Does your education have an impact on your protein-mindfulness? – a case study among E^{3}UDRES^2 students

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Abstract

In December 2024, a workshop was carried out within the E^{3}UDRES^2 Hackathon project by a group of the Future Leaders Programme's academic career path. The main goals of the workshop were to get a vision of how much students from different European universities know about proteins and to educate them through presentations and non-formal learning methods. At the beginning of the workshop participants had filled out a questionnaire with 12 questions regarding consumer mindfulness of proteins. Results show that participants who pursue food-related studies tend to have a higher average consciousness about their protein sources and intake when examining it on a scale from one to ten.

Keywords: Future Leaders Programme, E^{3}UDRES^2, protein consumption, dietary habits

Introduction

The research took place in Budapest, during the E^{3}UDRES^2 Hackathon, in December 2024. E^{3}UDRES^2 is an acronym for Engaged and Entrepreneurial European University as Driver for European Smart and Sustainable Regions. Hackathons are organised by the E^{3}UDRES^2 program. During these short events students generate new ideas and solutions to real life problems, and currently popular topics. Hackathons provide only up to 36 or 48 hours for participants to come up with a new, innovative idea to the given problem. These programs sharpen the time management and organization skills of those who take part in them. The theme of the 2024 Hackathon was „One World". The specific topic in Budapest was „One Protein". A general lecture and a workshop were held during this event, both related to the topic of proteins and different diets. The main goal was to assess the protein consumption habits of the students who participated in the Hackathon and to educate them about healthier

eating habits. This subject is closely connected to an other project, which is currently going on in the Future Leaders Program. The Future Leaders Program is a new initiative for purpose-driven students, where participants work on various scientific research projects. In this program, students can choose from four different career paths: management, business and innovation, policy and public administration, and academia. Our task in this program is "Nutritional Myths and Science - Proteins in Black and White."

A study conducted in 2024 by Juliana Akio Watanabe et al. investigated the connection between culinary skills and the consumption of processed foods. The results show that there has been a shift towards greater consumption of processed and ultraprocessed foods, with a decrease in adherence to the Mediterranean diet. As processed foods replace homemade meals, the health consequences, including reduced diet quality, become evident. These changes are particularly noticeable in younger populations.

Another survey, which examines the implications of a global protein transition in the face of climate change, also found that societies are shifting from traditional diets to more Western-style, animal-product-heavy diets (Christie L. Lumsden, 2024). Nowadays, alternative proteins are gaining popularity in wealthier countries, but their impact on low- and moderate-income countries remains uncertain.

Goals

The E^3UDRES^2 Hackathon 2024 – One World – One Protein event was organised on the Buda Campus of the Hungarian University of Agricultural and Life Sciences in 11th – 12th December 2024. In the framework of the event participants worked together in groups to find a solution to contemporary challenges in the field of proteins and protein consumption.

Our project group, set up under MATE's Future Leaders Programme, is looking at the perception of proteins and protein sources. During the event, our team held a general lecture and a workshop to further educate the students about different aspects of proteins.

In the focus of our work was to survey general nutritional and protein consumption habits. Our main goal was to gain a deeper understanding of the proportion of consumption trends within the group and the participants' attitudes toward health-conscious lifestyles, and to draw conclusions for educational purposes.

Methodology

The workshop, held during the Hackathon, took around 2 hours, and 32 students from St. Pölten University of Applied Sciences, Politehnica University Timisoara and the Hungarian University of Agriculture and Life Sciences had participated in it. At the beginning, the participants were asked to fill out a questionnaire about proteins to gather information about their knowledge about proteins and about their habits related to their protein intake. The questionnaire had been filed out by 27 people. The questions and their possible answers can be found in the table below.

1. Table: Questions of the protein questionnaire

	Questions	**Possible answers**
1	Gender	Woman Man Other Prefer not to say
2	Age	Own answer
3	What is your field of studies?	Own answer
4	How conscious are you about your dietary choices?	Ranking 1-10
5	What is the most important factor for you when buying food? (Environmental impact, Accessibility, Budget, Health attributes)	Putting in the correct order
6	When did you last learn about proteins?	Middle school High school University Own research Social media
7	How mindful are you about your protein sources?	Ranking 1-10
8	How mindful are you about your daily protein intake?	Ranking 1-10
9	Which factors do you consider when choosing protein sources? (Environmental impact, Accessibility, Budget, Health attributes, Animal welfare)	Putting in the correct order
10	If you are mindful about your protein choices, explain how that shows/reflects in your everyday life?	Own answer
11	Rank these protein sources according to your dietary habits from the most important to the least important: Legumes, Fish, Dairy products, White meat, Eggs, Red meat, Other plant-based proteins!	Putting in the correct order
12	Do you follow any special diet?	No

		Omnivorous Vegetarian Vegan diet Paleo diet Mediterranean diet Ketogenic diet Other

Main results and reflections

The questionnaire the participants had filled out at the beginning of our workshop aimed to assess student's nutritional habits, with a particular focus on protein intake.

