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Nutritional Habits of High School Students, Probiotic Dairy Products Consumption Frequency and Their Identification Statements

Mine Turgut¹, Vedat Çınar², Taner Akbulut²

¹ Sakarya University, Faculty of Sport Sciences, Turkey

² Firat University, Faculty of Sport Sciences, Turkey

Abstract

This research was carried out in order to determine information about the nutritional habits, probiotic dairy product consumption frequency and the identifications of students in their high school years. A total of 374 students participated in the research which included 183 female students and 191 male students who were still continuing their education at the central high schools attached to Pendik/Kurtköy County of Istanbul. A screening model and questionnaire forms were used in the research as tools for data collection.

The average heights of female students who participated in the research was 164.89±6.14 cm, their average weight was 55.25±7.86 kg while in male students the average height was 172.64±7.99 cm and average weight was 63.91±11.14 kg. 23.6% of the students stated that they do in fact skip meals, while 46.0% said they do not, and 13.6% said that they sometimes skip meals. 78.3% of the students indicated that they consume probiotic food and 21% stated that they do not. 32.9% stated they do so upon recommendation while 30.7% of those who do not consume said they do not because they did not know about it.

According to the data obtained through the research: 41.6% of high school students consume yogurt, 33.6% consume milk while the same figure reduced down to 2.9% for kefir and 3.6% kumiss. Accordingly, solution proposals were offered in order to carry out studies on raising awareness among students about adequate and balanced nutrition as well as informing them about dairy products other than the well-known ones (yogurt, milk, etc.) and to increase their consumption of such products. Statistical evaluation was produced using SPSS 22.0 software. Frequency, percentage distribution calculation and chi-square test were used as statistical analysis in the research.

Keywords: consumption frequency, nutritional habits, probiotic food

8. Introduction

We can define food as everything with physiologic action. Air, water, medicine and similar materials are included within that description. However, the most correct definition for food is providing the continuation of the organism's existence, growth and materials that contain proteins, carbohydrates, fats, minerals and vitamins in order to recover the things that it loses (1).

Humans need nutritional elements in order to survive. Knowing how much of these nutritional elements to take daily, ensuring a healthy growth and development are required to maintain a productive lifestyle for a long time. When any one of the nutritional items is not consumed or consumed a little less or more than what the body needs, it has been scientifically proven that growth and development are disrupted and health deteriorates (2,3).

Nutrition is the act of consciously consuming the amount of food that can provide the daily nutritional requirements of the body. Well nourishment, a balanced and sufficient diet when combined with regular physical activity is one of the building blocks of a good health. Undernourishment, on the other hand, weakens the immune system, increases the potential for diseases, disrupts physical and mental development and decreases productivity (4,5,6). It is possible to prevent, early diagnose or stop already existing problems such as slimness, fatness, shortness and short height problems by closely monitoring children's growth and development (7).

The most recent developments in the fields of food and nutrition show that food ingredients play a major role in the regulation of body functions. These ingredients contribute greatly to improving health, decreasing the risk for certain diseases and therefore improving the quality of life. The increased consumer levels of education as well as the changes in their lifestyles have also changed their nutritional habits which significantly affected the demand for food items with healthy sustenance. Probiotics are the most important of these food items (8).

As per Sönmez's (2009) definition: Probiotics are the microorganisms that positively affect human or animal health when consumed sufficiently in general. The word "probiotic" was first used in today's context in 1974 by Parker and was described as "live food source that positively impact the microbial balance in the intestines" by Dr. R. Fuller and Dr. C. B. Cole (9).

Young people need to eat healthy, exhibit the correct attitude towards nutrition and have the right information regarding nutrition. Thereby, the individuals who eat healthy during their youth will largely be protected against chronic diseases in their later years that may occur due to their nutritional habits and their health expenses will be reduced therefore preventing the health problems that deeply impact the country's budget. This research is important in terms of identifying high school students' nutritional habits, eating attitudes, their consumption of the probiotic foods which has increased in use in today's society and the information they have on probiotics. It is also critical for taking the necessary steps and measures to reach the desired level and propose recommendations to relevant organizations from this point of view.

