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ORIGINAL ARTICLE

EATING BEHAVIOURS, FREQUENCY OF CONSUMPTION OF SELECTED FOOD PRODUCTS, AND SELECTED ELEMENTS OF LIFESTYLE AMONG YOUNG DANCERS

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ABSTRACT

Background. Proper nutrition and balanced physical activity have a beneficial effect on the growth and development of young athletes, supporting their endurance and health, which is particularly important in the period of adolescence.

Objective. Aim of this study was to assess eating behaviours, frequency of consumption of some food products and selected elements of lifestyle among young dancers, as well as to compare the age of the dancers and the assessed behavior.

Material and methods. The study included 198 dancers aged 10-15 years. An originally developed questionnaire was used as a research tool.

Results. The largest group of dancers (43%) spent on training up to 2 hours per week. The recommended 4-5 meals/day were consumed by 61.1% of dancers, with 87.4% of respondents having breakfast on a daily basis. The recommendations on the daily intake of several portions of fruit and vegetables were followed by 49% and 36.9% of dancers, respectively. It is observed, that the consumption rates of sweets increased, while the consumption rates of fruit decreased with dancers' age. The consumption rates of packed lunch and afternoon snack increased, whereas the consumption rates of dinner decreased with an increasing number of hours spent training.

Conclusions. Eating behaviours and the frequency of consumption of food products by young dancers can be described as varied. Their diet is characterised by regular consumption of meals and a correct frequency of consumption of most food products, including high intake of fruit and vegetables, yoghurt and kefir, as well as low consumption of fast food products. The selected elements of dancers' lifestyle, such as sleep time and physical activity, are mostly correct.

Key words: *lifestyle, nutrition, dancers*

STRESZCZENIE

Wstęp. Prawidłowe odżywianie i zrównoważona aktywność fizyczna wpływają korzystnie na wzrost i rozwój młodych sportowców, wspierając ich wytrzymałość i kondycję zdrowotną, co jest szczególnie istotne w okresie dojrzewania.

Cel. Celem badań była ocena zachowań żywieniowych, częstości spożycia wybranych produktów spożywczych oraz wybranych elementów stylu życia młodych tancerzy, a także porównanie zależności pomiędzy wiekiem tancerzy a ocenianymi zachowaniami.

Materiał i metody. Badania przeprowadzono wśród 198 tancerzy w wieku 10-15 lat. Narzędziem badawczym był autorski kwestionariusz ankiety.

Wyniki. Najliczniejsza grupa tancerzy (43%) przeznaczała na trening do 2 godzin tygodniowo. Zalecane 4-5 posiłków dziennie spożywało 61,1% tancerzy, śniadanie spożywało codziennie 87,4% z nich. Zalecenia kilkukrotnego spożywania owoców i warzyw a ciągu dnia przestrzega odpowiednio 49% i 36,9% badanych tancerzy. Obserwuje się, że wraz wiekiem tancerzy wzrasta częstość spożycia słodyczy, natomiast maleje częstość spożycia owoców oraz, że wraz z większą ilością godzin spędzanych przez tancerzy na treningu wzrasta częstość spożycia II śniadania i podwieczorku, natomiast maleje częstość spożycia obiadu.

Wnioski. Zachowania żywieniowe oraz częstość spożycia produktów spożywczych przez młodych tancerzy można ocenić jako zróżnicowane. Ich sposób żywienia charakteryzuje się regularnością spożywania poszczególnych posiłków oraz prawidłową częstością spożywania większości produktów spożywczych, w tym wysokim spożyciem owoców i warzyw, jogurtów, kefirów oraz niskim spożyciem produktów typu fast food. Wybrane elementy stylu życia, takie jak czas przeznaczony na sen oraz uprawianie aktywności fizycznej przez młodych tancerzy w większości są właściwe.

Słowa kluczowe: *styl życia, odżywianie, tancerze*

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INTRODUCTION

Providing the right amount of food products that contain the nutrients the body needs, is an important part of the lifestyle of physically active people [1]. Despite the widely available knowledge about proper nutrition, some researchers point to improper eating behavior, which they often equate with a low level of knowledge of the studied group or the lack of reliable nutritional counseling [26].

