:

Eating a serving of whole grains, such as millet, at least 6 times each week is an especially good idea for postmenopausal women with high cholesterol, high blood pressure or other signs of cardiovascular disease (CVD). People with celiac disease can replace certain gluten-containing cereals in their diets with millet.

Prevention of Heart Failure with a Whole Grains Breakfast:

Heart failure is the leading cause of hospitalization among the elderly in the United States. Success of drug treatment is only partial, and its prognosis remains poor. Follow up of 2445 discharged hospital patients with heart failure revealed that 37.3% died during the first year, and 78.5% died within 5 years. Since consumption of

whole grain products and dietary fiber has been shown to reduce the risk of high blood pressure and heart attack. Harvard researchers decided to look at the effects of cereal consumption on heart failure risk and followed 21,376 participants in the Physicians Health Study over a period of 19.6 years. After adjusting for confounding factors (age, smoking, alcohol consumption, vegetable consumption, use of vitamins, exercise, and history of heart disease), they found that men who simply enjoyed a daily morning bowl of whole grain (but not refined) cereal had a 29% lower risk of heart failure

Like soybeans, whole grains are rich sources of phytoestrogens, plant compounds that may affect blood cholesterol levels, blood vessel elasticity, bone metabolism, and many other cellular metabolic processes. Whole grains improve insulin sensitivity by lowering the glycemic index of the diet while increasing its content of fiber, magnesium, and vitamin E.

Milletts are also relatively rich in iron and phosphorus. The bran layers of millets are good sources of B-complex vitamins. Millets are rich in B vitamins (especially niacin, B₆ and folic acid), calcium, iron, potassium, magnesium, and zinc. Millets contain no gluten, so they are not suitable for raised bread. When combined with wheat (or xanthan gum for those who have celiac disease) they can be used for raised bread. Alone, they are suited for flatbread. As none of the millets are closely related to wheat, they are appropriate foods for those with celiac disease or other forms of allergies/intolerance of wheat. However, millets are also a mild thyroid peroxidase inhibitor and probably should not be consumed in great quantities by those with thyroid disease.

CONCLUSION

By giving importance to traditional values of millet, it is used to prepare variety of recipes like roti, khichadi, vada, puttu, dosa, murrukku, pongal, paniyaram, idlis and even as puffed millet in the form of snacks. Hence, the inclusion of millet in the diets of many people, not only adds colour to our plate, but relieves the pain of the farmers, who are the backbone of our Nation and also brings back our traditional Health.

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