A study on traditional dietary pattern and its impact on health status of the elderly people

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ABSTRACT

Indian traditional foods is considered as functional foods as it contains high amounts of dietary fibre (whole grains and vegetables), antioxidants (spices, fruits, and vegetables), and probiotics (curds and fermented batter products), which are best choices for health promotion. These foods help in weight management and blood sugar level balance and support immunity of the body. The study aimed to determine the socio economic status, lifestyle pattern, health profile, anthropometric and biochemical assessment, clinical signs, nutritional status and traditional dietary pattern of the elderly in rural area and to analyse the impact of traditional foods towards the health status of the elderly. The study was conducted in Hanumanthanapuram village of Kancheepuram district, Tamil Nadu, India. The study design adopted in the present study was descriptive study. A total sample of about 100 elderly (50 males and 50 females) was selected on the basis of purposive sampling method and the data was collected by using questionnaire as a tool and analysed by SPSS software version 14. The finding of the study showed that the mean and standard deviation of body mass index of male and female subjects was found to be 23.2 ± 2.55 and 24.08 ± 2.08 and the mean and standard deviation of hemoglobin level (secondary data) of male and female subjects was found to be 13.42 ± 0.84 and 11.37 ± 1.17. A consumption of ragi, rice, pulses and vegetables were routinely taken by the elderly, but very less consumption of fruits were taken by them. The karlpearson's correlation of traditional foods and health problems was found to be significant positively correlated and the student's t-test of health problems based on lifestyle pattern was found to be highly significant $(p<0.05)$ and the student's t-test of gender based on nutrient intake was found to be highly significant $(P<0.05)$. The study concluded that after consuming traditional foods and having a good lifestyle pattern, the elderly were facing a minimal health related issues, so consumption of such traditional foods has a role in preventing diseases.

Key Words: Traditional Foods, Elderly, Nutritional Status, Lifestyle Pattern, Health Profile

INTRODUCTION

Traditional Indian foods are recognized as functional foods because of the functional components present it, such as body healing chemicals, antioxidants, dietary fibres and probiotics which are healthy and more nutritious and also helps in weight management controls blood sugar and provides enormous amount of immunity to our body. The consumption of such traditional food provides good preventive measure to control many diseases (Preetam sarkar and Ruplal Choudhary, 2015). Traditional south Indian foods provide an excellent combination of proteins form legumes and coconut, carbohydrates from rice, fats both visible and invisible from curry and fried savory items, vitamins and minerals from sprouted grams, and vegetables which contain functional components such as beta carotene, vitamin C and E, thiamine, tocopherol, and antioxidant compounds. These foods can help prevent chronic disease or optimize health, therefore reducing health-care costs and improving the quality of life.(Agilandeswari Devarajanand Mohanmarugaraja, 2017).Traditional food system was fundamental to livelihood, subsistence lifestyle and health and well-being. The South Indian traditional foods are considered as Siddha system of medicine, which helps in a natural way to achieve physical and mental wellness (Chitra and Anbu, 2019). In Tamil Nadu they are using many varieties of traditional recipes like Thuthuvalairasam, Karpuravallirasam, Ponnakannikeeraiporiyal, Nattukozhi soup, vazhathandu soup, Tulsi tea, Ingithuvaiyal, Sukkumalli coffee, Milagupaal etc., to cure and control the diseases in orderto maintain the good health (Karthikadevi and Premala priyadharshini, 2014). The present paper gives more insight on the importance of traditional food for our longevity and health.

MATERIALS AND METHODS

The study has been approved by the Independent Human Ethics Committee (IHEC) of SDNB Vaishnav College for Women (protocol No. SDNBVC/IHEC/2019/23).The area selected for the study was Hanumanthanapuram village of Kancheepuram district, Chennai, Tamil Nadu, India. The descriptive study was conducted between September 2019-February 2020.A total number of samples selected for the study were 100 subjects which include both male (50) and female (50) which was selected on the basis of purposive sampling method.

INCLUSION CRITERIA

- Older people (Men and Women) in the age group of above 60 above years
- Those who are willing to participate.

EXCLUSION CRITERIA

- Age group of below 60 years is excluded.
- Those will not give consent to participate.

