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A Study on Awareness and Consumption of Fortified Foods among Female Adults of Mumbai

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Abstract: ***Introduction: Food fortification is likely to have played an important role in current nutritional health and well-being of populations in industrialized countries. Malnutrition is one of the biggest development challenges facing the world. Over 2 billion people lack the essential vitamins and nutrients needed to grow and live healthy lives. Aim: To assess the awareness, attitude and consumption of females towards food fortification in Mumbai. Method: A study was conducted on 100 females between the age group of 18 to 60 years using a structured questionnaire. A statistical package of social sciences (SPSS) version 16 was used for analysis. Results: Over 43subjects were aware about the definition of food fortification ($\chi 2 = 75.48$, $p < 0.01$) & 52subjects knew that salt should be compulsorily fortified with iodine in India ($\chi 2 = 133.80$, $p < 0.01$).Over 76subjects consumed fortified foods ($\chi 2 = 85.76$, $p < 0.01$)& while28 consumed because it's healthy, other 28gave a mixed response ($\chi 2 = 54.75$, $p < 0.01$). Only 64subjects responded that it's affordable ($\chi 2 = 13.17$, $p < 0.01$) and42subjects got aware about it by reading on the pack of the container or through TV/magazines/newspaper/internet ($\chi 2 = 66.16$, $p < 0.01$). Breakfast cereals were consumed once in a while on a monthly basis; Breads and biscuits on a weekly basis; Snack bars on monthly basis; AmulTaaza Milk, Gemini Refined Sunflower Oil and Tata salt plus were on a daily basis and all Beverages were of mixed combinations. Conclusion: The overall awareness regarding food fortification was poor. Although the attitude was not purposeful towards fortified foods, the consumption was unconsciously more due to the availability of such products in the market.***

Keywords: Fortification, Nutrition Awareness, Vitamins & Minerals, Fortified Food, Micronutrient Deficiency

1. Introduction

Fortification of foods with micronutrients is a technologically, programmatically and economically-effective method of increasing micronutrient intakes in populations.Food fortification is likely to have played an important role in current nutritional health and well-being of populations in industrialized countries[1].One of the consequences of industrialization is reduced intake of many micronutrients, because of the large dependence of the food industry on salt, sugar, vegetable fats and refined cereals, all of which are poor sources of vitamins and minerals [2].Malnutrition is one of the biggest development challenges facing the world. Over 2 billion people lack the essential vitaminsand nutrients needed to grow and live healthy lives[3].A fortified food can be defined as an edible product (staple food, processed food, condiment, or product for special groups) manufactured by the food industry with a nutritional composition that is enhanced by the addition of vitamins and minerals [4]. Codex Alimentarius Principles for the Addition of Essential Nutrients to Foods (General Principles for the Addition of Essential Nutrients to Foods, 1991) defines "fortification", or synonymously "enrichment", as "the addition of one or more essential nutrients to a food, whether or not it is normally contained in the food, for the purpose of preventing or correcting a demonstrated deficiency of one or more nutrients in the population or specific population groups"[5].Fortification can be classified as either mandatory or voluntary. Mandatory fortification occurs "when governments legally oblige food producers to fortify particular foods or categories of food with specified micronutrients."Voluntary fortification is when a "food manufacturer freely chooses to fortify particular foods in response to permission given in food law, or under special circumstances, is encouraged by government to do so" [6]. Main Types of Food Fortification programs are Mass fortification; The addition of micronutrients to foods commonly consumed by the general public, Targeted fortification; The addition of micronutrients to foods designed for specific population subgroups, Market-driven fortification; The situation where the food manufacturer voluntarily takes the initiative to add one or more micronutrients to processed foods, usually within regulatory limits, in order to increase sales and profitability, Bio fortification; The breeding and genetic medication of plants to improve their nutrient content and/or absorption of foods which are engineered to have greater nutrients [7]. Being a food-based approach, food fortification offers a number of advantages over other interventions aimed at preventing and controlling Micronutrient Malnutrition (MNM); maintaining body stores of nutrients, lowering the risk of the multiple deficiencies, supplies micronutrients in amounts that approximate to those provided by a good, well-balanced diet, has the potential to improve the nutritional status of a large proportion of the population, feasible to fortify foods with several micronutrients simultaneously and cost effective [6].

2. Methodology

A detailed knowledge, aptitude and practise study was conducted in Mumbai on 100 females between the age group of 18 to 60 years irrespective of their caste, occupation and educational background belonging to random areas of Mumbai depending on the researcher's contacts and proximity like South Mumbai, Santa Cruz West and Vile Parle. Females from nutrition or dietetics field and Males were excluded. Purposive sampling technique was used to

recruit the study participants. A structured questionnaire was randomly distributed to subjects who actively and willingly participated which used to collect information regarding whether they find fortified food products healthy, knowledge regarding the term "fortification", practice regarding use of fortified foods and which specific food products they consume with the help of a food frequency table. Subjects were explained about any query regarding the questions stated in the questionnaire and then asked to fill the detailed questionnaire. A statistical package of social sciences (SPSS) version 16 was used for analysis.

3. Result& Discussion

Basic Characteristics of Study Participants:
In total, 100 Females were recruited in the current study. Age of participants ranged from 18 to 60 years with a mean of 29.52 ± 11.72. 69 (69.00%) were Muslims; 79 (79.00%) were Non-Vegetarians. Qualification of participants ranged from below high school to post graduates, where 35 (35.00%) were graduates; 41 (41.00%) subjects were students and 56 (56.00%) subjects belonged to middle socio - economic class (MSEC).

Awareness Of Food Fortification:
The objectives of the current research were to investigate a range of issues around public awareness. Specific information about consumers' awareness and understanding of fortification was sought.

Table 1describes the awareness and knowledge of females in Mumbai regarding food fortification. Six questions were asked to assess the knowledge.

