



Assessment of consumption of light, “lekki” and fit products among students of dietetics

Ocena spożycia wyrobów typu light, lekki oraz fit wśród studentów kierunku dietetyka

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ABSTRACT

INTRODUCTION: Light, “lekki” and fit products appear increasingly more often on the Polish market, and food producers, although they are obliged to include information on the labels of products with a reduced energy value and appropriate markings, do not always do it correctly. The lack of strict legal regulations on the naming of low-energy products gives food producers the opportunity to market products whose name may mislead consumers in terms of their nutritional and health values. The aim of this study is to assess the consumption of light, “lekki” and fit products among students of dietetics.

MATERIAL AND METHODS: An anonymous survey was conducted using an original questionnaire, in which 117 students of dietetics took part. The results were compiled using an Excel spreadsheet.

RESULTS: From the analysis of the results, people with normal body weight most often consume light products several times a month (34.9%), with excessive body weight 2–3 times a week (41.2%), and those underweight less than once a month (28.6%).

CONCLUSIONS: Regardless of their degree and place of residence, students of dietetics most often consume light, “lekki” and fit products several times a month. People with a normal body weight, as well as those who pay attention and control their body weight, consume these products several times a month.

KEYWORDS

light, “lekki”, fit, consumption assessment, students

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STRESZCZENIE

WSTĘP: Produkty typu light, lekki oraz fit pojawiają się coraz częściej na polskim rynku, a producenci żywności, chociaż mają obowiązek umieszczania na etykietach produktów informacji o obniżonej wartości energetycznej i odpowiednich oznaczeń, nie zawsze robią to prawidłowo. Brak ścisłych regulacji prawnych w zakresie nazewnictwa produktów niskoenergetycznych daje producentom żywności możliwość wprowadzania na rynek produktów, których nazwa może wprowadzić konsumentów w błąd w zakresie ich wartości odżywczych i zdrowotnych. Celem niniejszej pracy jest ocena spożycia wyrobów typu light, lekki oraz fit wśród studentów kierunku dietetyka.

MATERIAŁ I METODY: Wykorzystując autorski kwestionariusz ankiety, przeprowadzono anonimowe badanie, w którym wzięło udział 117 studentów dietetyki. Wyniki opracowano za pomocą arkusza kalkulacyjnego Excel.

WYNIKI: Z przeprowadzonej analizy wynika, że osoby z prawidłową masą ciała najczęściej spożywają produkty typu light kilka razy w miesiącu (34,9%), z nadmierną masą ciała 2–3 razy w tygodniu (41,2%), a z niedowagą rzadziej niż raz w miesiącu (28,6%).

WNIOSKI: Niezależnie od stopnia studiów oraz miejsca zamieszkania studenci dietetyki najczęściej spożywają produkty light, „lekki” oraz fit kilka razy w miesiącu. Osoby o prawidłowej masie ciała, a także osoby, które zwracają uwagę i kontrolują masę ciała, spożywają te produkty kilka razy w miesiącu.

SŁOWA KLUCZOWE

light, lekki, fit, ocena spożycia, studenci

INTRODUCTION

Nowadays, almost every food product in the world has its equivalent in a lower-energy version. A rich offer of low-energy products is offered in the United States, where food with a reduced energy value is popular and willingly purchased, which may be related to the large number of people struggling with overweight and obesity [1,2]. Also on the Polish market, we can increasingly more often find products labelled “lekki”. According to the law, the manufacturer of such a product may use such a name if its energy value is reduced by at least 30% (total energy value) in relation to the primary product. In addition, the manufacturer should also include on the label information about the property that determines that the product can be described as “lekki”. However, in Poland the market of low-energy food products is not properly systematized, and a certain amount of the terminology used is not regulated by law [3,4,5]. Food producers are eager to take advantage of legal loopholes and introduce food with names suggesting a product with a reduced energy value. In connection with the above, there are products on the market that have the word “fit”, “fitness” or “slim” in their names. Nevertheless, products marked in this way very often do not differ from their traditional counterparts, and may even be more caloric than them. Furthermore, on store shelves in Poland one can find both products marked as “light” and “lekki” [5,6]. According to the analysis of food products carried out on the Warsaw market in 2013, where 150 different food products described as light were analyzed, only ¼ of them met the conditions of the statement contained in Regulation (EC) No. 1924/2006 [7].

