

Awareness and Perception of Functional Foods Among Undergraduate Students in Sri Lanka

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Abstract – Recently, ‘Asian diet’ has transferred to the ‘Western diet’ leading high occurrence of Non-Communicable Diseases (NCDs) which is a major issue in the younger generation as well. Mainly, 18.8% of undergraduates are overweight, and 18.2 % of undergraduates are obese in Sri Lanka. This could be due to poor dietary habits with the consumption of high fat or sugar-containing foods and lack of Functional Foods (FFs) in the diets. The present study aimed to investigate the awareness and perception of FFs among undergraduate students in Sri Lanka. The survey was conducted using a google questionnaire on 541 undergraduates aged between 20-27 years. The questionnaire consisted of four sections in order to check their knowledge on FFs. Quantitative data were analyzed by using frequencies and percentages. Most (60.44%) undergraduates were unaware of the term FFs. Interestingly there is a significant effect of gender on the knowledge about FFs (Chi-Square test, $P \leq 0.05$), 56.69% of female undergraduates were aware of the term FFs while only 32.99% of male undergraduates were aware of the term FFs. There is a significant effect from the academic year for the knowledge about Functional Food Products ($P \leq 0.05$), and the 4th year students had the highest knowledge compared to other academic years (77.84%). These results suggest that gender and academic year affect to knowledge of FFs. Further, most undergraduates (83.48%) are still interested to learn about FFs. Therefore, in this study, we have identified the potential of undergraduate students to add FFs in their diet.

Keywords: *Functional Foods, Undergraduates, Non-Communicable Diseases, Awareness*

I. INTRODUCTION

Functional foods (FFs) are foods that beneficially affect body functions beyond the basic nutrients. Bioactive compounds found in FFs can increase physical and mental health and reduce the risk of many chronic diseases. They not only satisfy hunger but also provide necessary nutrients to humans by enhancing the health and personal well-being [1]. The modern concept of FF was built by the Japanese by linking the food with traditional Asian philosophy [2]. FFs are beneficial to all human beings in various life stages. However, awareness about the FFs among the society is still lacking and “functional food” concept is novel to the consumers. Especially the younger generation should be well aware of the FFs since many chronic diseases have started to appear in the younger generation recently [3].

Undergraduates represent the major segment of the younger generation who are the future of our society. Thus, their health can be considered crucial in the development of the country. According to some previous studies, 18.8% and 18.2% of

undergraduates are overweight and obese in Sri Lanka due to poor dietary habits and consumption of high fat or sugar-containing foods [4].

Lack of knowledge regarding FFs minimizes purchasing FFs in the market as consumers’ knowledge interacts with the good purchasing process. Therefore, awareness of the younger generation regarding FFs can be a key to promote FFs among the younger generation as the first step in the motivation of the younger generation towards in eating more FFs [5].

Globally many research studies have been done to assess knowledge about FFs in the younger generation. However, the information is still lacking. Therefore, the present the study focusses on gathering and assessing the awareness and perception of functional foods among undergraduate students in Sri Lanka.

II. MATERIALS AND METHODS

A. Development of questionnaire and Data Collection

The survey was conducted using the google questionnaire administered age 20–27 years old 541 Sri Lankan undergraduates between December 2021 and January 2022. The questionnaire was conducted in English. It was distributed via emails. The questionnaire was consisted of four sections. The first part was about the demographic characteristics of the undergraduates. The second part was general question about FFs without using the term FFs. End of the 2nd section students had to select 3rd or 4th part based on their awareness of the term FFs. If the student who were aware of the term FFs could access to 3rd part. If the students who were not aware of the term FF was assessed in 4th part. One participant could participate in only three sections of the questionnaire.

B. Statistical analysis

The results were statistically analyzed by the Minitab 19 statistical software. Quantitative data was analyzed by calculating summary statistics including frequencies and percentages. Determination between categorical data was statistically analyzed using Chi-square analysis.