Proper nutrition and balanced physical activity have a beneficial effect on the body, supporting endurance and health, which are particularly important in the period of adolescence [8, 38]. According to the World Health Organization, children aged 10-15 years need at least 60 minutes of daily physical activity of any form to maintain proper body shape, as well as physical and mental efficiency [22, 34]. Dancing is one of the forms of physical activity, which combines the awareness of body movement with musical sensitivity. As in other activities, also in this case the effort put into training is associated with increased energy expenditure, and thus the need for properly balanced diet. Having 5 meals daily at fixed times of day in between the training sessions, what is recommended by the Food and Nutrition Institute, is beneficial for the absorption of nutrients necessary for body functions [11]. The presence of various groups of products in the diet allows for optimal supply of these ingredients. According to the recommendations of the Pyramid of Healthy Nutrition and Lifestyle for Children and Youth, daily intake of vegetables and fruits, which contain antioxidant polifenoles and prebiotic fibre, is particularly important [27, 37]. In addition to fruit and vegetables, grain products, which also provide essential ingredients for blood formation (iron and folic acid), should be an important source of fibre [19]. Along with prebiotics, a balanced diet should provide probiotic bacteria, which are found, among other things, in yogurt and kefir, which improve digestion and show hypocholesterolemic effects [28]. The seeds of legumes, which are called superfoods due to their high content of vegetable protein, also play an important role in nutrition [31]. Animal meat, fish and eggs should be a source of wholesome protein in the diet [12]. Fish provide essential unsaturated omega-3 fatty acids, which have anti-inflammatory activity when consumed at a recommended daily amount of 250 mg, thus preventing cancer and cardiovascular diseases [29].

A properly composed diet excludes simple sugars and trans fats. Consumption of simple sugars disrupts satiety, which may result in compulsive eating and overweight, which in turn leads to diet-related diseases. Therefore, a diet with limited content of sweets and processed products rich in simple sugars is recommended [9]. Trans fats found in sweets and fast food products have destructive effects on blood vessel endothelial functions, cause lipid disorders, thereby contributing to the development of cardiovascular diseases [10]. A diet rich in products with high nutritional value has positive effects on the growth and development of young athletes, while the consumption of highly processed products may have negative effects on the body, leading to diet-related diseases [14, 16].

Young, active people are particularly vulnerable to the consequences of improper nutrition. Monitoring their lifestyle, including eating behavior monitoring, enables early detection of abnormalities [18].

The aim of this study was to assess eating behaviours, the frequency of consumption of selected food products and selected elements of lifestyle among young dancers, as well as to compare the age of the dancers and the assessed behavior.

MATERIALS AND METHODS

The study was conducted in winter 2020 among 198 attending classes at dance clubs and ballet schools, living in Śląskie, Łódzkie and Świętokrzyskie provinces. There were 194 girls (98%) and 4 boys (2%), aged between 10 and 15 years, in the study group. Consent to participate in the study was obtained from the parents.

An originally designed questionnaire including demographics and 17 questions on eating behaviours and physical activity was used as a research tool. The questionnaire was anonymous. The obtained results were collected and analysed using Microsoft Excel 2010 spreadsheet and Statistica 13 software. The results were presented for the total group and separately for the age groups: 10-12 years and 13-15 years. The gamma coefficient was used to assess the relationships between consumption rates for selected products, meals and age, as well as between consumption rates for selected meals and the number of training hours per week. A p-value (p) <0.05 was considered statistically significant for all analyses.

RESULTS

The selected lifestyle elements are presented in Tables 1-3.

The largest group of dancers (43%) spent on training up to 2 hours per week, as indicated mainly by 10-12-year-olds. Older dancers usually spend 2-3 hours training (Table 1). Swimming was the most common additional physical activity practised by the dancers, and it was more common among 10-12-year-olds than 13-15-year-olds (22.7% vs. 19%). Only 16.7% of dancers engaged in no additional physical activity (Table 2). A total of 61% of dancers, including more 10-12-year-olds than 13-15-year-olds (71% vs. 44%)

get the recommended number of sleep hours per day (Table 3).

Selected eating behaviours are shown in Tables 4-10.

The recommended 4-5 meals/day were consumed by 61.1% of dancers, including 69.6% of older and 55.5% of younger respondents (Table 4). Fruit and vegetables were the most frequently consumed snacks among dancers (63.6%), and were more common among 10-12-year-olds (70.6%) than 13-15-year-olds (53.2%) (Table 5).