2. MATERIALS AND METHODS

2.1. Study Groups

High schools located around the County Center of Pendik – Kurtköy in Istanbul form up the population of this research. The reason why Pendik- Kurtköy County was selected as the research area was the fact that the researcher was familiar with the area and that no similar research was carried out in this area before, in addition to the convenience to perform work and obtain correct data. 374 people participated in the research.

2.2. Data Collection Tool

Research data was collected by the researcher using the questionnaire technique. The questionnaire form which was developed as the data collection tool was preferred due to being the appropriate tool for collecting data. Experts' opinion was received; related dissertations and researches were analyzed during the preparation phase of the questionnaire form. The questionnaire form consists of three sections. The first section includes questions to obtain information about the students and their families while the second section includes questions regarding the students' nutritional habits as well as a chart that will determine their frequency of food consumption. And finally, the third section comprises their

probiotic food consumption statuses, a chart indicating their frequency of probiotic dairy products consumption and another chart to determine their knowledge about probiotic foods. The chart about the probiotic products is composed of 20 articles. The information shown on the chart has been arranged in quintet rating as “I don’t agree at all”, “I don’t agree”, “I’m indecisive”, “I agree”, “I agree completely”.

2.3. Data Analysis

Data collected regarding the sub-problem the answers of which are being sought within the scope of the research was first processed in the data coding charts on computer. Later, the required statistical analyses were executed on the collected data using the SPSS (Statistical Packet for Social Sciences) 22.0 package software. Frequency, percentage calculation and chi-square test were used for statistical analysis.

3. (FINDINGS)

This section includes research findings and comments based on these findings.

Chart 1: Students’ Distribution Based on Gender

Gender	f	%
Female	183	48.9
Male	191	51.1
Total	374	100.0

Chart 1 indicates that 48.6 % of students are female and 51.4 % are male.

Chart 2: Students’ Distribution Based on School and Grade

School Name	f	%
Kurtköy Anadolu High School	100	26.7
Kurtköy Multi Program High School	91	24.3
Kurtköy Anatolian İmamhatip High School	112	29.9
Hulisi Behçet Medical Vocational High School	71	19.1
Total	374	100.0
The grades of the students who participated in the research	f	%
9 th grade	128	34.3
10 th grade	100	26.7
11 th grade	45	12.0
12 th grade	101	27.0

Total	374	100.0
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Chart 1 indicates that 48.6% of students were female students, 51.4% were male students while 26.7% of this population studied at Kurtköy Anatolian High School, 24.3% studied at Kurtköy Multi Program High School, 29.9% studied at Hülisi Behçet Medical Vocational High School. Upon continued review of the Chart, it is revealed that 34.3% were 9th grade students, 26.7% were 10th grade students, 12.0% were 11th grade students and 27.0% were 12th grade students.

Chart 3: Physical Characteristics of Students Participating in the Research

	N	Age (year) (Mean±SD)	Height (cm) (Mean±SD)	Weight (kg) (Mean±SD)
Female	183	15.57±1.22	164.89±6.14	55.25±7.86
Male	191	15.71±1.33	172.64±7.99	63.91±11.14

Upon review of the physical characteristics of students participating in the research; Chart 2 indicates age, height and weight of female student group was 15.57±1.22 year, 164.89±6.14 cm, 55.25±7.86 kg and male student groups' was 15.71±1.33 year, 172.64±7.99 cm, 63.91±11.14 kg.

Chart 4: Frequency and Percentage Distributions Regarding the Research Group's Knowledge about Their Dietary Habits

Variables		f	%
How many meals a day do you eat?	2 meals	123	32.9
	3 meals	103	27.5
	4 meals	122	32.4
	5 meals and more	26	7.2
	Total	374	100.0
Do you sometimes skip meals during the day?	Yes	106	28.3
	No	207	55.3
	Sometimes	61	16.4
	Total	374	100.0
Which meal do you skip the most?	Breakfast	155	41.4
	Lunch	179	47.9
	Dinner	40	10.7
	Total	374	100.0
Do you pick food?	Yes	206	55.3
	No	168	44.7
	Total	374	100.0
Where do you have your breakfast?	At the school cafeteria	76	20.3
	At home	245	65.5
	Patisseries - Cafes	25	6.7
	Other	28	7.5
	Total	374	100.0
Where do you have your lunch?	At the school cafeteria	212	56.7
	At home	88	23.5
	At restaurants around the school	21	5.6
	At locations selling food around the school	5	1.4
	Other	48	12.8
	Total	374	100.0