Table 1: Awareness of food fortification

Definition of Food Fortification	*Frequency*	*Per cent (%)*	*Chi square Value*	*p Value*
Addition or Enrichment of Food Product	***43***	***43.00***	75.48	0.000**
Supplementation of food ingredients	9	9.00		
Addition of an additive	8	8.00		
Good source of a particular vitamin/mineral	10	10.00		
I'm unsure	28	28.00		
Mixed Response	2	2.00		
Label of Food Product on which Fortification details mentioned				
Front side along with the Product name	15	15.00	44.16	0.000**
Backside of the pack	17	17.00		
Nutrition information Panel	***27***	***27.00***		
Ingredient List	13	13.00		
Somewhere else on the pack	1	1.00		
Other (Specify)	1	1.00		
I don't know	18	18.00		
Mixed Response	8	8.00		
Government makes it compulsory for manufacturer to fortify food product				
Yes	***44***	***44.00***	7.28	0.026*
No	22	22.00		
I'm unsure	34	34.00		
Fortified Food Products in India				
Bread	1	1.00	2.38	0.000**
Breakfast Cereals	7	7.00		
Biscuits	2	2.00		
Milk & Milk Products	5	5.00		
Fruit Juices	2	2.00		
Butter/ Oils	0	0		
Salt	2	2.00		
Water	2	2.00		
All of them	18	18.00		
I'm Unsure	7	7.00		
Any other (Specify)	0	0		
Mixed Response	***54***	***54.00***		
Vitamins/Minerals Used in Food Fortification				
Vitamin A	1	1.00	1.62	0.000**
Vitamin D	0	0		
Vitamin C	0	0		
Vitamin E	0	0		
Thiamine	0	0		
Riboflavin	0	0		
Niacin	0	0		
Folic Acid	0	0		
Calcium	1	1.00		
Iron	2	2.00		
Iodine	1	1.00		

Zinc	0	0		
Omega 3- fatty acid	0	0		
Dietary Fibre	1	1.00		
Probiotics	1	1.00		
All of them	27	27.00		
Any Other (Specify)	0	0		
I'm Unsure	***33***	***33.00***		
Mixed Response	***33***	***33.00***		
One or more Minerals in salt should be added in India				
Calcium	1	1.00	133.80	0.000**
Iodine	***52***	***52.00***		
Iron	12	12.00		
Any Other (Specify)	1	1.00		
I don't know	15	15.00		
Mixed Response	16	16.00		

*p value < 0.05 was considered to be significant
**p value < 0.01 was considered to be highly significant

When study participants were asked about the definition of food fortification,43 (43.00%) responded addition or enrichment of food product. These differences were highly significant **(χ^2 = 75.48, p <0.01).** Majority of the participants were aware about the definition of food fortification.

When subjects were questioned on which part of the food product are fortification details mentioned, 27 (27.00%) responded nutrition information panel. These differences were highly significant **(χ2 = 44.16, p <0.01)**. Highest per cent of participants were of the opinion that any fortification detail will be in the nutrition information panel.

Out of 100females, 44 (44.00%) subjects responded that government makes it compulsory for the manufacturer to fortify some food products. These differences were significant **(χ2 = 7.28, p <0.05)**. Though most of the subjects were aware about compulsory fortification, some were unsure.

When female subjects were asked about their knowledge regarding which food products are fortified in India,54 (54.00%) gave a mixed response. These differences were highly significant **(χ2 = 2.38, p <0.01)**. Majorly subjects were of the mixed response that breakfast cereals, biscuits and salt are fortified with vitamins/minerals in India. Twenty days intake of Se-enriched-rice increase the serum selenium levels and erythrocyte glutathione peroxidase (GPx) activity [8].

Which vitamins/ minerals are used in the fortification of foods; 33 (33.00%) gavemixed response and 33 (33.00%) were not sure. These differences were highly significant **(χ2 = 1.62, p <0.01)**. Most subjects gave a mixed response of Vitamin D, Calcium, Iron& Iodine while others were unsure. Consumption of an Fe-fortified breakfast cereal with kiwifruit compared with banana improved Fe status [9].

When inquired about the mineral with whichsalt should be fortified,52 (52.00%) said Iodine. These differences were highly significant **(χ2 = 133.80, p <0.01)**. More than half of the participants knew that salt should be compulsorily added with iodine while few gave a mixed response with Iodine and Iron. Double fortified salt (DFS) is an efficacious approach to improving iron status [10]. Multiple micronutrient fortified salt was able to improve iron and vitamin A status [11].

Attitude of Females Towards Food Fortification

After assessing the knowledge of the participants, the study focused on various aspects of attitude and behavior of subjects towards fortified foods.

Table 2 describes the attitude of females regarding food fortification. Thirteen questions were asked to assess the basic attitude of participants towards fortified food products.

Table 2: Attitude of females towards food fortification

Fortified Foods consumed	*Frequency*	*Per cent (%)*	*Chi square Value*	*p Value*
Yes	***76***	***76.00***	85.76	0.000**
No	4	4.00		
I'm unsure	20	20.00		
If Yes, which fortified food groups				
Bread	0	0	2.15	0.000**
Breakfast Cereals	1	1.30		
Biscuits	0	0		
Milk & Milk Products	0	0.0		
Fruit Juices	1	1.30		
Butter/ Oils	0	0		
Salt	7	9.20		
Water	0	0		
All of them	17	22.40		
None of them	0	0		