There is a systematic increase in the range of products with a reduced energy value offered on the market.

There are ever more products described as “light”, “lekki” or “fit”, which can be placed on the market without major problems owing to legal inaccuracies in the food sector. The dairy industry is the most developed industry in terms of the production of “light”, “lekki” and “fit” products, and the smallest amount of “low-calorie” products is introduced by the meat industry. It is difficult for consumers to choose products that will provide the right amount of calories to meet their physiological needs and what is more, the process of purchasing food is determined by many factors. The factors most often determining the choice of a product are the chemical composition, nutritional value, functional features, economic and social factors. Sometimes consumers are guided by fashion when choosing a product, especially in the case of products labeled “light”, “lekki”, “fit” or “fitness”. Sometimes the choice of food by consumers is accidental because not every consumer has sufficient knowledge about food [8,9,10,11,12]. The insufficiently regulated food market and the producers’ desire to achieve high profits from the sale of products cause the situation that there are products on the Polish market that do not meet the standards. It is therefore important to assess the consumption of energy-reduced food by consumers, in particular by consumers with knowledge of proper nutrition.

MATERIAL AND METHODS

An anonymous survey was conducted among students of dietetics at universities in Poland, which included 120 people. Due to incorrect completion of the questionnaire, 3 questionnaires were excluded from the analysis, thus 117 people ultimately took part in the survey. The share of surveys not included in the analysis is 2.5%. The study involved 109 women and



8 men, which accounted for 93% and 7% of the respondents. The average age of the respondents was 24. The second year of 2nd cycle students accounted for 33%, the third year of 1st cycle students 32%, the first year of 1st cycle students 16%, the first year of 2nd cycle students 12% and the second year of 1st cycle students 7% of the respondents. Most of the students participating in the study live in the city (71% – urban; 29% – rural). For each of the surveyed students, the body mass index (BMI, kg/m²) was calculated on the basis of body height and weight. As a result of the assessment of the BMI and the analysis of the results in accordance with the interpretation of the BMI by according to World Health Organization (WHO), 2 people were diagnosed with obesity of the 2nd degree, 1 person with the 1st degree of obesity, and

14 people were overweight. 86 respondents had normal body weight and 14 were underweight. The results were compiled using an Excel spreadsheet.

RESULTS

According to the analysis, the largest number of women declared the consumption of light, “lekki” and fit products “less than once a month”, while the largest number of men declared the consumption of this type of products “once a day”. None of the men declared that they “do not consume” such products. Light and “lekki” products, in turn, each are not consumed by 22.9%, and fit by 19.3% of the surveyed women (Figures 1 and 2).