The participants had different educational backgrounds when it came to their knowledge about proteins. One of the key indicators of nutritional mindfulness was their field of study, in which the group showed to be very diverse. More than one-third of students studied food-related subjects, like food engineering, food science and human nutrition. Five students were studying computer science, but there were electrical, mechatronics and chemical engineers as well as media, management and biotechnology students. Our group had also asked the students what was the last time they were actively learning about proteins. This information had turned out to be another key factor when examining nutrition-consciousness of participants.

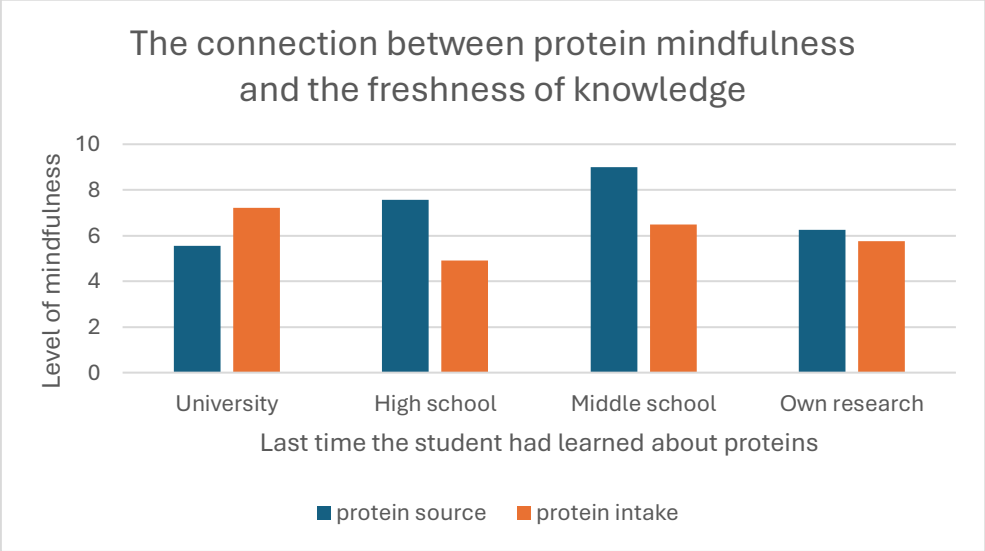
We aimed to gain information about nutritional mindfulness of the participants by asking them to rank themselves by how conscious they are about their protein sources and intake. The scale went from one to ten, and the higher score meant the participant is more conscious about their protein-related choices.

When it came to protein sources, the average mindfulness was 6.56, but people with food-related studies tended to have a higher score, 7.44 in average. The same could be said about protein intake. While the average consciousness was 6.04, students with educational background in food sciences had shown to be more considerate and had an average score of 7.22.

Another remarkable factor is the freshness of student's knowledge about nutrition and proteins. When considering protein sources, people who have last learned about it at middle school gave themselves a higher score in average than those who have learned about it at high school - or even university. The same trend can be seen about protein intake, except here the

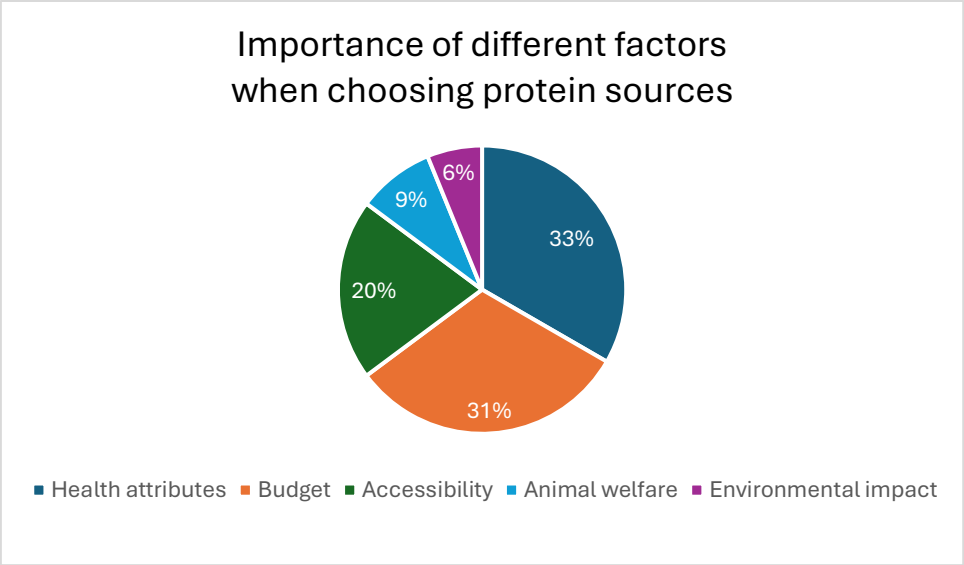
highest average score belongs to those who have last learned about proteins at a university level.