Any Other (Specify)	0	0	0.85	0.931
Mixed Response	***50***	***65.80***		
If No, what is the reason for not consuming				
It's expensive	**1**	**25.00**		
Not beneficial	**1**	**25.00**		
Not available in the area	**1**	**25.00**		
Not the grocery purchaser	0	0		
Unaware	***1***	***25.00***		
Reasons for consuming Fortified Food Product				
Healthy	***28***	***30.10***	54.75	0.000**
To prevent Micronutrient Deficiency	16	17.20		
Improve Immunity	7	7.50		
Increase Strength	5	5.40		
Any Other (Specify)	1	1.10		
Unsure	8	8.60		
Mixed Response	***28***	***30.10***		
Fortified Foods improved Health Condition				
Yes	***40***	***43.00***	7.54	0.023*
No	19	20.40		
Made no difference	34	36.60		
Fortified Foods Affordable				
Yes	***64***	***68.80***	13.17	0.000**
No	29	31.20		
Suggestion over other foods Fortification				
Rice flakes/ Puffed Rice	1	1.10	82.67	0.000**
Rolled Oats	0	0		
Ready to eat mixes/ Soups	2	2.20		
Cheese/ Paneer	2	2.20		
Sugar/ Jaggery	0	0		
Jams/ Marmalades/ Jellies	0	0		
Tea/ Coffee	0	0		
All of them	33	35.50		
Any Other (Specify)	0	0		
Unsure	20	21.50		
Mixed Response	***35***	***37.60***		
Source of information about fortified food products				
Read on pack container	***42***	***45.20***	66.16	0.000**
TV/Magazine/Newspaper/Internet	15	16.10		
Read it in health article	5	5.40		
Heard from family/friend	14	15.10		
Others (Specify)	1	1.10		
Mixed Response	16	17.20		
Food label read before buying Fortified product				
Yes	***51***	***54.80***	0.87	0.351
No	42	45.20		
Taste of Fortified Food changed				
Yes	***40***	***43.00***	4.06	0.131
No	25	26.90		
Made no difference	28	30.10		
Texture of Fortified Food changed				
Yes	***38***	***40.90***	5.09	0.078
No	34	36.60		
Made no difference	21	22.60		
Appearance of Fortified Food changed				
Yes	***38***	***40.90***	3.16	0.206
No	31	33.30		
Made no difference	24	25.80		
Overall acceptability of Fortified food affected consumption				
Yes	31	33.30	1.61	0.446
No	26	28.00		
Made no difference	***36***	***38.70***		

*p value < 0.05 was considered to be significant
**p value < 0.01 was considered to be highly significant

In**Table 2,** Whenasked about consumption of fortified foods; 76 (76.00 %) said yes. These differences were highly significant **($\chi2 = 85.76$, $p < 0.01$)**. Maximum subjects out of 100 said they consumed fortified foods.

When asked specifically to the participants those who consumed fortified foods about the food items, 50 (65.8%) subjects gave a mixed response. These differences were highly significant **($\chi2 = 2.15$, $p < 0.01$)**. Majority of the subjects gave a mixed combination of breakfast cereals, biscuits, salt, milk & milk products.

When subjects were inquired for the reasons of not purchasing fortified foods,1 (25.00%) reported respectively for each thatthey are unaware, it's expensive, not beneficial, and not available in the area they live. These differences were non-significant **($\chi2 = 0.85$, $p > 0.05$)**.

When asked about the reasons for consuming fortified foods, 28 (30.10%) reported because it's healthy while other 28(30.10%) said it's healthy as well as increases strength and improves immunity. These differences were highly significant **($\chi2 = 54.75$, $p < 0.01$)**. In general, most of the participants consumed fortified food because it's healthy.

Forty (43.00%) subjectsreported their health condition improved after consuming fortified food products. These differences were significant **($\chi2 = 7.54$, $p < 0.05$)**. Highest percent of subjects had improved health after consumption of fortified foods.

Sixty four (68.80%)subjects reported that fortified foods are affordable. These differences were highly significant **($\chi2 = 13.17$, $p < 0.01$)**.Fortification with iron, iodine, and potentially zinc provides significant economic benefits and the low unit cost of food fortification ensures large benefit: cost ratios, with effects via cognition being very important for iron and iodine [12].

When asked about suggestions regarding fortification of food items, 35 (37.60%)gave a mixed response. These differences were highly significant **($\chi2 = 82.67$, $p < 0.01$)**. Maximum mixed response was for rice flakes/puffed rice, cheese/paneer, sugar/jaggery and jams/marmalades/jellies.

Forty-two (45.20%) subjects gained awareness about fortification by reading on the pack of the container. These differences were highly significant **($\chi2 = 66.16$, $p < 0.01$)**. Majorly subjects got aware about fortification by reading on the pack of the container or TV/magazines/newspaper/internet.

When asked about conscious purchasing of food items, 51 (54.80%) subjects read the food label before buying fortified food. These differences were non-significant **($\chi2 = 0.87$, $p > 0.05$)**. About half of the subjects do conscious purchasing of fortified foods.

Taste Change:Forty(43.00%) subjects agreed, while 28 (30.1%) felt no difference and 25(26.90%) said it did not change. These differences were non-significant **($\chi2 = 4.06$, $p > 0.05$)**.

Texture Change: Thirty eight (40.90%) subjects agreed, while 34(36.60%) said no and remaining 21 (22.60%) said it did not made any difference. These differences were non-significant **($\chi2 = 5.09$, $p > 0.05$)**.

Appearance change: Thirty eight (40.90%) subjects agreed but 31(33.30%) said it did not change and24 (25.80%) felt there is no difference. These differences were non-significant **($\chi2 = 3.16$, $p > 0.05$)**.

Overall Acceptability: Thirty six (38.70%) subjects reported that the overall acceptability of the fortified food product made no difference in their consumption, while 31 (33.30%) felt it did affect their consumption and 26(28.00%) were sure that it did not affect their consumption. These differences were non-significant **($\chi2 = 1.61$, $p > 0.05$)**.

Majority of the subjects agreed that fortification has changed the taste, texture and appearance of the food products. However the overall acceptability of the fortified food products made no difference in their consumption.

Consumption Of Fortified Foods:
A list of total 102 fortified food products was prepared and attached to the food frequency questionnaire (FFQ) and the options provided in the FFQ were daily, weekly, fortnightly and monthly. Data was collected on frequency of consumption of total 102 products.

Each graph describes the frequency (percentage) of individuals consuming the fortified foods. The participants were asked to describe the frequency of consumption of fortified food items within each food group. The maximum frequency is highlighted.

