

## FOOD CONSUMPTION PATTERN OF ADOLESCENTS IN UDUTHTHURAI GRAMA NILADHARI DIVISION OF THE JAFFNA DISTRICT

<sup>1</sup>**Menaka Sivakaran**

<sup>1</sup>*Home Economics, Faculty of Arts, University of Jaffna, Sri Lanka*

\*[jmenakaj@yahoo.com](mailto:jmenakaj@yahoo.com)

Adolescents are the future backbone of a nation. The adolescent period is the transition period between child and adult. The dietary pattern of this period influences the nutritional status in later stages of life. The nutritional status of adolescents would affect the nutritional status of a community. Good nutrition is essential for optimal health. The recent economic crisis in Sri Lanka makes most of the families to eat less, cheaper and poor nutritional foods. This study is conducted with the objectives of identifying fruit, vegetable and dairy consumption patterns and reasons for limited food diversity among adolescents between 17 to 19 years old in Uduththurai Grama Niladhari division of the Jaffna District. Data collection was made from fifty adolescents from the division by household visits, observing cooking facilities, interviewing the participants, administering a questionnaire, a 24-hour dietary recall and collecting a week's food diary entry. Adolescents should consume 3-5 servings of fruit and vegetables in their diet. Fruit and vegetables in the diet provide vitamins, minerals and dietary fiber. Those foods help to prevent micronutrient deficiencies. Dairy products provide valuable protein, vitamin B, calcium and phosphorus for adolescents. From the dietary assessment, the participants did not meet the recommended level of fruit, vegetable and dairy consumption. According to the food diary entry (7 days), none of the participants had consumed cow's milk, goat's milk, or dairy products such as ghee, butter, buttermilk, paneer, cheese and yogurt. Below 30 % of the adolescents between 17 to 19 years old had consumed green leafy vegetables on a weekly basis. Banana is the only fruit consumed daily by at least 4% of the participants. The focused group discussion helped identify further factors for the lack of consumption of fruit, vegetables and dairy products: the increased fuel prices to purchase milk and vegetables from faraway places, increased prices of imported fruits in the market, less land available for livestock rearing, food cost for the livestock and the hot climate for cattle. Less consumption of such food items leads to protein and micronutrient deficiency which will affect the health of the future workforce of the country. Awareness should be made to increase the consumption of such food items and the foods should be made available by introducing a farmer's market and a Milk Board in the community.

**Key Words:** adolescents, food consumption, Uduththurai, nutrition, Jaffna

# FOOD CONSUMPTION PATTERN OF ADOLESCENTS IN UDUTHTHURAI GRAMA NILADHARI DIVISION OF THE JAFFNA DISTRICT

<sup>1</sup>**Menaka Sivakaran**

<sup>1</sup>*Home Economics, Faculty of Arts, University of Jaffna, Sri Lanka*

\*[jmenakaj@yahoo.com](mailto:jmenakaj@yahoo.com)

## Introduction

The adolescent period is the key decade in life with implications on adult health, socio-economic well-being of a country and the health of the future children. Poor nutrition during the adolescent period can lead to delay or failure in achieving maturation (Bhargava *et al.*, 2020). Adolescents are more susceptible to micronutrient deficiencies; especially iron deficiency anaemia which is prevalent among adolescent girls compared to the boys of the same age group (Christian & Smith, 2018). Further, research indicates that poor eating habits and physical activity patterns of childhood accumulates health related problems lead to obesity, heart diseases and osteoporosis during adulthood. Skipping breakfast is also common among the adolescents (Nafis *et al.*, 2014). Adolescent girls are the heart of the lifecycle. They are still children and soon become mothers (Branca, 2015). The nutritional status of adolescents, especially the girls, the future mothers would affect the nutritional status of a community (Konwar *et al.*, 2019).

Being a multicultural country Sri Lanka shows different dietary habits (Weerasekara *et al.*, 2018). Less data is available in Sri Lanka on food consumption surveys due to lack of financial and human resources (Jayawardena *et al.*, 2014). The economic crisis in Sri Lanka is spiraling into a humanitarian emergency as millions of people face acute shortages of food, fuel, cooking gas and medicine. The civil unrest and food shortages gripping the country were sparked by an economic crisis that has been developing throughout the COVID-19 pandemic. Sharp declines in agriculture production have resulted in rapid price increase for staple food items like rice and vegetable, which directly impact the household economy and food security of the most vulnerable (IFRC, 2022).