Chart 4 reveals that 32.9 % students who participated in the research eat 2 meals a day, 32.4 % eat 4 meals a day while 55.3 % stated that they do not skip meals and 28.3 % said that they do. When students were asked if they picked food, 55.3 % answered yes and 47.7 % said they do not. The majority of the time students we look at the table seem to have not missed the meal. Again, according to the table, students choose to eat.

Chart 5: Chart about the Research Group's Consumption Frequency of the Following Food Items

FOOD ITEMS		Everyday		2-3 times a week		Once a week		Once every 15 days		Once a month		I don't consume		Total		
		F	M	F	M	F	M	F	M	F	M	F	M	N	X ²	P
Dairy Products	Milk	59	74	66	60	29	38	7	6	4	3	18	10	374	5.523	0.355
	Buttermilk	46	63	76	80	41	37	8	4	2	4	9	1	374	11.527	0.073
	Yoghurt	67	71	75	80	24	26	7	1	6	2	4	11	374	9.957	0.076
	Butter	34	55	78	61	27	35	8	15	12	10	24	15	374	12.290	0.031
	Cheese	111	113	45	41	12	18	1	5	4	4	10	10	374	3.901	0.564
Meat – Eggs - Legume	Red Meat	16	29	59	66	40	45	34	26	26	16	8	9	374	7.781	0.169
	Sausage – Salami and similar.	20	34	60	71	45	32	16	20	24	15	18	19	374	9.130	0.104
	Giblets	14	13	28	35	10	26	11	16	12	18	108	83	374	13.159	0.022
	Chicken	11	24	55	61	59	57	34	29	11	15	13	5	374	9.574	0.088
	Fish	18	19	37	41	60	55	31	28	23	40	14	8	374	6.658	0.247
	Eggs	41	58	84	71	30	34	7	11	5	10	16	7	374	10.170	0.071
	Chickpea - Beans	34	36	77	91	45	44	17	11	3	4	7	5	374	2.827	0.727
Fruits - Vegetables	Tomato	78	83	79	75	11	22	4	3	8	7	3	1	374	4.967	0.420
	Greens	61	61	80	71	24	28	8	18	6	3	4	10	374	8.094	0.151
	Potatoes	50	72	86	67	37	44	7	6	1	1	2	1	374	7.174	0.208
	Fruits	98	99	55	61	10	11	13	13	5	8	2	0	374	2.880	0.718
	Orange-Lemon	87	86	56	55	31	40	6	7	3	3	0	0	374	1.062	0.900
	Dried fruits	46	49	50	46	35	47	13	15	12	10	27	24	374	2.349	0.799
Bread - Cereals	White bread	122	131	19	23	16	20	8	9	2	1	16	7	374	4.891	0.429
	Whole-wheat bread	31	30	51	41	27	23	17	22	8	20	47	55	374	9.668	0.139
	Rice	31	38	62	72	56	56	20	18	4	2	10	5	374	3.726	0.590
	Bulgur	24	17	56	73	61	62	33	25	3	6	6	8	374	5.664	0.340
	Pasta	41	38	61	79	51	52	19	8	8	12	3	2	374	7.752	0.170
Fat – Candy-	Honey – Jam – Molasses – Marmalade	87	86	68	66	18	23	6	13	4	1	0	2	374	6.856	0.232
Beverages	Tea	110	114	43	49	13	16	8	6	2	4	7	2	374	4.334	0.502
	Coffee	70	57	48	68	28	32	11	21	9	5	17	8	374	12.388	0.030
	Buttermilk	46	63	76	80	41	37	8	4	2	4	9	1	374	11.527	0.073
	Cola and carbonated drinks	31	36	53	71	41	43	18	14	16	12	24	15	374	6.014	0.305
	Fruit juice	52	49	66	86	22	30	22	14	10	9	11	3	374	10.187	0.070
Other	Fast food (pita, hamburger doner kebab, meat pizza)	38	39	40	52	32	47	42	32	27	14	4	7	374	10.551	0.061