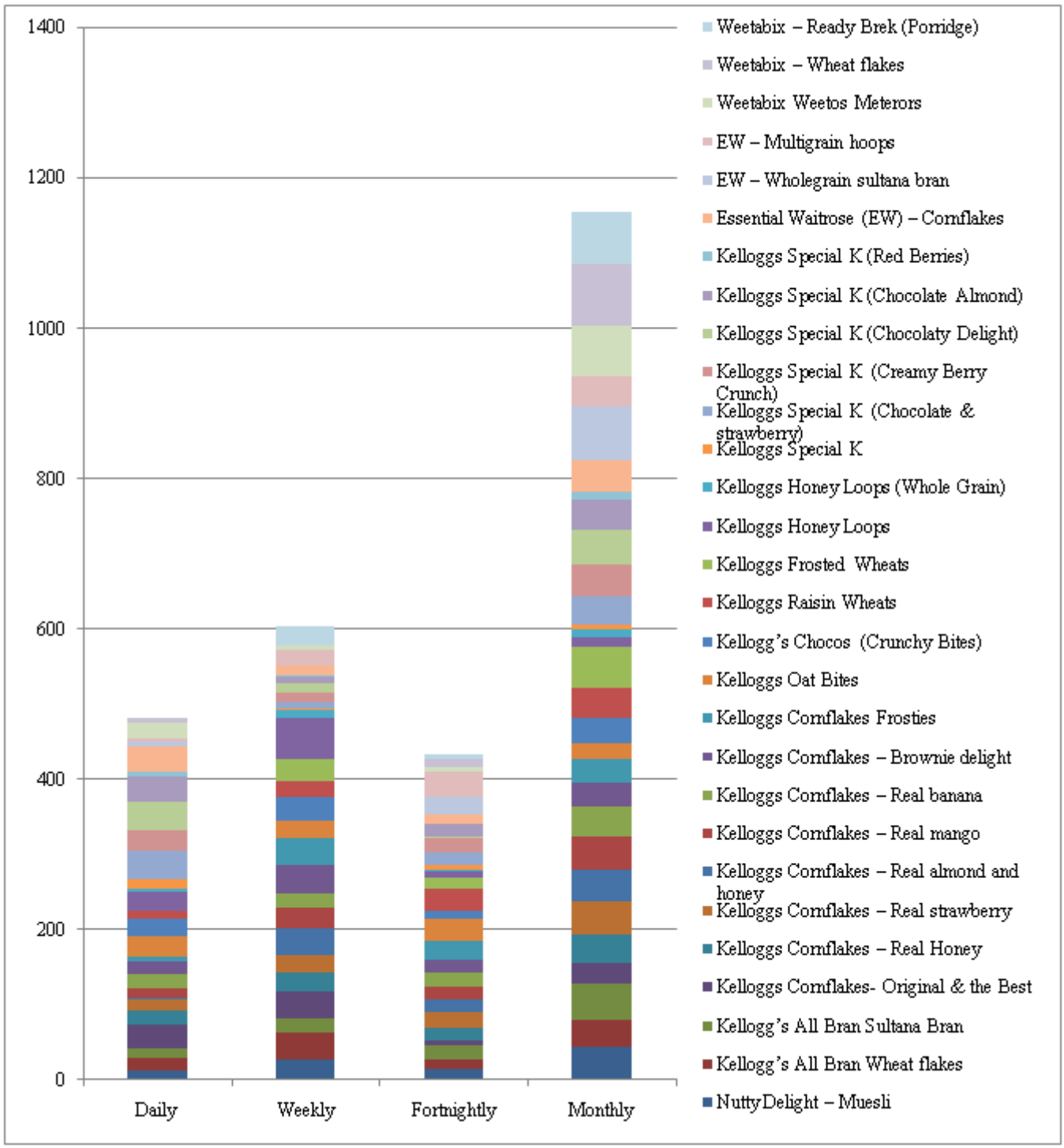

Figure 1: Food frequency consumption of breakfast cereals

From the data collected, **Figure 1** shows that out of total 29 products of breakfast cereals, highest frequency was reported under monthly consumption for 21 products. Four products reported highest frequency under weekly category, among them Kelloggs Honey loops (56.00%) was consumed by maximum participants followed by Kelloggs Cornflakes Brownie delight (37.50%), Original and the Best (35.10%) and Frosties(35.30%). However for 3 products the highest frequency reported were in combinations; KelloggsOatbites(28.00%) for daily and fortinightly, Kelloggshoneyloops (wholegrain)(10.00%) for weekly and monthly and Kelloggs Special K (Chocolate & Strawberry)(37.90%) for daily and monthly. Kelloggs Special K (11.00%) was the only product with the highest frequency reported under the daily category. Out of 100 female subjects, most of them consumed breakfast cereals once in a while on a monthly basis. Consumption of 1 cup fortified breakfast cereal daily significantly increased B vitamin and decreased homocysteine concentrations, including post methionine-load homocysteine concentrations [13]. The addition of a moderate amount of calcium to a cereal product was beneficial to calcium absorption and did not interfere with iron absorption. Use of calcium-fortified food products may be considered a practical approach to increasing the calcium intake of children [14].

