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Assessment of food diversity among tribal adolescent girls (10-19 years) in Udaipur district, Rajasthan

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Abstract
The present study entitled "Assessment of Food Diversity among Tribal Adolescent Girls (10-19 Years) in Udaipur District, Rajasthan". A total of 150 tribal adolescent girls between the ages of 10 and 19 were studied (30 from each village). The data was analysed using statistical tests of frequency and percent. When compared to other nutritional staples, wheat, pulses, other vegetables, milk, and milk products were highly popular in rural areas. According to the findings, all age groups received the bare minimum of nutritional diversification. According to the findings of the study, the majority of the girls did not consume a diverse diet.

Keywords: Adolescent, food diversity

Introduction
A nutritious diet is necessary for human survival and is regarded as an important aspect in maintaining good health as well as contributing to societal well-being. Nutrition is the consumption of food required to meet the nutritional requirements of the body. The key to optimal health is a well-balanced diet. The World Health Organisation defines adolescent age as 10 to 19 years. Health education and dietary supplementation are critical in this scenario. Around 1.2 billion adolescents live in the world, accounting for around 18% of the population, with more than 90% of them residing in low- and middle-income countries (Mathur, 2008) [3]. In India, there are approximately 253 million adolescents, accounting for nearly 20% of the entire population (Sethi *et al*., 2019) [5].

The availability of micronutrients influences the nutritional condition of teenage girls. Micronutrient deficiency is a significant dietary issue that affects both developing and industrialised countries. Nutritional education can help people change their eating habits, improve their nutritional status, and change their attitudes about eating unhealthy foods, all of which are good for their health. Adolescent nutrition can be improved by educating them about their growing nutritional needs and supplementing their diets with various nutrients.

The geographical habitat of the country's indigenous peoples defines them as a whole. However, some of them preserve a lifestyle that has barely changed since centuries ago despite living in more or less absolute solitude. The Indian government designated 72 such tribal communities as primitive tribes due to their poor rate of growth, lack of access to modern technologies, and extremely low literacy rates (Bairwa, 2016) [1].

A healthy, balanced diet consists of the following food groups as defined by ICMR, 2011:

- Cereals and millets: Wheat, Rice, Ragi, Bajra, Maize, Wheat flour, Rice flakes and Breakfast cereals
- Pulses and legumes: Lentils, Rajmah, Peas, Soybeans, Green and Red Grammes, Bengal Grammes dal
- Fruits: Mango, Guava, Tomato, Papaya, Orange, Sweet Lime, Watermelon
- Milk and milk products: Milk, Curd, Skimmed Milk, Cheese, Paneer, Butter milk
- Meat and fish: Liver, Chicken, Mutton, Egg and fish
- Other vegetables: Okra, Brinjal, Lady finger, Cauliflower, Bottle gourd, and Bitter gourd
- Green leafy vegetables: Spinach, Fenugreek leaves, Amaranth, Radish leaves and mustard leaves
- Roots and tubers: Potatoes, Beet root, Carrots, Sweet potatoes, Onion, Radish and Yams.
- Oils and fats: Butter, Ghee, Cooking oils
- Nuts and oilseeds: Almonds, Walnuts, cashew nut and sesame seeds.

Rajasthan's scheduled tribes (ST) population is 9,238,534, according to the 2011 census. It accounts for (93%) of the twelve (12) tribes allocated for the State, whereas Garasia, Damor, Dhanka, and Saharia account for (6.6%) of the total ST population. The remaining (0.3%) tribal population is made up of the following tribes: Bhil, Meena, Naikda, Kathodi, Patelia, Kokna, and KoliDhor, as well as the generic tribes.

Objective

To find out the food diversity among tribal adolescent girls (10-19 years) in Udaipur district, Rajasthan (India).

Methodology

The current study, titled "Assessment of Nutrient Intake of Tribal Adolescent Girls," was conducted at the AICRP (All India Coordinated Research Project) on WIA (Women in Agriculture) operational villages in Rajasthan's Udaipur region. Five schools were picked from a list of schools to represent the entire Udaipur district for this study: Bramino ki Hunder, Ferniyon ka Guda, Loyra, Madar, and Thoor. A total of 150 tribal teenage girls between the ages of 10 and 19 were studied (30 from each village). A research instrument was created to investigate food diversity (consumption pattern).