Table 1. Time spent on training per week

Number of training hours/age	10-12 age		13-15 age		Total	
	n=119	%	n=79	%	n=198	%
Up to 2 hours	61	51.3	24	30.4	85	43
2-3 hours	31	26	28	35.4	59	30
4-5 hours	15	12.6	15	19	30	15
Over 5 hours	12	10.1	12	15.2	24	12

Table 2. Additional physical activity

Additional activity/age	10-12 age		13-15 age		Total	
	n=119	%	n=79	%	n=198	%
Running	16	13.4	11	14	27	13.6
Swimming	27	22.7	15	19	42	21.2
Cycling	9	7.6	10	13	19	9.6
Team sport	5	4.2	9	11	14	7.1
Gymnastics	24	20.2	10	13	34	17.2
Others, e.g. horse riding, acrobatics	21	17.6	8	10	29	14.6
No other physical activities than dancing	17	14.3	16	20	33	16.7

Table 3. Number of hours of sleep per day

Number of hours of sleep/age	10-12 age		13-15 age		Total	
	n=119	%	n=79	%	n=198	%
Less than 8 hours	32	27	44	56	76	38
8-11 hours	85	71	35	44	120	61
Over 11 hours	2	2	0	0	2	1

Table 4. Number of meals

Number of meals/age	10-12 age		13-15 age		Total	
	n=119	%	n=79	%	n=198	%
2 or less	1	0.8	3	3.8	4	2
3	44	37	16	20.3	60	30.3
4-5	66	55.5	55	69.6	121	61.1
More than 5	8	6.7	5	6.3	13	6.6

Table 5. The most frequently consumed snacks

Most frequently eaten snacks/age	10-12 age		13-15 age		Total	
	n=119	%	n=79	%	n=198	**%**
Vegetables or fruit	84	70.6	42	53.2	126	63.6
Sweets	10	8.4	24	30.4	34	17.2
Salty snacks	12	10.1	5	6.3	17	8.6
Others, e.g. nuts, yoghurts	7	5.9	7	8.8	14	7.1
I do not eat snacks in between meals	6	5	1	1.3	7	3.5

Table 6. Frequency of meals

Frequency of meals		10-12 age		13-15 age		Total		Frequency of meals/age	
		n=119	%	n=79	%	n=198	%	gamma	p
I Breakfast	Every day	103	86.5	70	88.6	173	87.4	0.06	0.59
	Several times a week	14	11.8	8	10.1	22	11.1		
	Several times a month	0	0	0	0	0	0		
	Not consume	2	1.7	1	1.3	3	1.5		
II Breakfast	Every day	54	45.4	40	50.6	94	47.5	0.16	**0.02**
	Several times a week	45	37.8	30	38	75	37.9		
	Several times a month	2	1.7	3	3.8	5	2.5		
	Not consume	18	15.1	6	7.6	24	12.1		
Dinner	Every day	114	95.8	70	88.6	184	93	-0.24	0.08
	Several times a week	4	3.4	8	10.1	12	6		
	Several times a month	0	0	0	0	0	0		
	Not consume	1	0.8	1	1.3	2	1		
Afternoon snack	Every day	17	14.3	15	19	32	16.1	0.21	**0.00**
	Several times a week	51	42.9	34	43	85	43		
	Several times a month	15	12.6	12	15.2	27	13.6		
	Not consume	36	30.2	18	22.8	54	27.3		
Supper	Every day	101	84.9	58	73.4	159	80.3	0.05	0.47
	Several times a week	14	11.7	17	21.6	31	15.7		
	Several times a month	2	1.7	2	2.5	4	2		
	Not consume	2	1.7	2	2.5	4	2		

Breakfast is consumed on a daily basis by 87.4% of respondents (including 86.5% of younger and 88.6% of older dancers), whereas supper by 80.3% (84.9% and 73.4%, respectively) of respondents. Daily consumption of dinner was declared by 93% of respondents, including 95.8% of younger and 88.6% of older dancers. Packed lunch and afternoon snack are not consumed by 12.1% and 27.3% of respondents, respectively, as indicated by more younger than older respondents in both cases. The frequency of eating a second breakfast and afternoon snack increases with age. (Table 6).