Uduththurai is a village located in the Jaffna district of the Northern Province. J/430 Grama Niladhari division is under the Vadamaradchy East Divisional Secretariat and the Maruthankerny Medical Officer of Health. As the village is situated near the sea, it was greatly affected by the tsunami in 2004 (Wordpress, 2018).

The main occupation of the majority of its residents is fishing. Therefore, the residents can get adequate fish in their diet. However, consumption of fruits, vegetables and dairy products are less than the required amount. The study was conducted with the objectives of finding out the fruit, vegetables and dairy consumption pattern of adolescents between 17 to 19 years old and the reasons for limited food diversity among adolescents between 17 to 19 years old in the Uduththurai Grama Niladhari division of the Jaffna District.

## Methodology

There are 629 families (934 male and 921 female, total 1865) in the GN division and 105 male and 81 female are in 15-19 years age group (Statistical Handbook, 2021). The study was conducted to find out the food consumption pattern of adolescents between 17 to 19 years old in J/430, Uduththurai Grama Niladhari division. Fifty (50) adolescents (25 % of the adolescent population in the study area) were selected for the study. Adolescents between 17 and 19 years from J/430, Uduththurai Grama Niladhari division were had the chance of being included in the study while institutionalized adolescents (hospital, hostel and any other religious residents), medically diagnosed adolescents (Adolescents with acute infection,

CKD, cerebral palsy, disability, thalassemia, nephrotic symptoms etc..) were excluded from the study.

The first household was selected randomly in the GN division. Only one adolescent (17-19 years) was eligible from the identified household and was included in the study. The next house to be visited was the fourth house from the right side of the first house. This procedure was repeated until the required number of respondents to interviewed. In each house visited all males and females in the age group between 17 and 19 were listed and the person to be interviewed was selected according to their date of birth; the oldest adolescent with in the age group 17-19 was chosen to be interviewed.

A questionnaire was administrated by the interviewer to find the sociodemographic information of the participants. Dietary information was obtained from the food frequency questionnaire, 24 hours dietary recall method and the food diary. The participants were asked the frequency of consumption of food products. The food consumption pattern was measured by the number of meals and the number of snacks eaten per day. Meals were defined as food items routinely eaten on a particular occasion as main meals either as breakfast, lunch, or dinner. The participants were allowed to recall the food and beverages consumed in the previous 24 hours and recorded. A food diary was given to each participant to record the food and beverages they consumed for 7 consecutive days as breakfast, lunch, dinner and snack.

A focus group discussion was conducted with the parents, Grama Niladhari, Development Officer and Public Health Midwife of the division regarding the availability of food items in the village and food consumption pattern of the residents.

Ethical clearance was obtained from Ethics Review Committee, Faculty of Medicine, University of Jaffna.

Data analysis was performed by descriptive statistics.

## Results and Discussion

Table 1. Demographic characteristics of respondents

Characteristics	Frequency	Percentage
<b>Sex</b>		
Male	28	56%
Female	22	44%
<b>Age</b>		
17	14	28%
18	22	44%
19	14	28%
<b>Religion</b>		
Hindu	46	92%
Christian	4	8%
Islam	0	0%
Buddhist	0	0%
<b>Women headed family</b>		
Yes	42	84%
No	8	16%

The mean age of the participants (adolescents between 17 to 19 years old) is 18.

Table 2. Frequency of consumption of vegetables by adolescents (between 17 and 19 years old) in the Uduthuthurai Grama Niladhari Division

Vegetable	Frequency servings of consumption (%)			
	Weekly	Monthly	Never	Seasonal
<b>Potato</b>	84	4	12	-
<b>Carrot</b>	72	12	16	-
<b>Beetroot</b>	36	28	36	-
<b>Brinjal</b>	56	4	40	-
<b>Ladies fingers</b>	32	12	56	-
<b>Cabbage</b>	36	12	52	-
<b>Pumpkin</b>	36	12	52	-
<b>Bitter gourd</b>	8	12	80	-
<b>Snake gourd</b>	8	16	76	-
<b>Tomato</b>	40	8	52	-
<b>Manioc</b>	16	12	72	-
<b>Drumstick</b>	0	0	24	76
<b>Spinach</b>	0	24	20	56
<b>'Ponankani'</b>	0	8	28	64
<b>'Gotukola'</b>	0	28	40	32