A well-balanced diet is the key to good health. The World Health Organisation defines adolescent age as being between the ages of 10 and 19 years. Background data was gathered in order to collect general information/personal particulars about the selected sample, such as their name, age, family type, respondents' addresses, mobile phone numbers, economic background, caste, family income, educational qualification/ class, and food preferences.

Food frequency questionnaire: The researcher compiled a list of locally available food products that meet the daily needs of tribal females aged 10 to 19. Their consumption habits were classified as daily, weekly, monthly, seasonally, and never. Data was analysed by the frequency, percent were used.

Result and Discussion

According to general information, the majority of girls were between the ages of 13 and 15, belonged to the Gameti tribes, lived in joint families, and family earned less than 1 lakh rupees per annual. The majority of interviewees' fathers worked in construction, and their diets were vegetarian.

wheat is India's staple crop; it was found that all tribal adolescent girls consumed it on a daily basis. 87.3 percent of those polled indicated they ate rice at least once a week. Maize consumption was 59.3 percent seasonally. Maize consumption was found to be low when compared to daily wheat consumption. 79.3 percent of respondents did not consume barley, and 92.7 percent did not consume sorghum (Figure 1). According to Figure 2 In terms of pulses, around (66%) of respondents reported eating green gramme dal on a weekly basis. Around 77.3 percent of respondents drank black gramme dal on a weekly basis. (54.7%) of those polled said they did not eat pigeon peas. (44%) and (64.7%) of respondents reported consuming red lentils and Bengal gramme dal on a weekly basis, respectively. The majority of respondents did not include pulses in their usual diet and instead ate them only once a week, indicating that their intake of pulses was insufficient. Potato and onion consumption were 66.7 percent (weekly) and 73.3 percent (daily), respectively. The majority of respondents (66.7% and 68.6%, respectively) ate carrots and sweet potatoes seasonally. 37.3 percent of respondents ate beets seasonally (Figure 3). According to Figure 4, The majority of respondents (41.3%) said they ate spinach at least once a week. The majority of respondents (54%) consumed coriander leaves on a daily basis, while 53.3 percent consumed fenugreek leaves seasonally. 59.3% of those polled said they ate mustard leaves seasonally. Chenopodium leaves were consumed seasonally by 52 percent of respondents, out of all green vegetables. These data revealed that tribal adolescent females did not consume green leafy vegetables on a regular basis in places where consumption was low. Other vegetables were ingested by the majority of respondents on a weekly or seasonal basis. Lady finger and bottle gourd consumption were 36.7 percent (seasonally) and 41.3 percent (weekly), respectively. Thirty percent of those polled did not consume bitter gourd. Cabbage and brinjal were consumed weekly by 35.3 percent and 49.3 percent, respectively (Figure 5). According to Figure 6, The seasonal consumption of Indian gooseberry and mango was 45.3% and 83.3%, respectively. The weekly consumption of apple, tomato, and banana was 36.7%, 46.7%, and 35.3%, respectively. Approximately 43% of respondents said they drank milk every day. This outcome may be the result of rising fruit prices, which prevented them from purchasing these items.