The recommendations on the daily intake of several portions of fruit and vegetables were followed by 49% and 36.9% of dancers, respectively, as indicated by more younger respondents in both cases. The frequency of fruit consumption decreases with age. Also, 36.9% of dancers, mainly older respondents, consumed vegetables once a day. Legumes are most often consumed at a frequency of several times a month (46.5%), as indicated by a higher number of older (57%) than younger (39.5%) dancers.

Bread was consumed on a daily basis by 92.4% of respondents, including 91.6% of younger and 93.6% of older respondents, whereas rice and groats are consumed several Times a week by 57.6% of respondents, as indicated by a higher number of younger dancers (59.7% vs. 54.4%).

Fermented milk products, such as yoghurts and kefirs, are consumed several times a week by most respondents, as indicated by 43%, including 42% of younger and 44.3% of older dancers.

Fish is eaten several times a month by 55% of respondents, including 52.1% of younger and 59.5% of older dancers. This was the most frequently indicated answer among all dancers. Meat and meat products, such as lunch meats, on the other hand, are usually consumed several times a week, as declared by 44.9% of respondents (50.6% of older and 41.2% of younger respondents) (Table 7).

The majority of respondents declared that they consume sweets several times weekly (35.9%), with a similar percentage in both groups (36.1% of younger and 35.5% of older dancers). Everyday consumption of sweets was declared by 35.9% of respondents, including twice daily by 18.7% of dancers, as indicated mainly by older respondents in both cases. The frequency of consumption of sweets increases with age.

Fast-food products are most often consumed several times a month, as declared by 66.7% of respondents, with a similar percentage of younger and older dancers (66.4% and 67.1%, respectively) (Table 8).

Tea is most often consumed several times a day by 51.5% of respondents, including 54.6% of younger and 46.8% of older dancers. Milk and milk beverages are mainly consumed several times a week (40% of

Table 7. The frequency of consumption of selected products

Frequency of consumption		10-12 age		13-15 age		Total		Frequency of consumption/ age	
		n=119	%	n=79	%	n=198	**%**	gamma	p
Fruits	Several times a day	61	51.3	36	45.6	97	49	-0.16	**0.01**
	Once a day	41	34.4	26	32.9	67	34		
	Several times a week	15	12.6	14	17.7	29	14.5		
	Several times a month	2	1.7	2	2.5	4	2		
	Not consume	0	0	1	1.3	1	0.5		
Vegetables	Several times a day	50	42	23	29.1	73	36.9	-0.12	0.06
	Once a day	40	33.6	33	41.8	73	36.9		
	Several times a week	24	20.2	20	25.3	44	22.2		
	Several times a month	4	3.4	2	2.5	6	3		
	Not consume	1	0.8	1	1.3	2	1		
Legumes	Several times a day	4	3.4	0	0	4	2	-0.1	0.12
	Once a day	9	7.5	4	5.1	13	6.6		
	Several times a week	39	32.8	20	25.3	59	29.8		
	Several times a month	47	39.5	45	57	92	46.5		
	Not consume	20	16.8	10	12.6	30	15.1		
Bread	Several times a day	70	58.8	43	54.4	113	57.1	-0.03	0.70
	Once a day	39	32.8	31	39.2	70	35.3		
	Several times a week	8	6.8	4	5.1	12	6.1		
	Several times a month	1	0.8	1	1.3	2	1		
	Not consume	1	0.8	0	0	1	0.5		
Rice /Groats	Several times a day	3	2.5	0	0	3	1.5	-0.13	0.06
	Once a day	8	6.7	6	7.6	14	7.1		
	Several times a week	71	59.7	43	54.4	114	57.6		
	Several times a month	34	28.6	27	34.2	61	30.8		
	Not consume	3	2.5	3	3.8	6	3		
Yogurts, kefirs	Several times a day	17	14.3	6	7.6	23	11.6	-0.06	0.32
	Once a day	26	21.8	20	25.3	46	23.2		
	Several times a week	50	42	35	44.3	85	43		
	Several times a month	19	16	17	21.5	36	18.2		
	Not consume	7	5.9	1	1.3	8	4		
Fish	Several times a day	1	0.8	0	0	1	0.5	0.00	0.98
	Once a day	0	0	1	1.3	1	0.5		
	Several times a week	39	32.8	15	19	54	27.3		
	Several times a month	62	52.1	47	59.5	109	55		
	Not consume	17	14.3	16	20.2	33	16.7		
Meat/ Meat products	Several times a day	21	17.6	9	11.4	30	15.2	0.07	0.24
	Once a day	40	33.6	18	22.8	58	29.3		
	Several times a week	49	41.2	40	50.6	89	44.9		
	Several times a month	6	5.1	8	10.1	14	7.1		
	Not consume	3	2.5	4	5.1	7	3.5		