Source: Data gathered from food frequency questionnaire distributed to adolescents between 17 and 19 years old in Uduthuthurai Grama Niladhari division

Consumption of potato, carrot and brinjal are in high frequency on a weekly basis compared to other vegetables. A study conducted by Perera and Madhujith, (2012) also concluded that brinjals and carrots are mostly consumed in Sri Lanka. According to the data collected at the focus group discussion conducted with the administrative officers of the divisions and local residents, it was revealed that shop keepers travel more than 5 km to obtain vegetables to be sold in the shops and easily perishable vegetables such as spinach are less purchased. Additionally due to the hot weather conditions prevailing in this division vegetables cannot be grown easily. Also, the vehicles transporting vegetable to the village were irregular particularly due to the fuel crisis in the country.

Table 3. Frequency of consumption of fruits by adolescents (between 17 and 19 years old) the in Uduthuthurai Grama Niladhari division

Fruits	Frequency servings of consumption (%)				
	Daily	Weekly	Monthly	Never	Seasonal
<b>Banana</b>	4	48	24	24	-

<b>Papaw</b>	0	0	12	88	-
<b>Mango</b>	0	0	0	68	32
<b>Dates</b>	4	0	0	0	-
<b>Apple</b>	0	0	4	96	0
<b>Guava</b>	0	0	12	88	-
<b>Jack fruit</b>	0	0	0	72	28
<b>Orange</b>	0	0	4	96	-
<b>Nelli</b>	0	0	0	80	20
<b>Wood apple</b>	0	0	0	76	24

Source: Data gathered from food frequency questionnaire distributed to adolescents between 17 and 19 years old in Uduththurai Grama Niladhari division

From the food diaries and discussion with the participants it was found that banana is the only fruit consumed by the adolescents between 17 to 19 years old in the study area.

This study agrees a study conducted by Weerahewa *et al.*, 2013 which revealed that banana is the most widely consumed fruit by Sri Lankans. Seasonal fruits such as mango and jack fruit are consumed by at least 30 % of adolescents between 17 to 19 years old.

From the data collected through the week's food diaries, none of the participants consumed cow's milk, goat's milk or dairy products such as ghee, butter, buttermilk, paneer, cheese and yogurt during the period of seven days. Two of the participants (8%) consumed milk powder daily while eight of the adolescents (32%) consumed milk powder at least two days per week. Less land available for livestock rearing, food cost for the livestock and hot climate for the cattle were identified as reasons for the lack of milk consumption by the participants. Heat stress in animals is one of the major climate change impacts on domesticated livestock raised and decreased in the milk yield (Gjerris *et al.*, 2011). Increased price was identified as the cause (92%) for less purchase of dairy products. This agreed with a study conducted by Kaliji *et al.*, (2019). People have to travel far away to purchase milk daily. The fuel crisis stopped the daily milk consumption of 64% of the participants. With several essential food items in high demand, Sri Lanka's food prices increased by a record 21.1% on a year-on-year basis (Ethirajan, 2022).

### **Conclusions and Recommendation**

Adolescents from 17 to 19 years old of the Uduththurai Grama Niladhari division did not meet the recommended level of fruit, vegetable and dairy consumption. Less availability of such commodities, increased prices of food products due to the economic and fuel crisis and availability of sea food at the fishing village that resulted in less purchase of other food items were identified for less consumption of fruit, vegetable and dairy products. It is recommended that the food commodities should be made available for the community by introducing a farmer's market and a Milk Board in the community.

