

Effectiveness of slimming aid products as perceived by a group of young women reducing their body mass

Skuteczność preparatów wspomagających odchudzanie w opinii grupy młodych kobiet redukujących masę ciała

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Cel. Ocena skuteczności stosowanych suplementów wspomagających redukcję masy ciała wśród młodych kobiet.

Materiał i metoda. Badania przeprowadzono w grupie 100 kobiet w wieku 20-26 lat deklarujących stosowanie preparatów wspomagających odchudzanie, z zastosowaniem przygotowanego kwestionariusza.

Wyniki. Badania wykazały, że największy odsetek kobiet stosuje preparaty działające w sposób złożony (72%), stymulujące spalanie tkanki tłuszczowej (64%), intensywność procesów metabolicznych (57%) oraz termogenezę (49%). Najmniej preferowane są środki zmniejszające łaknienie (19%). Najczęściej wybieranymi preparatami są Alli (23%), Bio CLA z zieloną herbatą (22%), Therm Line II (22%) oraz Linea (19% wskazań). Spośród stosowanych suplementów, kobiety jako najskuteczniejsze postrzegają Alli (21%), Therm Line II (19%), Linea (18%) oraz Bio CLA z zieloną herbatą (15%). Kobiety w większości (71%) bardzo dobrze lub dobrze oceniają efektywność przyjmowanych preparatów, a skutki uboczne, najczęściej na skutek wpływu środków termogenicznych, dostrzega 23% badanej próby.

Wnioski. Stosowaniu suplementów wspomagających odchudzanie towarzyszy pozytywna ocena ich skuteczności, przy występowaniu jednak objawów ubocznych.

Słowa kluczowe: redukcja masy ciała, preparaty wspomagające odchudzanie, kobiety

Aim. To evaluate the effectiveness of slimming aid products reducing body mass used by a group of young women.

Material & method. The questionnaire-based research was carried out among a group of 100 women aged 20-26 years who declared using slimming aid products.

Results. The research has demonstrated that the highest percentage of women use complex action preparations (72%), preparations which stimulate fat tissue burning (64%), metabolic process (57%) and thermogenesis (49%). Thirst-reducing preparations are the least popular (19%). The most frequently chosen products include: Alli (23%), Bio CLA with green tea (22%), Therm Line II (22%) and Linea (19%). From among the supplements used by the women, the highest rating for effectiveness was given to Alli (21%), Therm Line II (19%), Linea (18%) and Bio CLA with green tea (15%). The majority of women (71%) rated the effectiveness of the preparations as good or very good, while 23% of the examined sample noticed side effects, which were usually produced by thermogenic preparations.

Conclusions. The use of slimming supplements is accompanied by a positive rating of their effectiveness, however, with simultaneous occurrence of side effects.

Key words: body mass reduction, slimming aid preparations, women

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Introduction

Health and psychosocial consequences of excessive body mass are the reasons why prevention and treatment of obesity is growing in importance. Body mass reduction contributes to the improvement of the quality of life and reduces the risk of developing degenerative diseases which accompany obesity, including cardiovascular diseases, type 2 diabetes and some cancers [1-11]. The treatment of obesity and the improvement of metabolic indices, including

lipid profile and glucose tolerance, can be aided by a dietary program combined with health training [8,11,12]. In addition to a diet therapy and a change of lifestyle, with fixed values of anthropometric and biochemical parameters negatively defining the health condition, pharmacotherapy and surgical treatment are recommended [12-17]. Pharmaceuticals used in the treatment of obesity act through thirst quenching, regulation of digestion and absorption in the intestines as well as an increase in energy expenditure

[12,16-19]. There is a growing market of over-the-counter parapharmaceutical products with different mechanisms aiding the reduction of excessive body mass [18,20].

Aim

To evaluate the perception of effectiveness of slimming aid products in a group of young women who declared their use.

Material and method

The research was carried out in 2010 in a group of a hundred women aged 20-26 years who declared reducing body mass and using slimming aid products. The sample included women residing in Krakow (33%) or other cities of the Malopolska Province (59%) and in the countryside (8%), students (56%) or women in employment (44%). The majority of the group were women who declared moderately active (47%) or inactive lifestyles (35%), fewer women declared active lifestyles (18%). The women were convinced of the necessity to reduce their body mass by several kilograms (43%) or about 1 kilogram (27%). Based on the basic somatic parameters, BMI was evaluated. The distribution of BMI shows that 31% of women manifested correct body mass, 52% were overweight and 17% were obese.