Chart 5 reveals information about the participant students' milk and dairy products consumption frequency. Close examination of this chart regarding the students' butter consumption frequency specifies that 23.8 % answered every day, 37.2 % stated they consume butter 2-3 times a week, 16.6 % said once a week, 6.1 % answered once a day, 5.9 % said once a month and 10.4 % stated that they do not consume butter at all. The difference between the female and male students was found to be significant ($p<0.05$). 7.2 % of the participant students answered that they consume giblets every day, 16.8 said they eat 2-3 times a week, 9.6 % said they consume giblets once a week while 7.2 % said once every 15 days, 8.0 % stated once a month and 51.1 % said they did not consume giblets at all. By looking at these answers, it can be said that the difference between male and females were significant ($p<0.05$). Upon review of their coffee consumption frequency in the above chart that exhibits the participant students' consumption frequency of beverage group food items, it is indicated that 34.0 % consumed it every day, 31.0 % answered 2 – 3 times a week, 16.0 % said they drank coffee once a week, 8.6 % stated they did so once a day, 3.7 % said they consumed coffee once a month while 6.7 % stated that they did not consume coffee at all. The difference between male and female students turned out to be significant ($p<0.05$). No other significant difference was found among the answers given for the options in the other group ($p>0.05$). When we look at the table, we can see that the consumption of coffee, offal and butter by students is statistically significant.

Chart 6: Frequency and Percentage Distribution Regarding the Participants' Probiotic Food Consumption Levels

Variables		f	%
Do you consume probiotic foods?	Yes	293	78.3
	No	81	21.7
	Total	374	100,0
What factors affect your consumption of probiotic foods?	Commercials	48	12.8
	Health Issues	51	13.6
	Recommendation	123	32.9
	Others	152	40.6
	Total	374	100.0
Did you benefit from the probiotic foods you consume?	Yes	270	73.3
	No	104	26.7
	Total	374	100.0
If you're not consuming probiotic foods, what is the reason?	Not knowing about	115	30.7
	Not considering natural	66	17.6
	Not needing	92	24.6
	Considering expensive	46	12.3
	Considering tasteless	55	14.7
	Total	374	100.0
Do you believe that probiotic foods have a positive impact on health?	Yes	293	79.1
	No	81	20.9
	Total	374	100.0
Have you ever taken nutrition classes?	Yes	66	17.6
	No	308	82.4
	Total	374	100.0

Chart 6 reveals information regarding the probiotic food consumption statuses of students who have participated in the research. 78.3 % stated that they consumed probiotic foods while 21.7 said that they did not. 32.9 % students who consumed probiotic foods said that recommendation played a major role in their decision to do so. 30.7 % students who

do not consume probiotic foods said they did not know about it. 82.4 % students simply answered that they do not receive nutritional courses.

Chart 7: Chart Regarding the Probiotic Food Consumption Frequency of Students who have participated in the ResearchQUESTIONS	I don't agree at all		I don't agree		Indecisive		I agree		I agree completely		Total		
	F	M	F	M	F	M	F	M	F	M	N	X ²	P
Question 1	15	17	18	17	28	34	98	83	24	40	374	5.809	0.214
Question 2	14	11	14	19	23	23	90	82	42	56	374	3.320	0.506
Question 3	10	12	15	15	20	27	90	95	43	47	374	1.367	0.850
Question 4	7	11	23	19	22	41	85	76	46	44	374	7.380	0.117
Question 5	10	7	22	21	82	77	45	55	27	31	374	2.431	0.657
Question 6	15	13	16	17	29	43	96	86	27	32	374	3.699	0.448
Question 7	47	56	41	43	64	57	20	21	11	14	374	1.453	0.835
Question 8	11	23	26	38	109	88	26	31	11	11	374	8.995	0.061
Question 9	8	10	12	2	54	45	84	72	25	37	374	9.889	0.042
Question 10	26	28	23	33	99	94	28	20	7	16	374	6.676	0.154
Question 11	9	8	20	23	75	84	73	54	6	22	374	12.598	0.013
Question 12	17	17	11	12	60	58	75	66	20	38	374	6.070	0.194
Question 13	13	19	19	25	75	74	64	53	12	19	374	4.435	0.350
Question 14	6	18	17	22	70	77	70	48	20	26	374	11.693	0.020
Question 15	10	18	17	26	47	63	81	51	29	33	374	13.560	0.009
Question 16	11	17	21	23	74	80	56	45	21	26	374	3.171	0.530
Question 17	12	20	17	25	85	78	52	40	17	28	374	7.911	0.095
Question 18	24	21	27	29	70	90	45	32	17	19	374	4.908	0.297
Question 19	12	12	26	35	83	70	42	47	20	27	374	3.586	0.465
Question 20	15	22	28	26	53	62	59	51	28	30	374	2.584	0.630