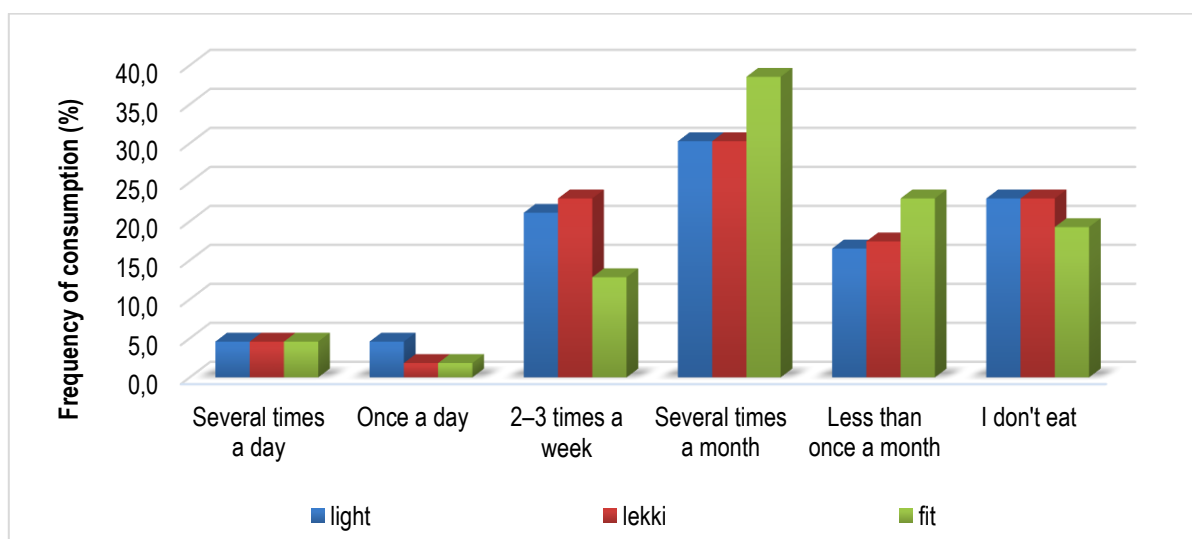


Fig. 1. Frequency of consumption of light, “lekki”, fit products in group of surveyed women (n = 109).

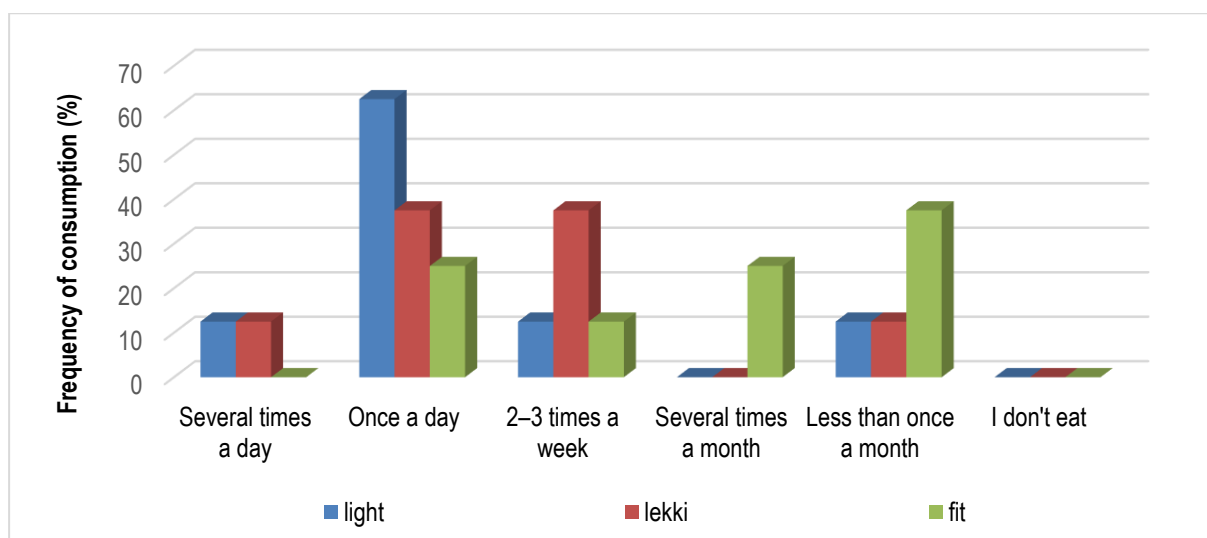


Fig. 2. Frequency of consumption of light, “lekki”, fit products in group of surveyed men (n = 8).



Regardless of the cycle of studies, the consumption of light, “lekki” and fit products “several times a day” and “once a day” was always declared by less than 4 people. Fit products are more often not consumed by the respondents from the 1st cycle of studies compared to light and “lekki” products (17.2% for light and “lekki”, 21.9% for fit). In turn, fit products are more likely to be chosen by 2nd cycle students compared to light and “lekki” products (“I don’t eat” for “lekki”, light 28.3% for each, for fit 18.7%; Table I). Both people living in

rural and urban areas usually consume light, “lekki” and fit products “several times a month”. These products are not consumed by approx. 21.4% of the respondents living in the city. Irrespective of the group of products with a reduced energy value, their consumption “several times a day” was declared by 6% of the respondents living in the city. None of the people living in rural areas declared the consumption of light, “lekki” and fit products “several times a day” (Table II).