The purpose of the study was explained to them and informed consent was obtained. The data was collected by using questionnaire as a tool. The questionnaire includes the following information (Socioeconomic status, lifestyle pattern, health profile, nutritional status and traditional foods). Pilot study was conducted for 30 older adults to test the pre-designed questionnaire. The researcher personally visited the village and face to face interview was conducted with the help of developed questionnaires. The data obtained was compiled, tabulated and analysed for Mean, Standard deviation, Karl Pearson's Correlation, Student's t test by using SPSS Software Version 14.

RESULTS AND DISCUSSION

Table 1: DEMOGRAPHIC CHARACTERISTICS OF THE ELDERLY

| Personal characteristics	N=100	Percentage (%)
Age		
60-69	46	46
70-79	30	30
80-89	20	20
>90	3	3
Educational status		
High School	18	18
Secondary	59	59
Illiterate	23	23
Employment status		
Agriculture	50	50
Labor	15	15
Business	7	7
Home maker	18	18
Retired	10	10

Table 1 shows that 59% of the elderly were studied upto secondary class, 23% of them were illiterate and 18% of the elderly were studied upto high school. Information about employment status of the elderly revealed that majority of 50% of the elderly were agriculture workers, 15% of them were labors, 7% of them were upto business, 18% of them were home makers and 10% of the elderly were retired.

Table 2: LIFESTYLE PATTERN OF THE ELDERLY

Lifestyle pattern	N=100	Percentage (%)
Lifestyle activity		
Sedentary	34	34
Moderate	66	66
Sleeping pattern		
6 hours	16	16
Less than 6 hours	17	17
8 hours	67	67
Physical activity		
Walking	43	43
Cycling	31	31
No activity	26	26

Table 2 predicts that 34% of the elderly were sedentary workers and 66% of elderly were moderate workers, most of the elderly held in agriculture work. Sleeping habits represents that 67% of the elderly having a normal sleep of about 8 hours and 16% of the elderly having lack of sleep of less than 6 hours and

about 43% of the elderly were walking regularly, 31% of the elderly were having the habit of doing cycling and no activity was done by 26% of the elders.
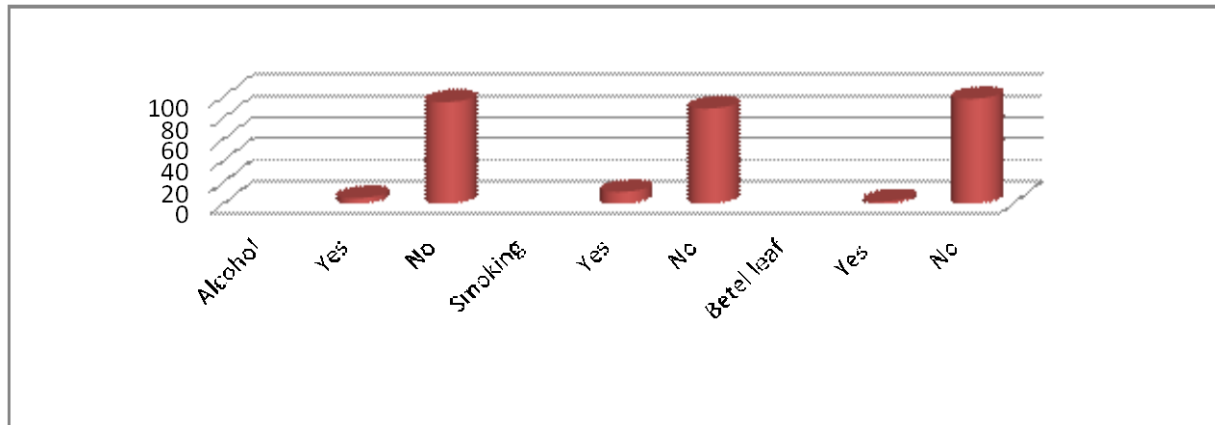
FIGURE 1: PERSONAL HABITS OF THE ELDERLY

Figure 1 represents that about 5% of the male respondents were having the habit of alcohol consumption and 10% of the male respondents having the habit of smoking. Betel leaf was taken by 2% of the total respondents.