Table 8. Frequency of consumption of sweets and fast-food products

Frequency of consumption		10-12 age		13-15 age		Total		Frequency of consumption/age	
		n=119	%	n=79	%	n=198	**%**	gamma	p
Sweets	Several times a day	20	16.8	17	21.5	37	18.7	0.2	0.00
	Once a day	17	14.3	17	21.5	34	17.2		
	Several times a week	43	36.1	28	35.5	71	35.9		
	Several times a month	34	28.6	15	19	49	24.7		
	Not consume	5	4.2	2	2.5	7	3.5		
Fast - food	Several times a day	1	0.8	0	0	1	0.5	0.12	0.12
	Once a day	2	1.7	2	2.5	4	2		
	Several times a week	7	5.9	6	7.6	13	6.6		
	Several times a month	79	66.4	53	67.1	132	66.7		
	Not consume	30	25.2	18	22.8	48	24.2		

Table 9. Frequency of consumption of beverages

Frequency of consumption		10-12 age		13-15 age		Total		Frequency of consumption/age	
		n=119	%	n=79	%	n=198	**%**	gamma	p
Tea	Several times a day	65	54.6	37	46.8	102	51.5	-0.13	0.05
	Once a day	41	34.5	25	31.7	66	33.3		
	Several times a week	12	10.1	13	16.5	25	12.6		
	Several times a month	1	0.8	2	2.5	3	1.5		
	Not consume	0	0	2	2.5	2	1.1		
Milk and/or milk beverages	Several times a day	12	10.1	8	10.1	20	10.1	0.02	0.76
	Once a day	33	27.7	22	27.8	55	27.8		
	Several times a week	53	44.5	26	33	79	40		
	Several times a month	14	11.8	17	21.5	31	15.6		
	Not consume	7	5.9	6	7.6	13	6.5		
Carbonate drinks	Several times a day	3	2.5	1	1.3	4	2	0.04	0.47
	Once a day	3	2.5	4	5.1	7	3.5		
	Several times a week	19	16	11	13.9	30	15.2		
	Several times a month	57	47.9	42	53.2	99	50		
	Not consume	37	31.1	21	26.5	58	29.3		
Freshly squeezed juices	Several times a day	13	11	2	2.5	15	7.6	-0.10	0.10
	Once a day	25	21	13	16.5	38	19.2		
	Several times a week	45	37.8	28	35.4	73	36.9		
	Several times a month	30	25.2	30	38	60	30.3		
	Not consume	6	5	6	7.6	12	6		
Carton or bottle juices	Several times a day	10	8.4	7	8.9	17	8.6	-0.05	0.42
	Once a day	13	10.9	11	14	24	12.1		
	Several times a week	33	27.7	24	30.3	57	28.8		
	Several times a month	54	45.4	27	34.2	81	40.9		
	Not consume	9	7.6	10	12.6	19	9.6		

Energy drinks	Several times a day	2	1.7	0	0	2	1.1	0.11	0.29
	Once a day	0	0	1	1.3	1	0.5		
	Several times a week	1	0.8	2	2.5	3	1.5		
	Several times a month	5	4.2	16	20.2	21	10.6		
	Not consume	111	93.3	60	76	171	86.3		
Water	Several times a day	109	91.6	76	96.2	185	93.4	0.11	0.10
	Once a day	5	4.2	1	1.3	6	3.1		
	Several times a week	5	4.2	2	2.5	7	3.5		
	Several times a month	0	0	0	0	0	0		
	Not consume	0	0	0	0	0	0		

respondents), as declared by 44.5% of younger and 33% of older respondents. Carbonated drinks, which are not recommended in the diet, are consumed by most adolescents several times a month (50%), as indicated by fewer younger dancers (47.9% vs. 53.2%).