Table I. Frequency of consumption of light, “lekki”, fit products by students depending on cycle of studies (n = 117)

Cycle of studies	Answer	Light products (number of people)	“Lekki” products (number of people)	Fit products (number of people)
1st cycle	several times a day	3	3	4
	once a day	4	1	1
	2–3 times a week	19	18	8
	several times a month	22	22	21
	less than once a month	5	9	16
	I don't eat	11	11	14
2nd cycle	several times a day	2	2	1
	once a day	2	2	1
	2–3 times a week	9	10	8
	several times a month	12	14	22
	less than once a month	13	10	11
	I don't eat	15	15	10

Table II. Frequency of consumption of light, “lekki” and fit products by students depending on place of residence (n = 117)

Place of residence	Answer	Light products (number of people)	“Lekki” products (number of people)	Fit products (number of people)
Urban area	several times a day	5	5	5
	once a day	5	2	0
	2–3 times a week	19	20	13
	several times a month	24	26	30
	less than once a month	13	14	18
	I don't eat	18	17	18
Rural area	several times a day	0	0	0
	once a day	1	1	2
	2–3 times a week	9	8	3
	several times a month	10	10	13
	less than once a month	5	5	9
	I don't eat	8	9	6

According to the survey analysis, the largest number of people with a normal body weight declared the consumption of light, “lekki” and fit products “several times a month” – the consumption of these products was respectively 34.9%, 31.4% and 39.5% of the respondents. In the group of people with excessive body weight, the largest number of respondents declared the consumption of light and “lekki” products “2–3 times a week”, and fit products “several times

a month”. The consumption of light and fit products in this group of respondents, “2–3 times a week”, was declared by 41.2% for each, and “lekki” products by 35.3%. On the other hand, in the group of underweight people, the consumption of light, “lekki” and fit products was most often declared “less than once a month” (respectively: 28.6%, 42.9%, 35.7%; Table III). Most of the respondents (85%) control their body weight and pay attention to it. The students from



this group most often declared the consumption of food with a reduced energy value “several times a month”. People who do not pay attention to their body weight usually do not consume light and “lekki” products. Fit products in this group are most often eaten “several times a month” (Table IV).

In the largest group of students, i.e. in the group of people who are physically active several times a week,

light, “lekki” and fit products are most often consumed “several times a month” (light – 31.4%, “lekki” – 32.9%, fit – 38.6%). Light and “lekki” products are equally willingly consumed in this group “2–3 times a week” (28.6% for each). People who declare a lack of physical activity most often do not consume light, “lekki” and fit products at all (Table V).

Table III. Frequency of consumption of light, “lekki”, fit products by respondents depending on body mass index (BMI; n = 117)

BMI interpretation	Answer	Light products (number of people)	“Lekki” products (number of people)	Fit products (number of people)
Underweight	several times a day	1	2	1
	once a day	1	0	1
	2–3 times a week	3	1	2
	several times a month	2	3	2
	less than once a month	4	6	5
	I don't eat	3	2	3
Correct body weight	several times a day	4	2	4
	once a day	2	2	1
	2–3 times a week	18	21	12
	several times a month	30	27	34
	less than once a month	12	13	18
	I don't eat	20	21	17
Excessive body weight	several times a day	2	1	1
	once a day	1	1	0
	2–3 times a week	7	6	2
	several times a month	2	6	7
	less than once a month	2	0	4
	I don't eat	3	3	3

Table IV. Frequency of consumption of light, “lekki”, fit products by students depending on control of their body weight (n = 117)

Body mass control	Answer	Light products (number of people)	“Lekki” products (number of people)	Fit products (number of people)
Pay attention and control their body mass	several times a day	5	5	5
	once a day	6	2	2
	2–3 times a week	24	24	16
	several times a month	32	32	34
	less than once a month	15	18	24
	I don't eat	17	18	18
Do not pay attention and do not control their body mass	several times a day	0	0	0
	once a day	0	1	0
	2–3 times a week	4	4	0
	several times a month	2	4	9
	less than once a month	3	1	3
	I don't eat	9	8	6



Table V. Frequency of consumption of light, “lekki”, fit products by students depending on physical activity (n = 117)