TABLE 3: HEALTH PROFILE OF THE ELDERLY

| HEALTH COMPLICATIONS	PERSONS HAVING HEALTH ISSUES	PERSONS NOT HAVING HEALTH ISSUES
Diabetes	4	96
Cardiovascular diseases	-	-
Respiratory diseases	15	85
Gastro-intestinal diseases	9	91
Nervous disorders	8	92
Joint problems	39	61
Hypertension	7	93
Cancer	-	-

Table 3 indicates that joint problem (knee pain) was the most common problem among 39% of the elderly. 15% of the elderly were diagnosed with respiratory problems. 9% of the elderly were diagnosed with gastrointestinal problems. Hypertension was seen in 7% of the elderly. 8% of the elderly were diagnosed with nervous disorders. Cardiovascular diseases and cancer were not seen among any elderly of the total population.

TABLE 4: NUTRITIONAL STATUS OF THE ELDERLY

NUTRITIONAL ASSESSMENT	MEAN	STANDARD DEVIATION
Anthropometric Measurement (cm)		
Male	165.68	±4.72
Female	153.6	±6.52
Weight Measurement (kg)		
Male	63.69	±6.34
Female	56.898	±7.27
BMI		
Male	23.2	±2.55
Female	24.08	±2.08
Biochemical Assessment		
Hemoglobin (g/dl)		
Male	13.42	±0.84
Female	11.37	±1.17

Table 4 indicates that height was measured by using measuring tape and weight was measured by using weighing machine. The mean and standard deviation of body mass index of male and female subjects was

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found to be 23.2 ± 2.55 and 24.08 ± 2.08 respectively. The result shows that as in the case of the male subjects, the female subjects showed decreased values in the mean height, weight and Body Mass Index. Hemoglobin estimation was collected through secondary data. The mean and standard deviation of hemoglobin level of male and female subjects was found to be 13.42 ± 0.84 and11.37± 1.17 respectively. It is clearly showing that the prevalence of anemia was more in females.
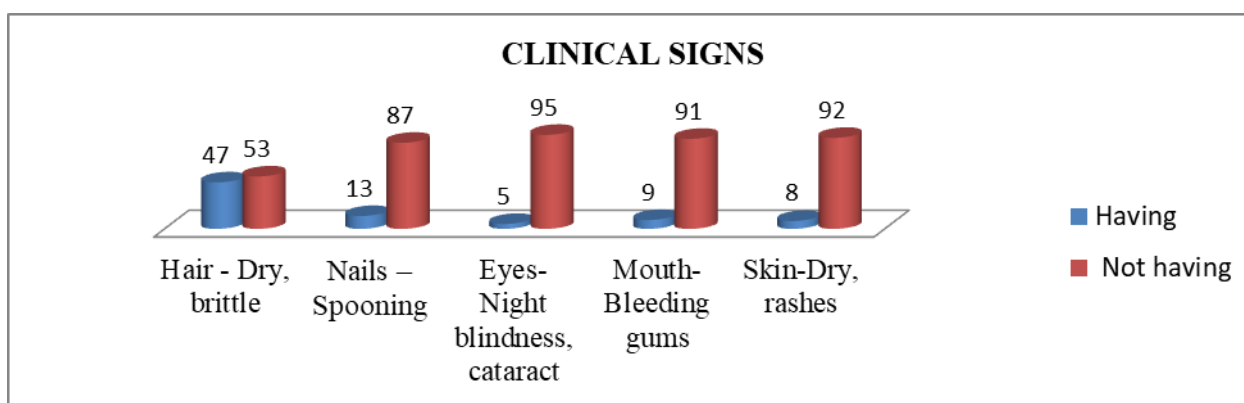
FIGURE 2: CLINICAL SIGNS OF THE ELDERLY

Figure 2 indicates the clinical examination, which was done to find out the nutrient deficiency diseases inthat cataract was observed in 17% of the elderly which is a symptom of vitamin A deficiency. 13% had bleeding gums. 10% had rough skin texture .13% had flat and brittle nails which are a symptom of calcium deficiency. Dry and brittle hair was the major problem that affected majority (47%) of the elderly.