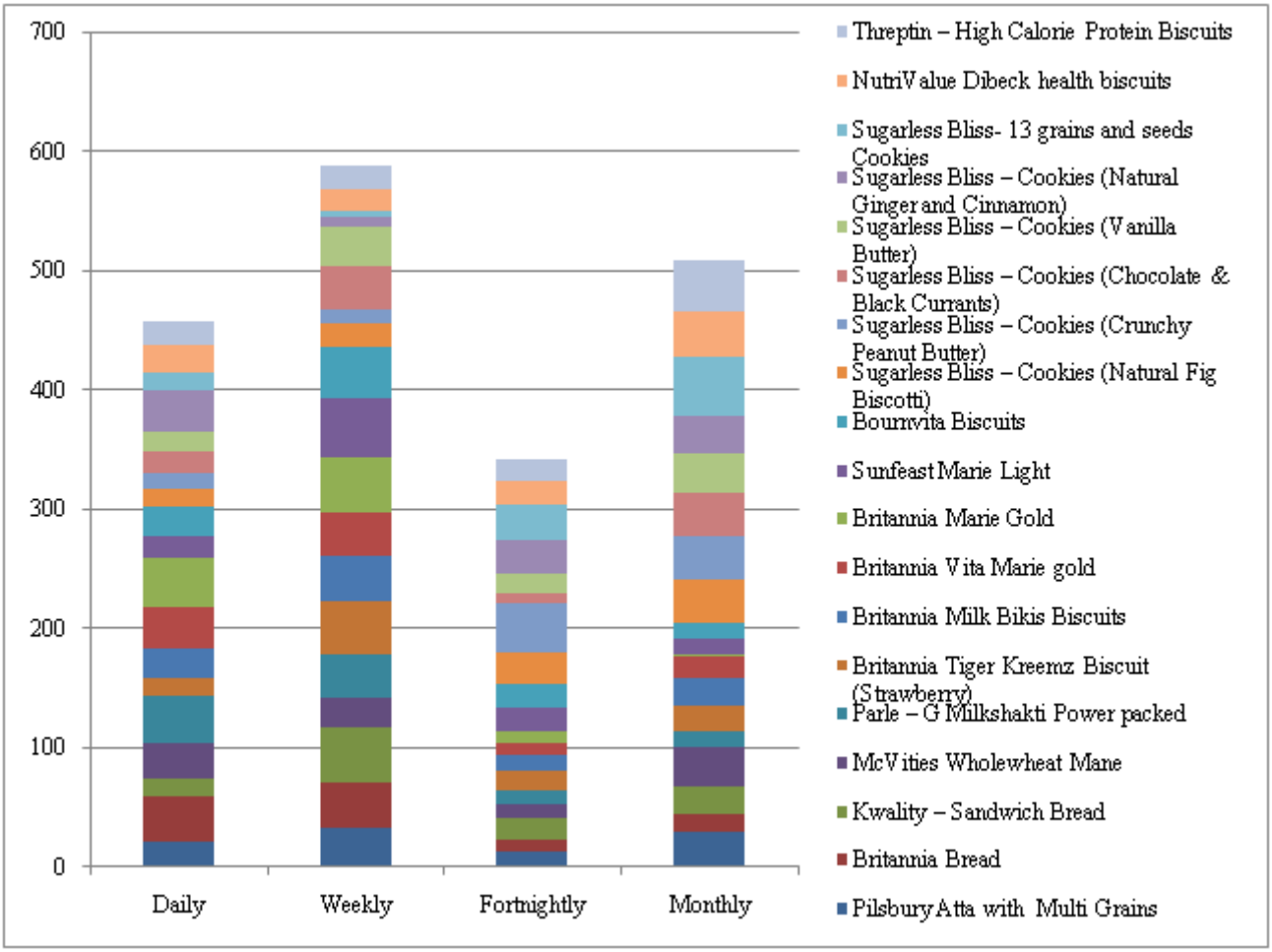

Figure 2: Food frequency consumption of bread and biscuits

From the data collected, **Figure 2**shows that out of total 19 products of breads and biscuits, highest frequency was reported under weekly consumption for 8 products which includes Sunfeast Marie Light (50.00%), Britannia Marie Gold (46.80%), Kwality – sandwich bread (46.20%), Britannia Tiger Kreemz Biscuit (Strawberry) (44.40%), Bournvita Biscuits (42.90%), Britannia Milk Bikis Biscuits (38.00%), Britannia Vita Marie gold (36.10%) and Pilsburyatta with multi grains (33.30%). However 5 products reported highest frequency under monthly category, among them Sugarless Bliss- 13 grains and seeds Cookies (50.00%) was consumed by maximum participants followed by Threptin – High Calorie Protein Biscuits (42.90%), NutriValueDibeck health biscuits (38.10%), Sugarless Bliss – Cookies (Natural Fig Biscotti) (36.00%) and Mcvitieswholewheat Mane (33.30%). For 3 products the highest frequencies reported was in combinations; Britannia Bread (38.00%) for daily and weekly basis and Sugarless Bliss – Cookies (Chocolate & Black Currants) (36.40%) and Sugarless Bliss – Cookies (Vanilla Butter) (16.70%) for weekly and monthly basis. Parle – G Milkshakti Power packed (40.00%) and Sugarless Bliss – Cookies (Natural Ginger and Cinnamon) (34.50%) were the only products with the highest frequency reported under the daily category while only Sugarless Bliss – Cookies (Crunchy Peanut Butter) (40.00%) was fortnightly. Out of total 19 products under the breads and biscuits category, most of the products were consumed once in a while on a weekly basis.Consumption of fortified breads and breakfast cereals was associated with a higher folate status [15].