Paneer was not consumed by 29.3 percent of respondents. Buttermilk and curd consumption rates were close to 58.7% (daily) and 58.7% (weekly), respectively. On a monthly basis, 41% of respondents mostly consumed khoa (Figure 7). According to Figure 8, Despite the fact that meat and fish are high in nutrients, the majority of girls did not consume them. Iron, calcium, folic acid, and vitamin A are abundant in meat, fish, and poultry beside good quality protein source. The majority of those who responded were vegetarians. Only 2% of the research group ingested mutton and chicken on a monthly basis. Egg was also consumed every two weeks by 2% of the respondents. Almond and cashew nut intake was weekly (32%) and monthly (36.7%), respectively. Because groundnut was widely available when the data was collected in February, the majority (26%) of respondents consumed only groundnut monthly. Flaxseeds, sesame seeds, and mustard seeds were the least popular seeds. Nuts have a positive effect on outcomes for health. These foods are nutrient-dense and high in bioactive substances, including unsaturated fatty acids. They contain phenolic compounds, fibre, minerals, and high-quality vegetable protein. The majority of responders (46.7%), walnut (60%) and sesame seeds (36%), did not consume pistachio nuts (Figure 9). Adolescent girls consumed mustard oil at a rate of 89.3 percent (daily). 36.7 percent of females reported using soyabean oil every two weeks. 41.3 percent of those polled said they used ghee every day. Every two weeks, 24 and 26% of girls consumed butter and groundnut oil, respectively. As a result, Figure 10's findings indicate that mustard oil, ghee, and soybean oil were the most consumed items by the tribal adolescent girls.

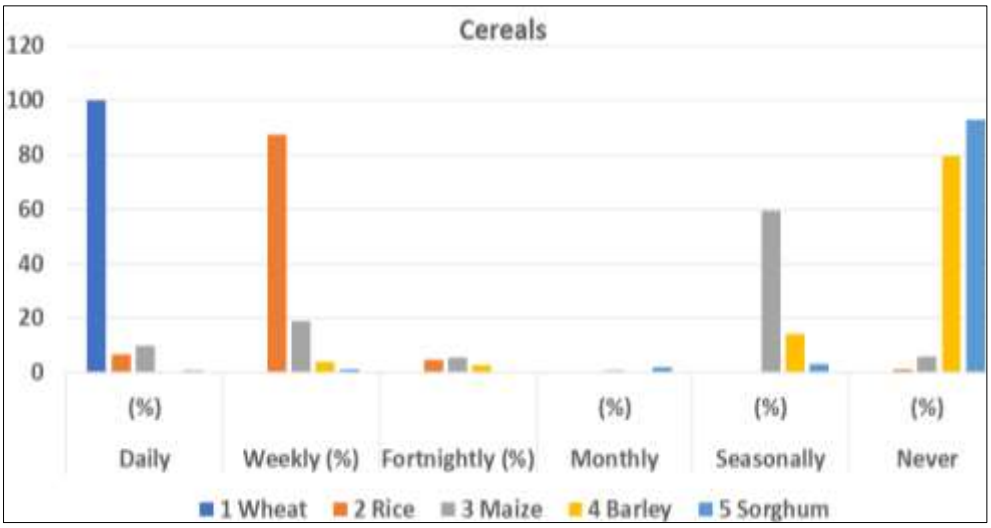

Fig 1: Percent distribution of respondents according on the basis of consumption of cereals