TABLE: 5 TRADITIONAL FOODS CONSUMED BY THE ELDERLY

TRADITIONAL FOODS	DAILY (%)	WEEKLY TWICE (%)	WEEKLY THRICE (%)	RARELY (%)	NEVER (%)

Kambuchooru (Pearl Millet Rice)	77	10	9	4	-
Ellusadham (Sesame Rice)	-	22	37	41	-
Neeragaram (Fermented rice)	70	20	8	2	-
Ragi Idly and dosa	41	45	13	1	-
Vazhai poo (Banana blossom) poriyal	49	24	16	11	-
Thippili (Long pepper) Rasam	13	32	33	22	-
VaraguArisiPongal (KodoMilletpongal)	1	45	46	8	-
Ulundhu Kali (Urad dhal kali)	19	26	28	27	-
Mudakathankeeraidosa (Ballon vine dosa)	3	31	23	43	-
RagiKoozh	69	29	2	-	-
Ragi Roti	76	14	6	4	-
KuzhiPaniyaram	24	22	15	39	-
Manathakkali(Black night shade)kulambu	6	50	38	6	-

Table 5 shows that, kambuchooru (Pearl Millet Rice) was consumed by 77% of the elderly on daily basis. Ellusadham(Sesame Rice) was consumed by them twice a week. (Fermented rice) was consumed by 70% of the elderly on daily basis. Ragi idly and ragi dosa was consumed by 45% of the elderly weekly twice. Ulundhu kali (Urad dhal kali) was consumed by 28% of them thrice a week. Ragi Koozh was consumed by the elderly of 69%.Ragi roti was consumed by the elderly of 76%. Vazhai poo poriyal(Banana blossom poriyal)was consumed by the elderly of 49%. 33% of the elderly were consumed thippili Rasam(Long pepper Rasam) twice a week. Mudakathan keeraidosa(Ballonvinedosa)was consumed by the elderly very rarely. Manathakkali kulambu (Black night shade) was taken by them weekly twice.

TABLE: 6 DIETARY IN TAKE OF SUBJECTS BASED ON 24 DIETARY RECALL

NUTRIENT INTAKE	MEAN	SD
Energy	1912.99	±321.894
Protein	65.56	±6.534
Fat	24.16	±4.004

Table 6 indicates the mean energy intake of both gender was found to be 1912.299± 321.894 and the mean protein intake of both gender was found to be 65.56± 6.534 and mean fat intake was found to be 24.16±4.004 respectively.

TABLE 7: KARL PEARSON'S CORRELATION BETWEEN TRADITIONAL FOODS AND HEALTH PROBLEMS

		HEALTH PROBLEM	TRADITIONAL FOOD
Health problem	Pearson Correlation	1	**0.55**
	Sig. (2-tailed)		0.00*
	N	100	100
Traditional food	Pearson Correlation	**0.55**	1
	Sig. (2-tailed)	0.00*	
	N	100	100

Significant at the 5% level & Karl Pearson's correlation values should between the [-1 to +1]

The table 7 considering the relationship with traditional food and health problems, it was seen that there was significant positively correlated between traditional food and health problems, hence it is concluded that increased consumption of traditional foods leads to decrease in health problems.

TABLE 8: STUDENT'S T-TEST FOR HEALTH PROBLEMS BASED ON LIFESTYLE PATTERN AND STUDENT'S T-TEST FOR GENDER BASED ON NUTRIENT INTAKE

STUDENT'S T-TEST	MEAN ± STD	T VALUE	DF	P VALUE
Health Problems and lifestyle pattern	14.47±.8778	6.254	98	**0.00***
STUDENT'S T-TEST	**MEAN ± STD**	**T VALUE**	**DF**	**P VALUE**
Gender and Nutrient Intake				
Energy	471.58±43.79	10.769	98	**0.00***
Protein	4.680±1.225	3.819	98	**0.00***
Fat	1.600±.789	2.029	98	**0.045***

Significant at (p<0.05)

The Student's t-test determines whether two populations express a significant or non-significant difference between population means.

In table 8Student's t test had been administered to find out whether there exists any significant difference in the health problems and lifestyle pattern. Hence it concluded that there was highly significant difference **(p<0.05)** between health problems based on lifestyle pattern.

Student's t test had been administered to find out whether there exists any significant difference in the gender and nutrient intake. Hence it concluded that there was highly significant difference**(p<0.05)**between gender and nutrient intake (energy protein and fat).