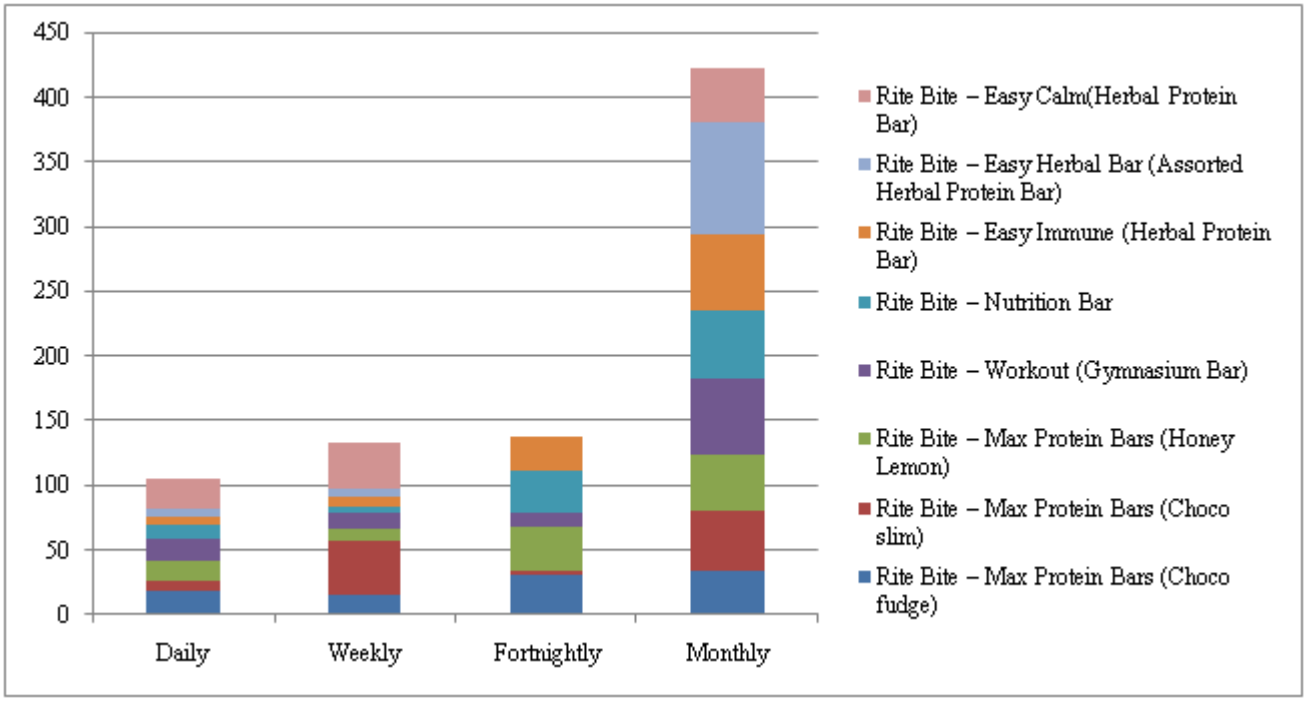

Figure 3: Food frequency consumption of snack bars

Figure 3shows that all products under the Snack bars category reported highest frequency under monthly basis, among them Rite Bite – Easy Herbal Bar (Assorted Herbal Protein Bar) (86.70%) was consumed by maximum participants followed by Rite Bite – Easy Immune (Herbal Protein Bar) (60.00%), Rite Bite – Workout (Gymnasium Bar) (58.80%), Rite Bite – Nutrition Bar (52.60%), Rite Bite – Max Protein Bars (Choco slim) (46.20%), Rite Bite – Max Protein Bars (Honey Lemon) (42.90%), Rite Bite – Easy Calm(Herbal Protein Bar) (41.20%) and Rite Bite – Max Protein Bars (Choco fudge) (34.60%).None of the snack bars were reported with highest frequencies under daily, weekly and fortnightly category.

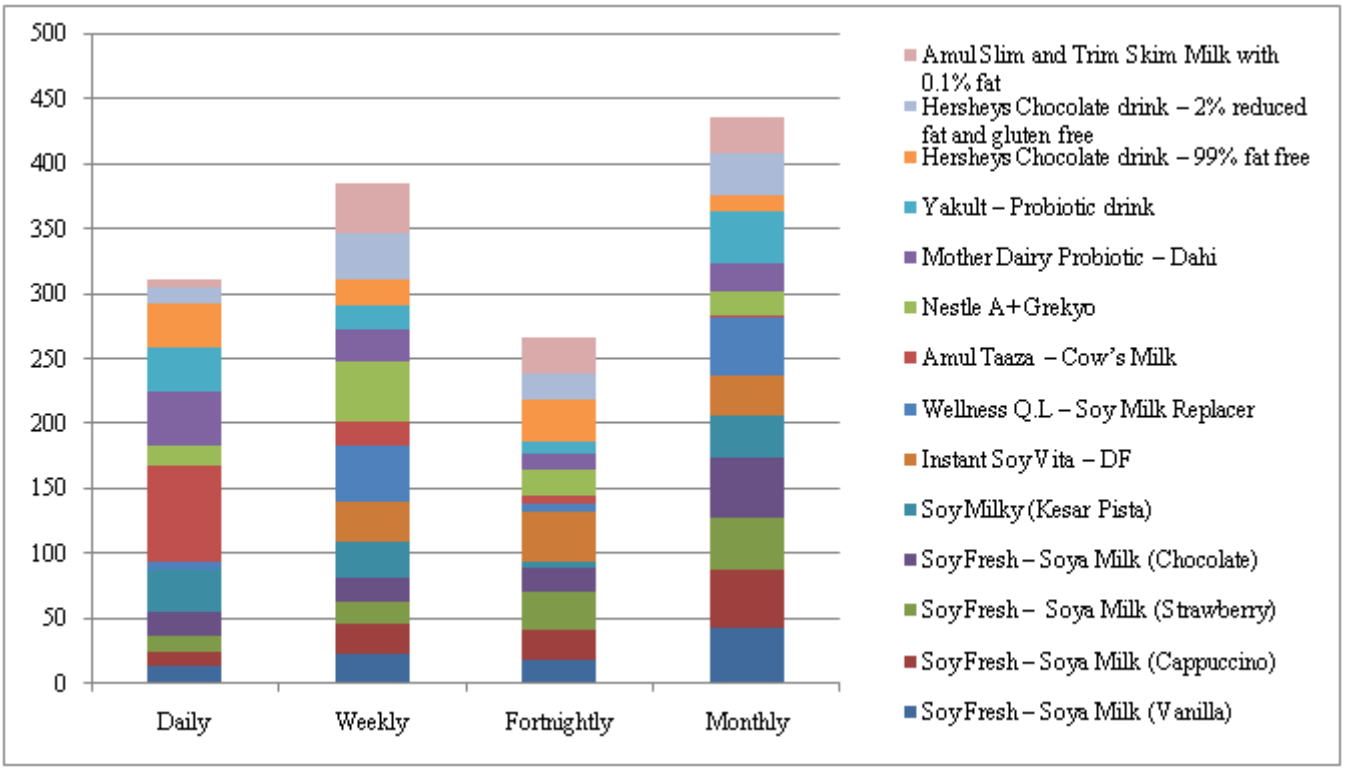

Figure 4: Food frequency consumption of milk & milk products

Figure 4 shows that 5 products were recorded to be consumed with highest frequency in the monthly category; Soy Fresh – Soya Milk (Chocolate) (45.50%), Soy Fresh – Soya Milk (Cappuccino) (44.40%), Soy Fresh – Soya Milk (Vanilla) (42.90%), Soy Fresh – Soya Milk (Strawberry) (41.20%) and Yakult – Probiotic drink (39.40%). Among all

milk and milk products, highest frequency was reported in the daily consumption of AmulTaaza – Cow's Milk (73.80%) followed by Mother Dairy Probiotic – Dahi (41.50%) &Hersheys Chocolate drink – 99% fat free (35.00%). Nestle A+ Grekyo (46.20%), Amul Slim and Trim Skim Milk with 0.1% fat (38.90%) and Hersheys Chocolate drink – 2% reduced fat and gluten free (36.00) were the products in the weekly category with highest frequencies. However for 2 products the highest frequency reported were in combinations; Soy Milky (KesarPista)(33.30%) for daily and monthly while Wellness Q.L – Soy Milk Replacer (43.80%) for weekly and monthly basis. Instant Soy Vita – DF (38.50%) was the only product reported with the highest frequency under fortnightly category. AmulTaaza- Cow's milk was the most consumed on daily basis while other soy milk products were only taken once in a while on a monthly basis under the milk and milk products category.