The research was conducted by means of a diagnostic survey, using a prepared questionnaire with questions concerning the used methods of body mass reduction, frequency and quality of the slimming aid products used, subjective evaluation of their effectiveness and the observed side effects.

Results

The greatest percentage of the examined women use complex action products (72%) which stimulate fat tissue burning (64%), intensity of metabolic processes (57%) and thermogenesis (49%) (Tab. I). Thirst quenching products were the least popular (19%). The most frequently selected products included Alli (23%), Bio CLA with green tea (22%), Therm Line II (22%) and Linea (19%). The women declared taking those preparations usually three times (62%) or twice a day (29%), for at least a year (44%) or 1-2 months (23%), less frequently for a different period of time (Tab. I).

From among the used supplements, the highest rating for effectiveness was given to Alli (21%), Therm Line II (19%), Linea (18%) and Bio CLA with green tea (15%) (Table II). According to 74% of the women the use of those products results in body mass reduction, noticeable already after 1-3 weeks (64%). The side effects were noticed by 23% of

Table I. Use of slimming preparations in a group of young women

Evaluated parameters		Percentage of respondents
Groups of supplements based on their action mechanism*	Complex	72,0
	Promoting fat tissue burning	64,0
	Accelerating metabolism	57,0
	Thermogenic	49,0
	Laxative and diuretic	41,0
	Inhibiting fat and carbohydrate absorption	38,0
	Thirst quenching	19,0
Examples of preferred preparations*	Alli	23,0
	Bio CLA with green tea	22,0
	Therm Line II (Olimp)	22,0
	Linea	19,0
	Slim Figura (phase I, II, III)	15,0
	Apple Fit	14,0
	Xenna Extra	11,0
	Błonnik Complex	10,0
	Chitosan	10,0
L – karnityna	10,0	
Fat Burner Plus	8,0	
Frequency of using supplements	3 times a day	62,0
	Twice a day	29,0
	Once a day	8,0
	Once a week	1,0
Duration of treatment	≥ Year	44,0
	5- 6 months	14,0
	1-2 months	23,0
	A few weeks	19,0

* Percentages do not add up to a 100

Table II. Evaluation of effectiveness and side effects of slimming products in a group of young women

Evaluated parameters		Percentage of respondents
The most effective products, as perceived by the women*	Alli	21,0
	Therm Line II (Olimp)	19,0
	Linea	18,0
	Bio CLA with green tea	15,0
	Apple Fit	14,0
	Xenna Extra	11,0
	Green tea (Olimp)	10,0
	L- karnityna	9,0
	Fat Burner Plus (Olimp)	7,0
Reported effects**	Body mass reduction	74,0
	Impression of improved body contours	50,0
	Fat tissue reduction	23,0
Time after which results were noticed	1-2 months	36,0
	1-3 weeks	64,0
Side effects *	None	77,0
	Accelerated pulse rate	14,0
	Excessive sweating	11,0
	Insomnia	11,0
	Irritability	10,0
	Headache	9,0
	Nausea	7,0
	Stomach ache	6,0
	Hair loss	6,0
	Diarrhea	3,0
	Very good and good rating of the product effectiveness	71,0

* Percentages do not add up to a 100

the examined women who most frequently reported an increased pulse (14%), excessive sweating and insomnia (11% in each case) and irritability (10%). Those symptoms were most frequently reported by the women using thermogenic products. When evaluating the effectiveness of slimming aid products, 71 % of the women rated them as good or very good (Tab. II).

In order to reduce body mass 86% of the women have also used other methods, especially physical activity (61%) and diet (51%) and the preferred form of physical activity was aerobics (30%) and gym exercises (20%) (Tab. III).

Table III. Other forms of aiding body mass reduction in a group of young women

Evaluated parameters	Percentage of women	
Using other forms of body mass reduction	86,0	
Other forms of body mass reduction*	Medication	7,0
	Physical activity	63,0
	Diet	51,0
	Cosmetic treatments	29,0
Preferred forms of physical activity*	Aerobics	30,0
	Gym	21,0
	Swimming	15,0
	Bike riding	13,0
	Jogging	11,0

* Percentages do not add up to a 100

Discussion

It has been found that in the group of young women who attempted reduction of excessive body mass, which objectively occurred in 69% of the sample, and who used slimming supplements, alongside with a diet (51%) and increased physical activity (61%), preparations with varied action mechanisms were popular. They were usually perceived as effective (71%), with a simultaneous report of side effects (23%). It was demonstrated that also the women with correct BMI tried to reduce their body mass and used slimming supplements, which confirms a tendency described in other research [21].