Physical activity	Answer	Light products (number of people)	“Lekki” products (number of people)	Fit products (number of people)
Every day	several times a day	0	0	0
	once a day	2	1	0
	2–3 times a week	2	2	1
	several times a month	2	2	4
	less than once a month	3	4	3
	I don't eat	0	0	1
A few times a week	several times a day	2	1	2
	once a day	3	1	1
	2–3 times a week	20	20	9
	several times a month	22	23	27
	less than once a month	10	13	19
	I don't eat	13	12	12
Once a week	several times a day	3	3	2
	once a day	0	0	0
	2–3 times a week	5	2	4
	several times a month	5	9	6
	less than once a month	4	2	5
	I don't eat	2	3	2
Less than once a week	several times a day	0	1	1
	once a day	1	1	0
	2–3 times a week	1	3	2
	several times a month	4	2	5
	less than once a month	1	0	0
	I don't eat	5	5	4
Never	several times a day	0	0	0
	once a day	0	0	1
	2–3 times a week	0	1	0
	several times a month	1	0	1
	less than once a month	0	0	0
	I don't eat	6	6	5

DISCUSSION

According to the results of this study, light, “lekki” and fit products are consumed daily (“several times a day”, “once a day”) by 9%, 7% and 6% of the surveyed students, respectively. Light and “lekki” products were consumed 2–3 times a week by 24% of the respondents, and fit products by 14%. The largest percentage of the surveyed students consume products with a reduced energy value several times a month (29% – light, 31% – “lekki”, 37% – fit). Light products are consumed less than once a month by 15%, “lekki” products by 16% and fit products by 23% of the dietetics students. Light and “lekki” products are not consumed by 22% of the respondents, while fit products by 21%. It was revealed that 13% of the people did not consume any of the three groups of products with a reduced energy value (light,

“lekki”, fit). In the study by Dąbrowska and Babicz-Zielińska [11], concerning consumer behavior towards new generation food, only 7% of the respondents declare that they do not consume this type of food. This food is most often consumed once a month by the people surveyed (27%). Also in the study by Górecka et al. [13], the majority of the respondents included low-calorie products in their diet. In addition, regardless of the body weight of the respondents, the average frequency of consumption of this type of products was similar, and products with a reduced energy value were not commonly used by people with excessive body weight. In our own study, only 18% of the overweight or obese people do not eat such products at all (Table III). The research by Grzelak et al. [14] shows that as many as 83% of students of Poznań universities have consumed an item from the group of products with a reduced energy value at least once in



their lives. Nevertheless, despite such a high percentage result, as many as 65% of the respondents did not decide to consume low-energy products on a regular basis. Only 24% of the surveyed students repeatedly reached for this type of products after trying them before. According to the research results of Jeżewska-Zychowicz et al. [10], the interest in light food is relatively low. As many as 32.2% of their respondents do not eat this food at all, and 38.1% eat it rarely. Out of a thousand surveyed people, only ¼ declare their willingness to buy such food in the near future. The research focusing on dairy products with a reduced energy value conducted by Gniedziejko and Lesiów [15] shows that as many as 60% of the respondents do not buy this type of food. Light dairy products are bought by 9% of the respondents every day, 19% buy them several times a week, and 15% less than once a month. Most of the respondents buy this type of product once a week (47%). In our study, light products are consumed daily (“several times a day” and “once a day”) by 14.3% of underweight students and by 7% of students with normal body weight (Table III). On the other hand, students from Morocco [16] who are underweight usually do not consume light products every day (0.73%). The respondents with normal body weight consuming this type of products every day account for 3.28%. Light products are not eaten at all by 1.5% of the underweight respondents and 12.3% with normal body weight, while in our own study the

students who do not consume light products at all, those underweight constitute 21.4%, and 23.3% with a normal body weight.

CONCLUSIONS

Based on the conducted research and analysis of the results, it can be concluded that:

1. Regardless of the degree of study, students of dietetics consume light, “lekki”, fit products usually several times a month.
2. Regardless of the place of residence (urban area/rural area), students most often consume light, “lekki” and fit products several times a month.
3. People with a normal weight consume light products usually several times a month. Underweight people consume this type of products less than once a month, while people with excessive body weight usually consume light products 2–3 times a week.
4. Most of the surveyed students pay attention to and control their body weight. These people usually eat energy-reduced food several times a month.