III. RESULTS AND DISCUSSION

Most (63.59%) undergraduates were females, and 36.41% of undergraduates were males. Most (42.14%) of the undergraduates were aged between 24 and 25, while 31.61% had been educated in the 1st year, 14.79% had been educated in the 2nd year, 22.74% had been educated in the 3rd year, and 30.87% had been educated to the 4th year. Most undergraduates (60.44%) were unaware of the term ‘FFs’, and 39.56% of

undergraduates were aware of the term 'FFs'. Female undergraduates had more knowledge of FFs than male undergraduate students. According to the results, only 43.31% of female undergraduates have not become familiar with the term "Functional Food," while 32.99% of male undergraduates have become familiar with the term "Functional Food". Further, most male undergraduates (67.01%) were unaware of the term 'FFs' than females (56.69%). Interestingly there is a significant effect of gender on the knowledge about FFs (Chi Square test, $P \leq 0.05$). 4th year undergraduates had more knowledge of Functional Food Products [(FFPs) (54.49%)], while 1st year students had lower knowledge of FFPs (32.92%). According to the results, 4th year students had more knowledge about FFs than other years. Further, undergraduates had lower knowledge of FFPs; therefore, need to improve and become familiar with FFPs.

Most (65.42%) undergraduates had knowledge about FFs, while 34.58% of undergraduates hadn't knowledge of FFs. The results show that most undergraduates (73.36%) agree that FFs have compounds that help to prevent chronic diseases. Most undergraduates (68.22%) agree that FFs are biologically active and healthy foods (64.02%). But, only 20.09% of undergraduates agreed that FFs are part of our diet. So, most do not have a big idea as FFs are part of our diet. Therefore, the responsibility should be on improving knowledge about FFs so far. Most (74.29%) female undergraduates had knowledge about FFs, while 25.71% of male undergraduates had knowledge of FFs. Most (55%) rural area living undergraduates had knowledge about FFs, while 45% of urban area living undergraduates had knowledge of FFs. 39.29% of 4th year, 22.86% of 3rd year, 15% of 2nd year and 22.86% of 1st year undergraduates had knowledge of FFs.

Only 43.71% of 4th year undergraduates have become familiar with the term "Functional Food," while 33.92% 1st year undergraduates have become familiar with the term "Functional Food". Further, most 1st year undergraduates (66.08%) were more unaware of the term 'FFs' than 4th year students. According to the results, the need to improve knowledge of FFs and to be familiar with the term 'FFs' of 1st year students and male students. The academic year has a significant effect on the awareness of FFPs (Chi-Square test, $P \leq 0.05$).

When considering the knowledge of prevention of chronic diseases, most undergraduates had knowledge of the prevention of chronic diseases (73.13%). Female students (74.84%) had more knowledge of preventing chronic diseases than males (64.29%). Most undergraduates had knowledge of the prevention of chronic diseases (73.13%). 4th year students (77.85%) had more knowledge of preventing chronic diseases than another year. 1st year students had little knowledge of the prevention of chronic diseases (66.67%). According to the results, need to improve knowledge of chronic diseases of 1st year undergraduate students and male students. There is a significant effect of awareness about the prevention of chronic diseases on gender. At the same time, there is no significant effect of awareness about the prevention of chronic diseases on the academic year and awareness of the term 'FFs' [(Chi-Square test, $P \leq 0.05$).

33.6% of undergraduates who had knowledge about FFs consumed fruits once a week, while 28.46% of undergraduates

consumed daily compared to undergraduates who hadn't knowledge about FFs (14.41%). 50.09% of undergraduates consumed condiments daily. And knowledgeable students of FFs consumed FFs and FFP more than undergraduates who hadn't knowledge about FFs. Among undergraduates who were unaware of the term 'FFs', 71.25% ginger, 64.22% garlic, 49.54% carrot, 55.35% Mango, 50.76% vitamin C added yogurt, 58.40% Omega 3 rich fish, 45.25% probiotic yoghurt, 5.2% bread, 9.7% pizza and 9.7% noodles considered as being a FFs. According to the results, most undergraduates who were unaware of the term 'FFs' were able to select FFs after understanding the provided definition in the survey. 70.09% of the undergraduates reported that they came to know about the FFs via the internet, while 83.48% of undergraduates like to learn more about FFs via the internet. Therefore, the most suitable media is the internet to distribute the knowledge about FFs among the younger generation. And after the finishing survey, 80.12% of undergraduates who were unaware of the term 'FFs' have improved their knowledge about FFs. Today, the Internet is the best and easy way to learn about various subjects.

Conclusions

This study has shown that undergraduate students' socio-demographic characteristics (age, academic year, and gender) are important indicators that influence awareness and perception of FFs. Survey results concluded that undergraduate students have enough knowledge about FFs in this context, although they were unaware of the term 'FFs.' The most important thing for researchers should be to distribute knowledge to undergraduate students about the term 'FFs'. The survey results suggest that knowledge of FFs could affect undergraduates' interest in FFs; the internet might be necessary to distribute the knowledge of FFs. Further, there is a need to be the familiar term 'FFs' among undergraduate students.

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