The majority of respondents (36.9%, including 37.8% of younger and 35.4% of older dancers) consume freshly squeezed juices several times a week. Carton or bottle juices are usually consumed several times a month, as declared by 40.9% of respondents (45.4% of younger and 34.2% of older dancers).

Energy drinks, which are generally not recommended, are not consumed by 86.3% of dancers, as indicated by a higher number of younger (93.3%) than older (76%) respondents. The recommended daily consumption of water (several times a day) was declared by 93.4% of respondents (91.6% of younger and 96.2% of older dancers). There was no correlation between the frequency of consumption of selected drinks and the age of the dancers.(Table 9).

Table 10. Relationship between the number of training hours per week and consumption of meals

Name of meal	gamma	p
I breakfast	0.209	0.095
II breakfast	0.177	**0.016**
Dinner	-0.354	**0.016**
Afternoon snack	0.251	**0.000**
Supper	0.097	0.283

The frequency of consuming packed breakfast and afternoon snack increased and the frequency of consuming dinner decreased with an increasing number of training hours.

DISCUSSION

The analysis of our results showed that 61.1% of dancers have 4-5 meals a day, as recommended by the Food and Nutrition Institute [37]. Similar results were obtained by *Bielec* and *Goździejewska* [2], with optimal number of meals declared by 68.5% of young swimmers. Different findings were presented by *Leonkiewicz* et al., who assessed the number and timing of meals in a group of adolescent athletes, with regular consumption of 4-5 meals daily declared by only 20% of respondents [20] .*Całyniuk* et al., who assessed health-related and eating behaviours among students attending sport classes, showed that most respondents had more than 5 meals daily (60.2%) as compared to only 6.6% of adolescents in our study [4].

Our study showed that 96.5% of dancers have snacks in between meals, with 63.6% of respondents opting for fruit and vegetables. *Bielec* and *Goździejewska* obtained similar results for vegetables and fruits as the most preferred snacks [2]. By contrast, *Całyniuk* et al. found that only 29.8% of respondents declared consumption of fruit, and that sweets were the most popular snack (68.8%) [4].

In our study, the frequency of consuming different meals varied. Breakfast and supper were consumed by 87.4% and 80.3% of dancers, respectively. Similar findings for breakfast and different findings for supper, which was consumed by only 54% of respondents, were reported by *Bielec* and *Goździejewska* [2]. Different frequency of breakfast consumption was observed by *Manore* et al [24], according to which 55.7% of the participating footballers declared their daily consumption. On the other hand, in the study by *Lim* et al. [21] showing the lifestyle of Korean teenage women, 31.1% of the examined girls did not eat their first breakfast.

Since vegetables and fruits should form the basis of a balanced diet, their daily consumption is recommended. These products provide many valuable ingredients such as vitamins, antioxidants, minerals and fibre [17]. They significantly reduce the incidence of cardiovascular diseases and some types of cancer [35]. For these reasons, it is recommended that fruit and vegetables account for at least half of the food intake, with the proportion of ¾ of vegetables and ¼ of fruit [37].

Our study showed that 49% of dancers consumed fruit several times daily, with higher consumption rates among 10-12 year olds (51.3%) than 13-15 year olds (45.6%). Slightly higher frequency of fruit consumption was reported by *Bielec* and *Goździejwska*, with 58.6%

of respondents declaring consumption of fruit several times daily [2]. It may be seen from our study that 36.9% of dancers follow the recommendations to have several portions of vegetables per day. It should be also noted that consumption of vegetables several times daily was more common among younger than older respondents (42% vs. 29.1%). Similar findings were presented by *Leonkiewicz* et al. with 42.6% of students of the Athletic Championship School in Krakow declaring consumption of vegetables several times daily. Unfortunately, the study also identified a large group of children (26.2%) who consumed vegetables less often than once daily [20]. A higher percentage (74%) of people not consuming the recommended amount of vegetables was observed in their study by *Coutinho* et al [5]. Legumes are not an important part of the diet of the study group of dancers. Most of our respondents (46.5%) consume these products several times a month. Similar findings were reported by *Bielec* and *Goździejewska*, with 56.2% of respondents declaring legume consumption less often than several times a week [2]. Different findings were presented by *Coutinho* et al. [5] in which 95% of athletes consumed legumes 5 or more times a week.