Traditional food practices and lifestyle pattern plays a major role in life. In this present study out of 100 elderly, most of them were studied upto secondary class and belong to moderate workers. Majority of the elderly were belongs to agriculture workers and having a healthy lifestyle which related to the previous research (Alina deluge et al., 2018). About 74% of the elderly were having the habit of doing physical activity. Regular exercise helps to maintain one owns health. Having reached the age of 60 and above years, individuals will be able to spend some time for exercise that would help them to maintain their health. Out of 100 elderly 67% of them had a good sleep and 33% of them had mild problems in sleep which was related to the earlier research on sleep conducted on elderly (Samaneh Aliabadi et al., 2017).Out of 100 elderly only 5% of the males were having the habits of alcohol

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consumption and 10% of the males were having the habit of smoking. Betel leaf was used by 2% of the total respondents. Evidence suggests that less intake of alcohol and smoking may be associated with a lower risk of heart attack, while heavier drinking may well increase the risk of heart attack, heart failure, stroke and high blood pressure.(HinesaandRimmb,2001). 39% of the elderly facing a major problem in joint (knee pain) but they found relief by taking rest and using home remedies. Problems related to the locomotor system were considered by most of the elderly as normal during old age and they preferred home treatments only.15% of the elderly were diagnosed with respiratory problems. Respiratory problems such as wheezing, asthma and difficulty in breathing were also the most occurring problems as reported by the subjects. 12% of the elderly were diagnosed with gastrointestinal problems. Problems like diarrhoea, abdominal pain, constipation though affected many elderly. Constipation may be due to the low intake of fibrous foods and fluids. Diarrhoea and abdominal pain may be the outcome of indigestion which is common to occur in old age due to the weakening of the alimentary system. Hypertension was seen in 7% of the elderly and 8% of the respondents were diagnosed with nervous disorders. Cardiovascular diseases and cancer was not seen among any elderly of the total population. Earlier research indicates that elderly suffered from many chronic diseases, in that joint problem and gastrointestinal problems was the most common problem with high percentage. (Kambleet al., 2012).

So in this present study it was clearly evident that most of the older adults were facing minimal health related issues. Height and weight was measured to find out the BMI. The result shows that as in the case of the male subjects, the female subjects showed decreased values in the height, weight and Body Mass Index. Hemoglobin estimation was collected through secondary data. This present study indicates that the prevalence of anemia was more in females which was related to previous studies. Clinical examination was also done to find out the prevalence of health problems and other nutrient deficiency diseases. When compare to(Nancy Chen et al., 2012),in this present study it was evident that the elderly were having less clinical signs. A consumption of foods like ragi koozh, ragi idlyand ragi dosa were taken by them in large amounts. Rice, pulses and vegetables were routinely taken by them and consumption of fruits were taken by them very rarely. Evidence shows that that idli, dosa and upma prepared from finger millet showed lowest glycemic index (41–48%). Its low glycemic index is reported to treat for the people with celiac disease and diabetes as consumption of the grain assist in the regulation of blood glucose level(Thakkar and Kapoor, 2007) and Koozh prepared from pearl millet flour or finger millet considered to be enrich the nutritional value and also beneficial for good health contributes to the reduction of chronic diseases such as lowering of high blood pressure, cardiovascular diseases, cancers, obesity and type II diabetes (Shripadbhat, 2012). While considering the relationship with traditional food and health problem it was seen that there was significant positively correlated which was similar to the earlier study (Chitra and Anbu, 2019).Hence it was concluded that after consuming traditional foods and having a good lifestyle pattern, the elderly were facing a minimal health related issues. The student's t-test for health problems based on life style pattern and student's t-test for gender based on nutrient intake

was found to be highly significant **(P<0.05)** which was related to the earlier study conducted on rural older adults (Chitra and Anbu, 2019)

CONCLUSION

The present study suggested that traditional food consumption has a role in the prevention of certain diseases and maintaining a good health. Traditional foods and its importance on health are largely ignored by the processed foods. Traditional food concepts have been changed in our society because of our lifestyle. In these days, people prone to more health problems which were related with the new eating habits and fast food consumption mainly in urban areas and them faces their death at a very early age. This has negative effects on families and society, but in rural areas still older adults are consuming traditional foods and having a good lifestyle because of that they are healthy and their lifespan is increased so,itis vital to know the importance of good food habits in our own tradition.

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