1. Diagram: Protein mindfulness and freshness of knowledge



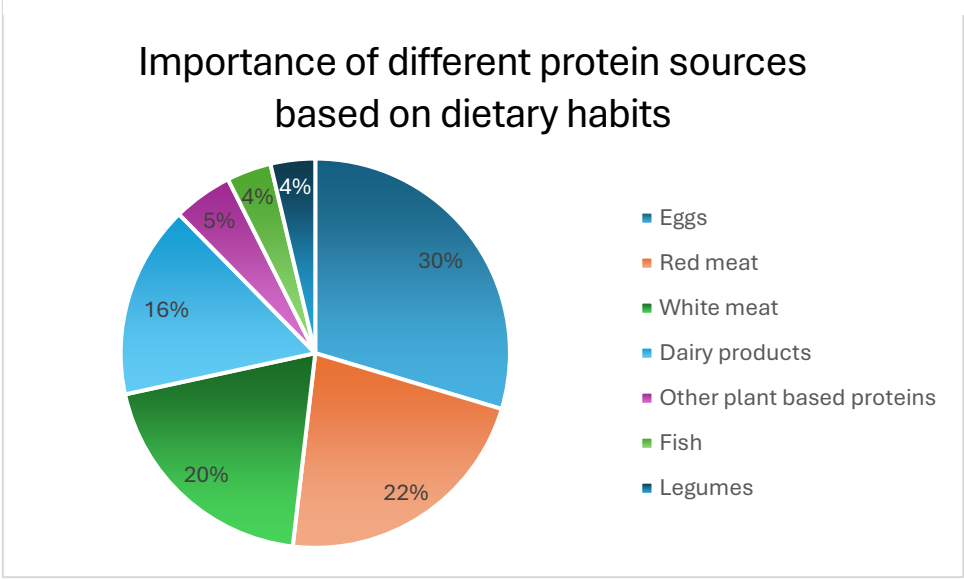
One of the tasks for the participants was to rank the importance of different factors that influence their choices when they choose between protein sources. Previously they had to do the same task, but focusing on their general food purchasing habits. When thinking generally the order was: budget, health attributes, accessibility and then environmental impact. When ranking these elements focusing on protein sources, the results show that students consider health attributes to be the most important when deciding between different products, but it is closely followed by the financial aspect of the food they choose. The third most important element is how accessible different protein sources are at the moment of buying them. This was followed by animal welfare and then lastly, the environmental impact of the chosen protein source.

2. Diagram: Importance of different factors when choosing protein sources



In another part of the questionnaire students had to rank different types of protein sources. The most popular source were eggs, which could be explained by the participant's budget-sensitivity, or the accessibility and nutritional values of this product. There was only a little difference between the popularity of red and white meat. Dairy products were also quite preferable, while legumes, other plant-based proteins and fish turned out to be less important than the previously mentioned protein sources.

3. Diagram: Importance of different protein sources



The 10th question of the questionnaire required a personal answer. Six of the students declined to provide further information about their protein consumption habits and another six of them stated that they are not interested in their protein intake. The results took a groundbreaking turn here, because the students who are studying food-related subjects make up fifty percent of these uncertain answers.

Two of the students experience that their well-balanced protein consumption makes a positive impact on their physical appearance and sport performance. Three participants experience better metabolism and stronger immune system when they are mindful about their protein sources. Most of the students pay attention to the nutrients of the food they are consuming, with special highlights on the protein amount. Four of the young adults are trying to take their protein from various sources, including vegetables and animals. Only one student of the twenty-seven is mindful about both the variety and the amount of their daily protein dosage. These diverse answers show that the striving for healthy protein consumption is not only realted to the person's studies, but rather the personal aspiration to be healthier.

It is important to keep in mind that because the number of participants in this study is relatively low, the results are not representative.

Conclusions

The workshop our group held at the E^3UDRES^2 project's Hackathon event was successful. The results of our questionnaire showed that the average mindfulness about protein consumption is 6.56 on a scale from one to ten, where ten is the most mindful. We can also conclude that participants with food-related educational backgrounds were more conscious about their protein consumption than the other students, and participant's level of education about proteins also affected these results. When it came to ranking the different factors that affect their purchase of food in general, budget was in the first place. However, when it came to the same question about proteins, health attributes took the first place. Environmental impact was the least important, which shows us that our society still cares more about financial aspects and health benefits than the impact their choices have on our planet and the future of food production. The most important protein source from those offered, eggs were at the first place, and plant-based proteins were among the lasts. This result is thought-provoking

because we can hear more and more about vegan and vegetarian dietary trends and their success, but it seems that it still has not yet made such a big difference in this generation.

If the workshop would be held again, the questionnaire should be repeated after the presentations, to see if any new thoughts were implemented in the participants.

References

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