(Questions: 1 Probiotic foods are good. It can feel. 2 Probiotic foods health. It contains useful items. 3 Probiotic foods immunity System strengthening. It helps. 4 Yoghurt digestion system. Contributing to the regulation. 5 Probiotic foods are high. Contains a large number of microorganisms. 6. Probiotic food diseases. They help prevent it. 7 Probiotic nutrients. Catching of cancer types. They increase risk. 8 In probiotic foods Microorganisms always live It remains. 9 Treatment of probiotic foods Effect. 10 Probiotic diets lead to diarrhea It can open .11 Probiotic foods cancer Help prevent. 12 Probiotic foods disease Constructive microorganisms To prevent development It helps13 Probiotic nutrients Against antibiotics are resistant. 14 Probiotic nutrients to the eye Are positively contributing. 15 Probiotic nutrients for skin There is a positive effect on your health. 16 Probiotic foods do not lose weight It helpsProbiotic foods appetite The opener. 18 Probiotic nutrients Obtained from fermentation. 19 Probiotic foods are vitamins and Need for minerals they reduce. 20 Probiotic foods are usually They are produced with natural techniques).

Chart 7 reveals information regarding the probiotic food consumption frequency of students who have participated in the research. This chart shows the answers given by students. By considering the answers given, it is safe to say that the answer given to question 9 whether “probiotic foods have a medicinal impact” was found to be significant ($p < 0.05$). Question 11 about whether “probiotic foods help prevent cancer” was also found to be significant ($p < 0.05$). The answer to question 14 whether “probiotic foods have a positive impact on eye health” was found to be significant as well ($p < 0.05$) while none of the answers given to the other questions was significant ($p > 0.05$).

5. DISCUSSION AND CONCLUSION

Probiotics are living microbial nutrient compositions with a positive impact on human health. By changing the specific goal functions in the intestine and the immune system, probiotics feature beneficial physical qualities in addition to the nutritional value (10). The use of probiotics has recently been proven to play a major role in all ages including infancy and toddler hood as well as a healthy nutrition and athletes' diet.

The intestines' microbiota is closely related with nutrition. Although there have not been that many studies conducted on especially using probiotics in the treatment of obesity and its complications, it has been observed that the use of probiotics positively affect the protein expressions related with the energy that it uses to change the flora and it prevents any increase in the severity (11).

The study conducted by (Yabancı ve Şimşek,2007) concluded that 54.6 % of students continuing their university education did not know about probiotics and 64.2 % do not consume probiotic foods (12). In addition to this, our study revealed that 78.3 % students continuing their high school education consumed probiotic foods while 21,7 said that they do not consume probiotics. Containing high amounts calcium, milk and dairy products are major sources of calcium in childhood and teenage years and may prevent bone diseases that can occur later on (13). 43.5 % of students participating in Yabancı and Şimşek's (13) study who stated that they did not consume probiotics foods said they didn't know about it, 19.5 % said they don't consider it natural, 149 % said they don't need it while 12,9 % said they consider it to be expensive and % 8.5 said that they find it tasteless. In response to this, 30.7 % of students participating in our research who stated that they did not consume probiotics foods said they didn't know about it, 17.6 % said they don't consider it natural, 24 % said they don't need it while 12.9 % said they consider it to be expensive and % 14.7 said that they find it tasteless. Additionally, 82.4 % of our participant students indicated that they do not receive any nutritional classes and 17.6 said that they did