Bread is consumed several times a day by 57.1% of respondents. Similar results were obtained by *Bielec* and *Goździejwska*, with 50% of respondents consuming bread 2-3 times per day [2].

Yoghurts and kefirs are products with high nutritional values, providing the body with calcium, vitamin D and A, as well as B vitamins, which is particularly important for active individuals [3]. Minerals contained in yoghurt, such as magnesium, calcium, phosphorus and potassium, can have a significant impact on bones [36]. Our study showed that 43% of dancers consume the above products several times a week, and that only 23.2% of respondents consume them on a daily basis. Similar observations were made by *Całyniuk* et al., with yoghurts and kefirs consumed a few times a week and every day by 39.8% and 40.9% of respondents [4].

Our study revealed insufficient intake of fish, which should be eaten 1-2 times a week [37]. Fish are an excellent source of not only easily digestible and absorbable protein, but also fats, vitamins, such as A, D and group B vitamins, and minerals, including Ca, P, Fe or Mg. Additionally, fish are an excellent source of iodine. They also contain *omega*-3 polyunsaturated fatty acids needed for the proper functioning of the brain, nervous system and eyesight, as well as for preventing heart diseases [13, 25]. Our study showed that 55% of adolescents consume fish several times a month. *Bielec* and *Goździejewska* also observed poor consumption of fish, with 52.1% of respondents consuming fish less often than 2-3 times a week [2]. *Całyniuk* et al. showed that more than half of respondents consume fish 1-2 times a week, and 32.3% of respondents eat fish occasionally [4].

Meat and lunch meats are another important group of products that should be included in the daily menu. These products are most often consumed several times a week by 44.9% of our adolescent respondents. *Całyniuk* et al. also showed that 52.7% of adolescents consume lunch meats several times weekly, including 37.6% of respondents consuming poultry 3-4 times a week [4].

Sweets are characterised by a low nutritional value, but a high content of sugars, fats, dyes and flavours [23]. Furthermore, eating sweets often leads to weight gain, as well as increased blood glucose and triglycerides [15]. The frequency of consumption of sweets was alarming in our study as 96.5% of all dancers declared consumption of these products, including 35.9% of respondents eating sweets several times a week. Similar findings were reported by *Dolipska* et al. [7], who assessed eating behaviours among primary school students. As demonstrated by the authors, consumption of sweets several times a week was declared by 32.64% out of 573 girls and 30.62% out of 565 boys. Slightly lower frequency of consuming sweets was reported by *Bielec* and *Goździejewska* [2].

The questionnaire also asked about the frequency of consuming fast-foods. We found that 66.7% of dancers consume these products several times a month. Similar results were obtained by *Tawfik* et al. [33], who assessed eating patterns and supplement use among Egyptian athletes. According to the authors of the study, 57.8% of the participants declared consumption of fast food once a week [33]. By contrast, *Całyniuk* et al. [4] found that 64.5% of children and adolescents consumed fast-foods occasionally, and *Szczepańska* et al. [32] showed that 52.96% out of 304 students also consumed these products on occasional basis. Eating fast foods leads to gastrointestinal disorders through insufficient supply of dietary fibre, which has a negative impact on health [30]. Furthermore, deep-fried foods are often a source of trans fats. They have a negative impact on health, particularly on an increased risk of cardiovascular diseases that lead to metabolic syndrome [6].

Individuals with increased physical activity require reliable nutrition education due to their increased demand for nutrients, as confirmed by the above cited studies. It is recommended that this education is also addressed to their closest environment to increase their nutritional awareness [2, 4, 17]. An important aspect seems to be conducting further research in order to identify the differences and the resulting nutritional needs in individual groups, taking into account: dance style, training intensity and exercise season.

CONCLUSIONS

Eating behaviours and the frequency of consumption of food products by young dancers can be described as varied. Their diet is characterised by regular consumption of meals and a correct frequency of consumption of most food products, including high intake of fruit and vegetables, yoghurt and kefir, as well as low consumption of fast food products.

The frequency of consumption of second breakfast, afternoon snack, and sweets significantly increases with age, while the frequency of fruit consumption significantly decreases.

The selected elements of dancers' lifestyle, such as sleep time and physical activity, are mostly correct.

Conflict of interest

The authors declare no conflict of interest.

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