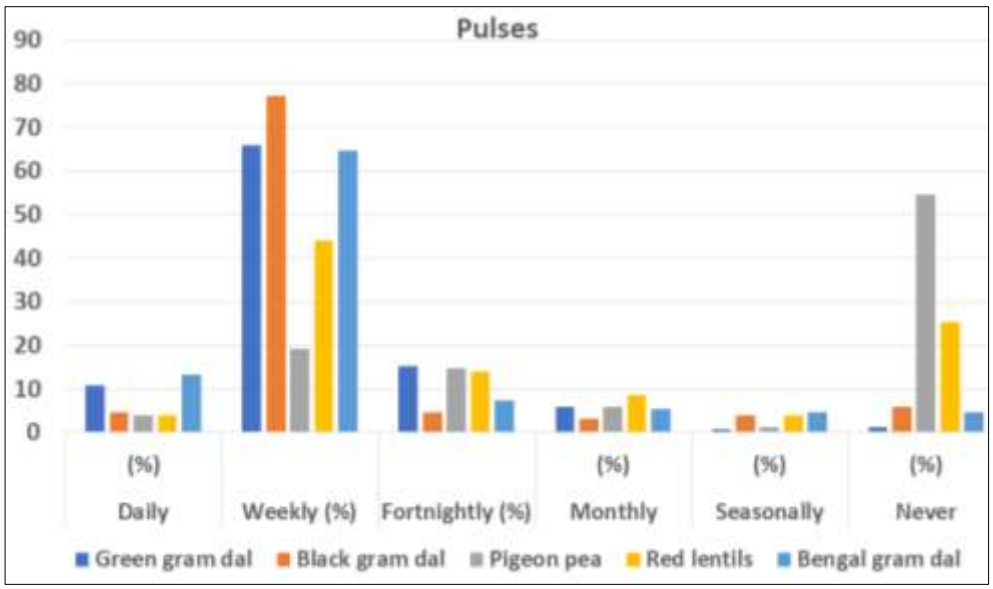

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Fig 2: Percent distribution of respondents on the basis of consumption of pulses

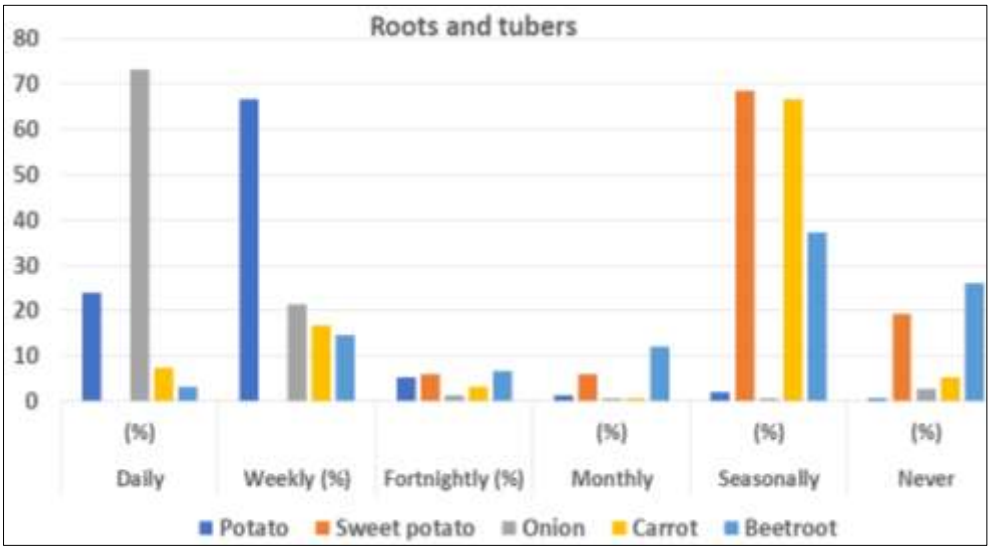

Fig 3: Percent distribution of respondents on the basis of consumption of roots and tubers

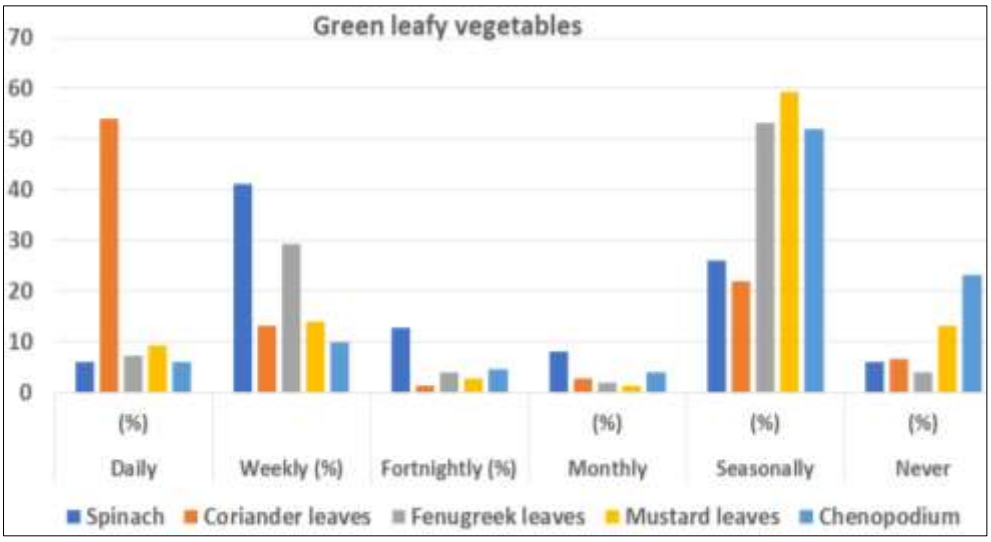

Fig 4: Percent distribution of respondents on the basis of consumption of green leafy vegetables