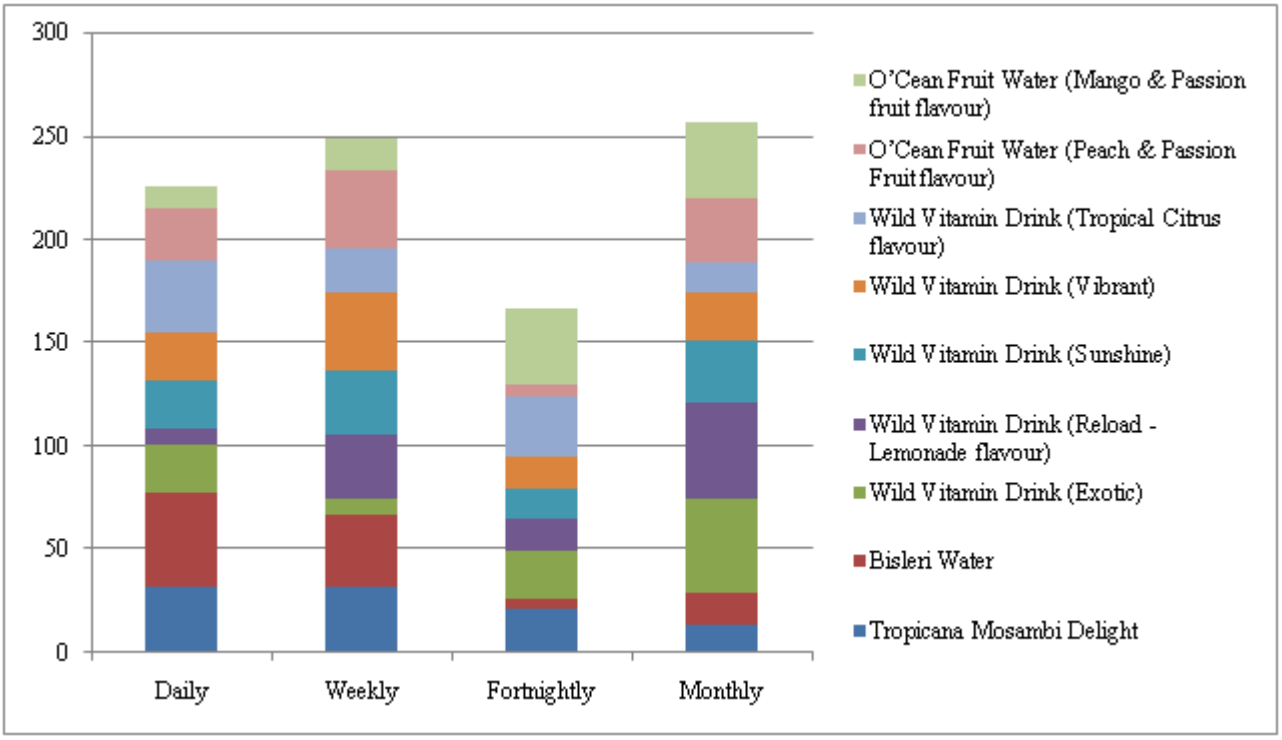

Figure 5: Food frequency consumption of Beverages

Figure 5shows that beverages were consumed on equal basis of each frequency category; While Wild Vitamin Drink (Exotic) (46.20%) and Wild Vitamin Drink (Reload - Lemonade flavour) (46.20%) were reported with the highest frequency under monthly basis, Wild Vitamin Drink (Vibrant) (38.50%) and O'Cean Fruit Water (Peach & Passion Fruit flavour) (37.50%) was for weekly basis and remaining 2 products were for daily consumption with the highest frequency of Bisleri Water (45.50%) followed by Wild Vitamin Drink (Tropical Citrus flavour) (35.70%). However for 3 products the highest frequency reported was in combinations; Wild Vitamin Drink (Sunshine) (30.80%) for weekly and monthly basis, O'Cean Fruit Water (Mango & Passion fruit flavour) (36.80%) for fortnightly and monthly basis and Tropicana Mosambi Delight (32.40%) for daily and weekly basis.