## References

- Bhargava, M., Bhargava, A., Ghate, S.D & Rao, R.S.P.R. (2020). Nutritional status of Indian adolescents (15-19 years) from National Family Health Surveys 3 and 4: Revised estimates using WHO 2007 Growth reference. *PLoS ONE*, 15(9), e0239923. <https://doi.org/10.1371/journal.pone.0239923>.
- Branca, F. (2015). Nutrition and health in women, children and adolescent girl. *The BMJ*, 27-31. <https://www.bmj.com/content/351/bmj.h4173>
- Christian, P & Smith, E. R. (2018). Adolescent Under nutrition: Global Burden, Physiology, and Nutritional Risks. *Annals of Nutrition and Metabolism*, 2, 316–328. <https://karger.com/anm/article/72/4/316/42718/Adolescent-Undernutrition-Global-Burden-Physiology>
- Ethirajan, A. (2022). How the soaring cost of living is hitting Sri Lankans hard, available at <https://www.bbc.com/news/business-59952980> accessed on 12.05.2023.
- Gjerris, M., Gamborg, C., Röcklinsberg, H & Anthony R. (2011). The price of responsibility: ethics of animal husbandry in a time of climate change. *Journal of Agriculture Environment Ethics*, 24: 331-350. [https://www.researchgate.net/publication/225357703\\_The\\_Price\\_of\\_Responsibility\\_Ethics\\_of\\_Animal\\_Husbandry\\_in\\_a\\_Time\\_of\\_Climate\\_Change](https://www.researchgate.net/publication/225357703_The_Price_of_Responsibility_Ethics_of_Animal_Husbandry_in_a_Time_of_Climate_Change)
- International Federation of Red Cross and Red Crescent Societies (2022). Sri Lanka's economic crisis spiraling into food crisis, available at <https://reliefweb.int/report/sri-lanka/sri-lankas-economic-crisis-spiralling-food-crisis>, accessed on 08.11.2022.
- Jayawardena, R., Byrne, N. M., Soares, M. J., Katulanda, P & Hills, A. P. (2012). Food Consumption of Sri Lankan adults: An appraisal of serving characteristics. *Public Health Nutrition*, 16 (4), 653-658. <https://pubmed.ncbi.nlm.nih.gov/22784794/>
- Kaliji, S.A., Mojaverian, M., Amirnejad, H & Canavari, M. (2019). Factors Affecting Consumers' Dairy Products Preferences. *Agris Online papers of Economics and Informatics*, 11 (2), 3-11. <https://online.agris.cz/archive/2019/02/01>.
- Konwar, P., Vyass, N., Hossain, S. S., Gore, M.N & Choudhury, M. (2019). Nutritional status of adolescent girls belonging to the tea garden estates of Sivasagar District, Assam, India. *Indian Journal of Community Medicine*, 44 (3), 238-242. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6776935/>
- Nafis, F., Mohammad, K, I., Ali, A, Ahmed, A. S., Anees, A & Najam, K. (2014). Breakfast skipping and proposed effects of breakfast on obesity: A school based study in adolescents in Aligarh, India. *Annals of Tropical medicine and Public Health*, 7 (1), 43-47. [https://www.researchgate.net/publication/268576369\\_Breakfast\\_skipping\\_and\\_proposed\\_effects\\_of\\_breakfast\\_on\\_obesity\\_A\\_school\\_based\\_study\\_in\\_adolescents\\_in\\_Aligarh\\_India](https://www.researchgate.net/publication/268576369_Breakfast_skipping_and_proposed_effects_of_breakfast_on_obesity_A_school_based_study_in_adolescents_in_Aligarh_India)

Perera, T., & Madhujith, T. (2012). The Pattern of Consumption of Fruits and Vegetables by Undergraduate Students: A Case Study. *Tropical Agricultural Research*, 23, 261-271. <https://tar.sljol.info/articles/10.4038/tar.v23i3.4663>

Statistical Handbook. (2021). Available at: <http://www.jaffna.dist.gov.lk/images/2022/statisticalhandbook/StatsBook2021.pdf> accessed on 12.05.2023.

Weerahewa, J., Rajapakse, C., & Pushpakumara, G. (2013). An Analysis of Consumer Demand for Fruits in Sri Lanka. 1981-2010. *Appetite*, 60, 252-258. [https://www.researchgate.net/publication/232085819\\_An\\_analysis\\_of\\_consumer\\_demand\\_for\\_fruits\\_in\\_Sri\\_Lanka\\_1981-2010](https://www.researchgate.net/publication/232085819_An_analysis_of_consumer_demand_for_fruits_in_Sri_Lanka_1981-2010)

Weerasekara, P. C . , Withanachchi, C.R., Ginigaddara & Ploeger, A. (2018). Nutrition Transition and Traditional Food Cultural Changes in Sri Lanka during Colonization and Post-Colonization, *MDPI*, 1-18. <https://www.mdpi.com/2304-8158/7/7/111>

Wordpress,2018. Victims of 2004 tsunami remembered across Tamil homeland, available at [Victims of 2004 tsunami remembered across Tamil homeland | SRI LANKA \(wordpress.com\)](https://www.wordpress.com/victims-of-2004-tsunami-remembered-across-tamil-homeland-sri-lanka) accessed on 12.05.2023.