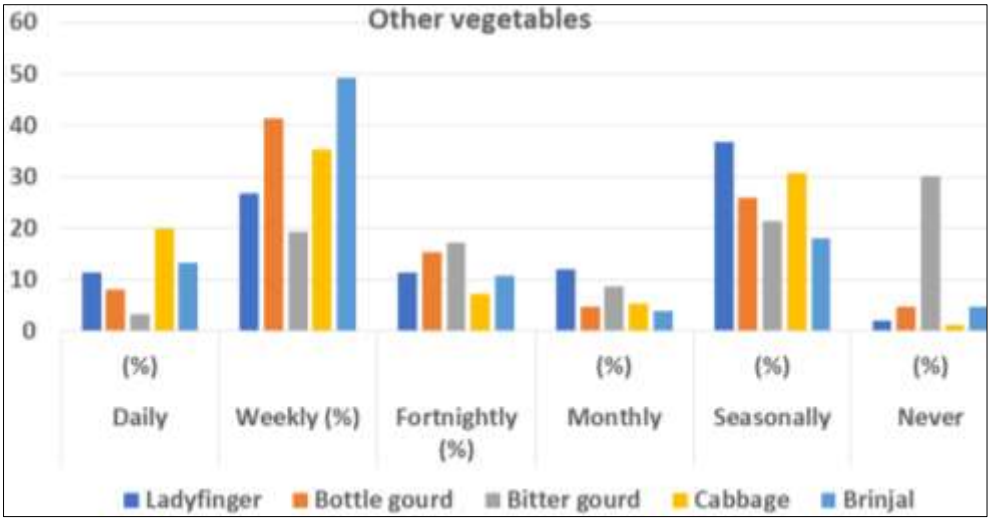

Fig 5: Percent distribution of respondents on the basis of consumption of other vegetables