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Author's contribution

Study design – A. Szczyrba, M. Kardas

Data collection – A. Szczyrba

Data interpretation – A. Szczyrba

Manuscript preparation – A. Szczyrba

Literature research – A. Szczyrba

Final approval of the version to be published – M. Kardas

REFERENCES

1. Korbutowicz T. Żywność funkcjonalna na rynku światowym. *Studia i Prace WNEiZ US* 2018; 53(2): 209–220, doi: 10.18276/sip.2018.53/2-16.
2. Daniek K. Nutritional needs as a determinant of the growing functional food market. [Article in Polish]. *Problemy Drobnych Gospodarstw Rolnych – Problems of Small Agricultural Holdings* 2018; 4: 5–18, doi: 10.15576/PDGR/2018.4.5.
3. Grochowicz J., Fabisiak A. Functional food – legal aspects and the meaning of selected bioactive ingredients. [Article in Polish]. *ZNUV* 2018; 60(3): 143–153.
4. Korbutowicz T. Functional foods in the European Union – the concept, requirements and development of markets. *Ekonomia – Wrocław Economic Review* 2017; 23(4): 151–167, doi: 10.19195/2084-4093.23.4.12.
5. Regulation (EC) No 1924/2006 of the European Parliament and of the Council of 20 December 2006 on nutrition and health claims made on foods. EUR-Lex [online] <https://eur-lex.europa.eu/eli/reg/2006/1924/oj> [accessed on 6 December 2023].
6. Szczepańska E., Grudowska E. Consumption of light foods and drinks among adults. *Ann. Acad. Med. Siles.* 2020; 74: 68–76, doi: 10.18794/aams/113688.
7. Derewiaka D., Sobiecka A., Ciecierska M., Drużyńska B., Majewska E., Kowalska J. Characteristic of energy-reduced functional foods. [Article in Polish]. *Post. Tech. Przetw. Spoż.* 2013; 2: 70–74.
8. Tomaszewska M., Bilska B., Grzezińska W., Przybylski W. Functional food as a possibility for development of Polish food companies. [Article in Polish]. *Roczn. Nauk. Stow. Ekon. Roln. Agrob.* 2014; 16(3): 293–298.
9. El S.N., Simsek S. Food technological applications for optimal nutrition: An overview of opportunities for the food industry. *Compr. Rev. Food Sci. Food Saf.* 2012; 11(1): 2–12, doi: 10.1111/j.1541-4337.2011.00167.x.
10. Jeżewska-Zychowicz M., Jeznach M., Kosicka-Gębska M. Consumers' willingness to eat light food. [Article in Polish]. *Bromat. Chem. Toksykol.* 2012; 45(3): 603–607.



11. Dąbrowska A., Babicz-Zielińska E. Consumers' behaviors with reference to novel food. [Article in Polish]. *Hygeia Public Health* 2011; 46(1): 39–46.
12. Babicz-Zielińska E., Jeżewska-Zychowicz M. Impact of the environmental factors on food choice and consumption. [Article in Polish]. *Handel Wewnętrzny* 2015; 2(355): 5–18.
13. Górecka D., Czarnocińska J., Adamska D. Evaluation of frequency of consumption of low calorie products in a selected group of people. [Article in Polish]. *Probl. Hig. Epidemiol.* 2015; 96(3): 648–651.
14. Grzelak T., Grubińska J., Kramkowska M., Walczak M., Czyżewska K. Student assessment of knowledge about low-calorie food and analysis of its consumption. [Article in Polish]. *Forum Zab. Metab.* 2014; 5(2): 77–86.
15. Gniedziejko M., Lesiów T. Consumer behaviour connected with the choice of dairy light products and their conditions. [Article in Polish]. *Engin. Sci. Technol.* 2018; 4(31): 31–51, doi: 10.15611/nit.2018.4.02.
16. Mestaghanmi H., Labriji A., Kaoutar S., Kehailou FZ., Mehdi M., M'Touguy I. et al. Consumption of light products and prevalence of obesity among a population of academics in Casablanca, Morocco. *IJASRE* 2020; 6(3): 150–165, doi: 10.31695/IJASRE.2020.3376.