. Probiotics have been reported to improve the immunological defense of the condom and the resistance against microbial pathogens, thereby improving specific physiological functions in the gastrointestinal tract. The best results in probiotics have been obtained in the treatment of lactose malabsorption and acute diarrhea. Probiotic applications have shown that lactose is better digested, rotavirus infections, antibiotics and chemotherapy-induced diarrhea are reduced, frequent and repetitive. By changing endogenous microflora properties, it has been reported that they are effective in improving food allergies and some immunological disorders in atopic eczema, and are effective in controlling inflammatory diseases such as ulcerative colitis and Crohn's disease. Saavedra reported the necessity of adding probiotics to the risk groups such as prematurity, frequent travelers, enteral feeding patients, and antibiotic fields, under the assumption of assessment at 2001. However, in immunocompromised patients, emphasis has been placed on being careful as it may cause sepsis in premature infants. Moreover, it has been reported that the potential risks in preventive medicine in human health should not be neglected (14).

In conclusion, it seems it is an unavoidable fact that further studies need to be carried out in order to encourage individuals to promote the consumption of probiotic foods and inform them about the many known positive effects on our health. Therefore, families, teachers and children need to be provided the required education about children's dietary habits in their childhood and adolescence. Consequently, the promotion of food, proper and balanced diet should be taught as courses in the curriculum in certain grades of schools. On the other hand, we defend the opinion that education must begin in childhood years for a healthy society eating a well-balanced diet. Additionally, we also believe that probiotic foods which are rich in vitamins, proteins and minerals may be effective in preventing any bone diseases that may surface in the years ahead.

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A Holistic Approach to Teaching and Learning a Theoretical Content in Physical Education and Sports

Liliana Budevici-Puiu ^a, Anatolie Budevici-Puiu ^b

^{a, b} State University of Physical Education and Sport, Chisinau, Republic of Moldova

Abstract

A holistic view of the teaching and learning of the theoretical lesson in the field of physical education and sports involves the elaboration and implementation of the integrated curriculum in the didactic process. Integration has several levels that should be tackled: *mono-disciplinarity*, focused on independent study subjects; *multi-disciplinarity* with reference to achieving an effective "correlation" of the efforts and potentialities of the various study disciplines in order to provide a more complete view over the researched subject; *inter-disciplinarity*, which involves an intersection of different disciplinary areas, which can lead to new study subjects. The essential objectives of curricular integration, grouped in two directions: linking different segments of study programmes and linking the learning process to concrete life situations can contribute to the acquisition and development of the professional competencies of an efficient specialist in the field.

Keywords: holistic model, teaching, learning, theoretical lesson, integrated curriculum

Introduction

Didactics studies the educational process in a formal and institutionalized way. Thus, by inclusion of formal and informal elements, didactics represents *the discipline, science and the art of teaching*. Now, didactics is known as a part of pedagogy, which deals with the organization of the teaching process. At the same time, didactics has *a research dimension* (investigating the new elements introduced by different social sciences and learning theories), *a prescriptive and normative dimension* (through suggestions offered to teachers) and *an innovative dimension* (through incorporating of significant elements of sciences and human practice, which favours and optimizes teaching) [4,7].

Nowadays, the education based on competencies presupposes a number of new dimensions, such as: the accentuation of monitoring the way the objectives assumed at the beginning of the study year are reached, giving a new significance to the teaching process, certification of teaching results, etc. [3,5].

From pedagogy through objectives, passing through the pedagogy of "full learning", it came to the pedagogy (didactics) centered on competencies [5,9].

In higher education studies of physical education and sports, the competencies are approached in terms of three dimensions:

- a dimension originating in the strict scientific sense of the competencies;
- a dimension resulting from the key competencies offered at the European level;
- a dimension of concretization of described competencies in the university curriculum on the study discipline (general and specific competencies).