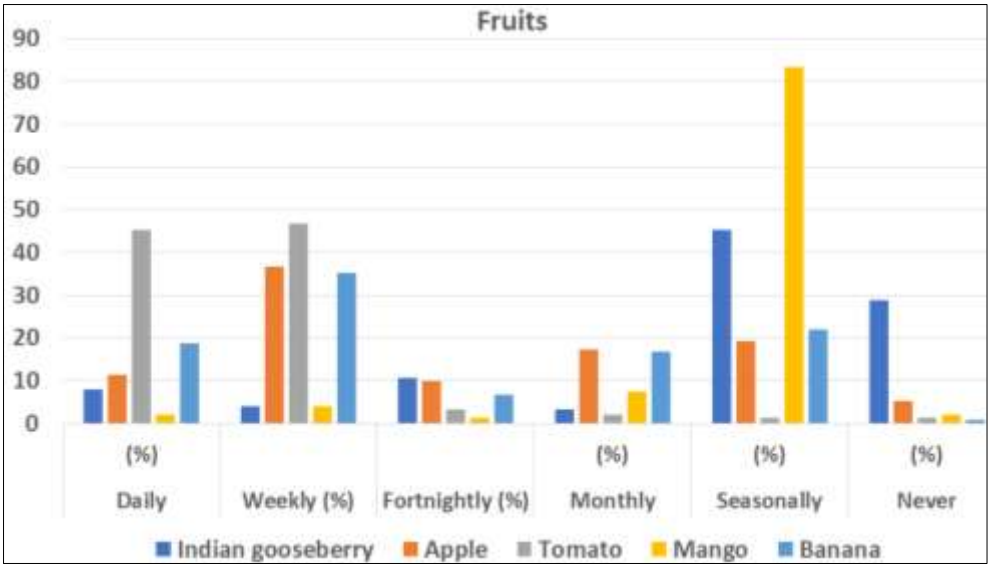

Fig 6: Percent distribution of respondents on the basis of consumption of fruits

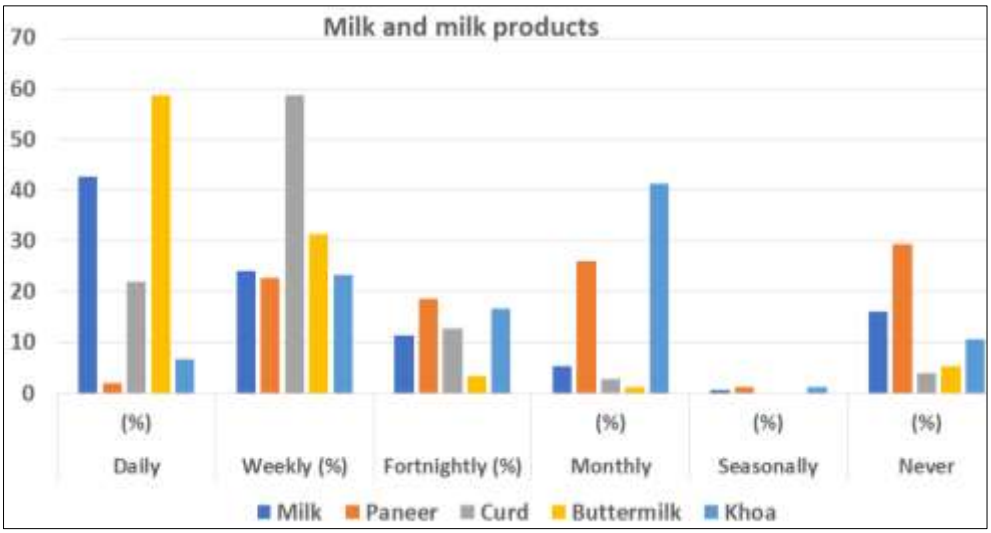

Fig 7: Percent distribution of respondents on the basis of consumption of milk and milk products

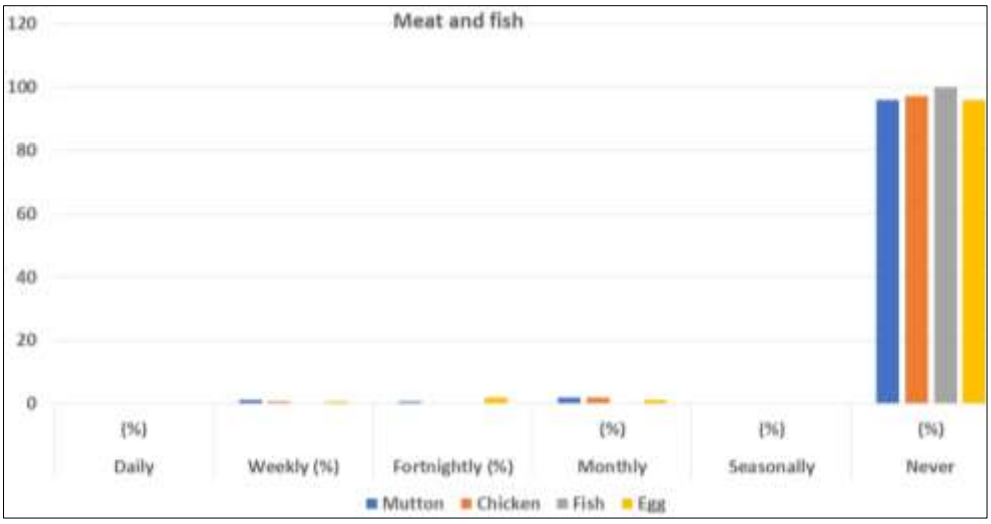

Fig 8: Percent distribution of respondents on the basis of consumption of meat and fish