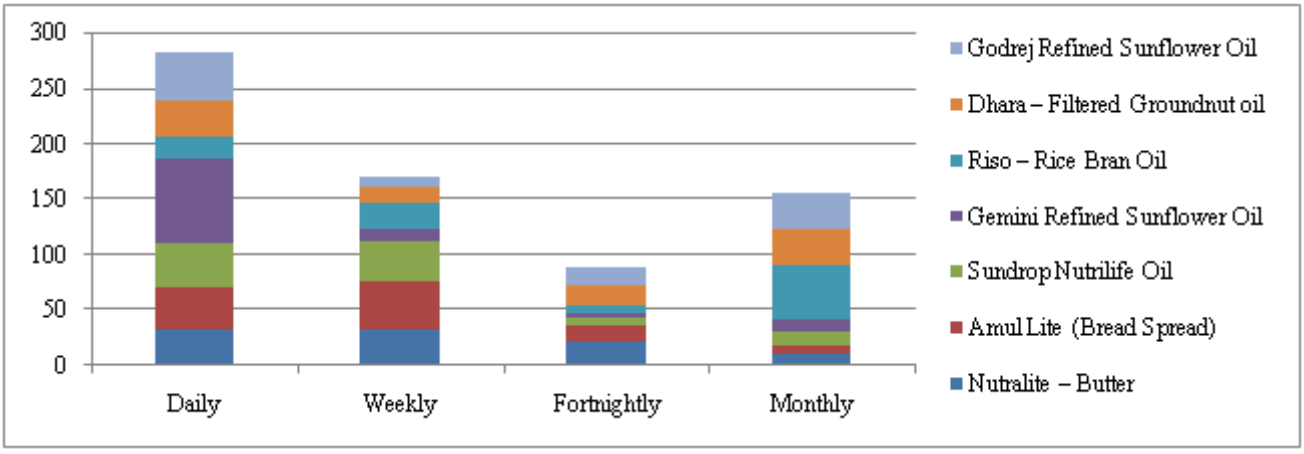

Figure 6: Food frequency consumption of Fats/Oils

Out of 7 products, **Figure 6** shows that 3 were of the highest frequency consumed under daily category among them were Gemini Refined Sunflower Oil (76.50%) followed by SundropNutrilife Oil (40.50%) and Godrej Refined Sunflower Oil (40.00%). While only AmulLite (Bread Spread) (42.20%) and Riso – Rice Bran Oil (50.00) was each reported with highest frequency for weekly and monthly, respectively. Two products were reported with frequencies in combinations; Nutralite – Butter (33.30%) for daily and weekly while Dhara – Filtered Groundnut oil (33.30%) for daily and monthly. The highest frequency of product reported under daily basis was Gemini Refined Sunflower Oil (76.50%).

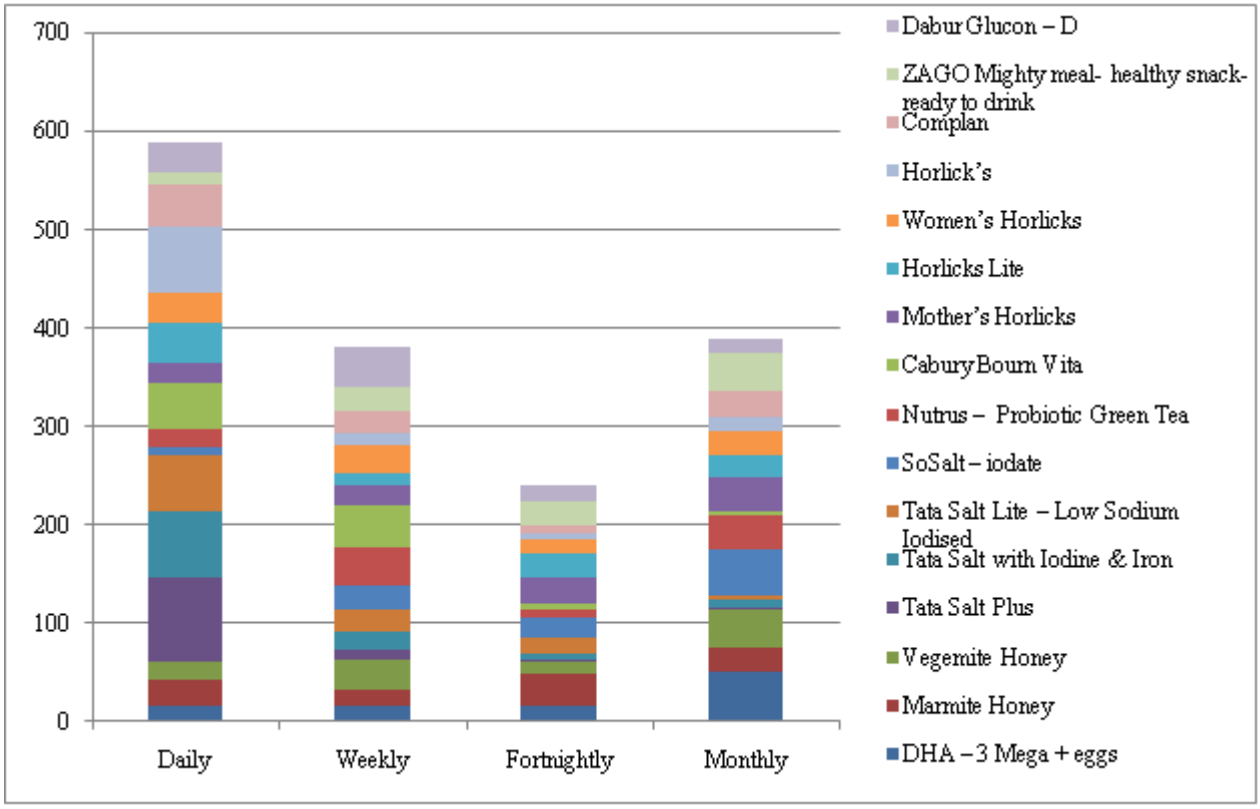

Figure 7: Food frequency consumption of miscellaneous items

Figure 7 shows that out of 16 products, 7 were reported with highest frequencies under daily category where Tata Salt Plus (86.00%) was with highest percentage followed by Horlick's (67.90%), Tata Salt with Iodine & Iron (66.00%), Tata Salt Lite – Low Sodium Iodised (57.70%), Cabury Bourn Vita (47.40%), Complan (43.30%) and Horlicks Lite (41.20%). DaburGlucon – D (39.50%) and Nutrus – Probiotic Green Tea (39.10%) were reported with highest weekly frequency while Marmite Honey (31.60%) was fortnightly and SoSalt – iodate (45.80%), ZAGO Mighty meal- healthy snack-ready to drink (37.50%), Vegemite Honey (37.50%) and Mother's Horlicks (33.30%) were highest on frequency under monthly basis. However 2 products were with highest frequency in combinations; DHA – 3 Mega + eggs (16.70%) for daily, weekly and fortnightly while Women's Horlicks (30.00%) for daily and weekly. Maximum products were consumed with highest frequencies on a daily basis.

4. Conclusion

The overall awareness regarding food fortification and fortified food products was poor. Although the attitude was not purposeful towards fortified foods, the consumption was unconsciously more due to the availability of such products in the market.

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