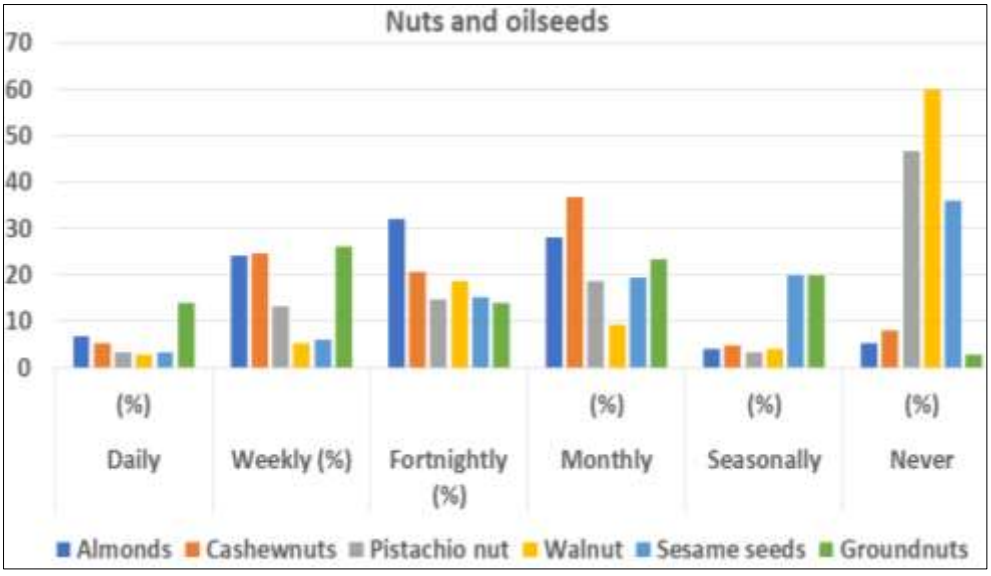

Fig 9: Percent distribution of respondents on the basis of consumption of nuts and oilseeds

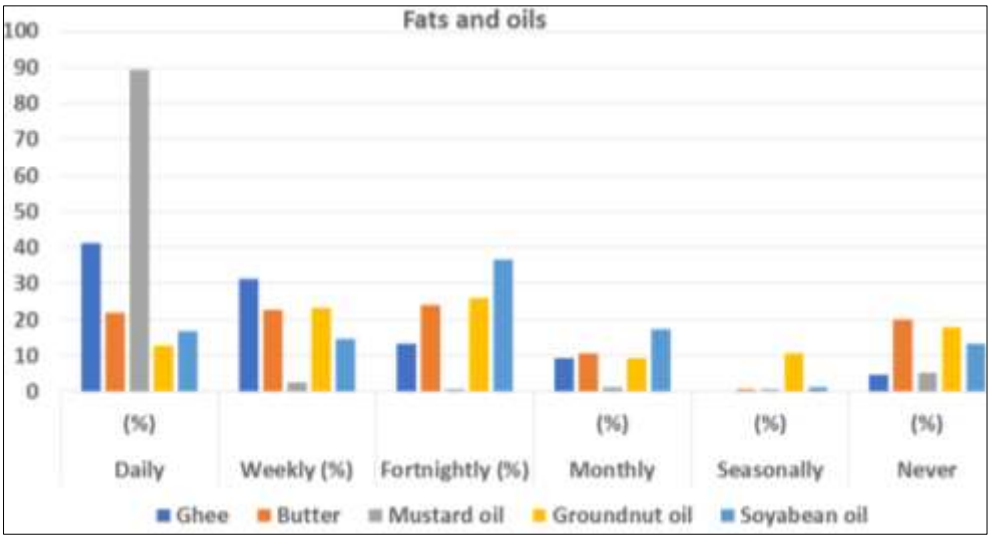

Fig 10: Percent distribution of respondents on the basis of consumption of fats and oils

Summary and Conclusion

Except for wheat, rice, pulses and cow milk in the form of buttermilk or curd, other vegetables and tea, individuals consumed essentially no micronutrient-rich meals on a daily basis. The majority of girls consumed vegetables and fruits seasonally. Green leafy vegetables were also consumed seasonally according to availability**.** They had minimal dietary diversity due to a lack of guidance and awareness, a hectic school schedule, and ignorance, and the majority of them have poor.

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