A wide classification of slimming aid products was adopted, taking into account their action mechanism, based on which a distinction was made into thirst quenching supplements and products filling the digestive tract, laxatives and diuretics, products inhibiting fat and carbohydrate absorption in the intestines, regulating digestion and accelerating metabolism, promoting fat tissue burning, thermogenic and complex action products [20]. This classification is related to a different one, concerning drugs used in the pharmacological treatment of obesity, which affect the central nervous system, peripherally affect the digestive system and increase the body energy

expenditure [12,16,18,19,22]. An independent study by the author demonstrated that women most frequently opted for complex action products (72%), products stimulating fat tissue burning (64%) metabolic processes (57%) as well as thermogenesis (49%). Another group of young women, residing in Szczecin, who attempted body mass reduction, most frequently (53.8%) reached for appetite suppressants giving the feeling of fullness, containing fiber, chromium and hydroxycytric acid (HCA) as well as supplements stimulating lipolysis and thermogenesis (46.2%), containing L-carnitine, CLA, choline and caffeine. The main criterion for the choice of products by the students was usually the price of the product, not its quality [20].

Slimming preparations commonly available on the market contain different bioactive ingredients, including fiber, bromelia, chitosan, conjugated linoleic acid, organic chromium, white kidney bean extract, L-carnitine, hydroxycytric acid (HCA), apple cider vinegar, caffeine, guaranine, choline, inositol, tyrosine, and others. As a result, the preparations showed varied effects, including appetite suppression, stimulation of lipolysis and thermogenesis [18,20]. The supplements increasing energy expenditure contain among others caffeine and ephedrine, the carbohydrate metabolism is stimulated by chromium, the feeling of fullness is promoted by different fractions of fiber, the oxidation and/or thermogenesis of lipids is accelerated by hydroxycytric acid (HCA), diene of linoleic acid CLA, choline, caffeine and L-carnitine, while the absorption of fats is inhibited by chitosan and white kidney bean extract [20,23,24]. Out of the wide offer of commercially available slimming supplements, the examined women most frequently selected Alli (23%), Bio CLA with green tea (22%), Therm Line II (22%) and Linea (19%). The majority of women (74%) favorably perceived the role of the products in body mass reduction. From among the used preparations, the highest rating for effectiveness was given to Alli (21%), Therm Line II (19%), Linea (18%) and Bio CLA with green tea (15%). Orlistat is the active substance in Alli, while Therm Line II contains green tea extract, bitter orange and guarana extracts, caffeine, L-tyrosine and L-carnitine. Linea contains green tea extract, apple vinegar, white kidney bean extract, chromium and L-carnitine, while Bio CLA with green tea contains dienes of linoleic acid and green tea extract with polyphenols.

It seems valid to discuss here the functional properties of selected ingredients of supplements and medications used in the treatment of obesity. Orlistat, an active substance in the favorably rated Alli, an inhibitor of gastrointestinal lipases, is also an ingredient of drugs used in the diet therapy of

obesity which regulate the digestion processes and absorption into the intestines, thus reducing fat absorption [14,16,18,25]. Orlistat, in addition to its effect on lipid absorption, contributes to the decrease of total cholesterol and LDL concentration in blood plasma, is antihypertensive and improves the carbohydrate metabolism [14,16,18,25-29]. Orlistat can be a part of diet therapy for obesity, alongside with a low calorie diet, with a reduced amount of fats [16,18]. Also caffeine, alongside with ephedrine and β -antagonists, is a component of drugs raising energy expenditure through an increased thermogenesis, as a result of central activation of the sympathetic nervous system or peripheral β 3-adrenergic receptors stimulation [16]. Caffeine, alongside with ephedrine preparations and so-called fat burners and energy drinks, is a body mass reducing supplement [30]. Guarana extract containing methylxanthines, such as caffeine, theophylline and theobromine is used in slimming treatments as a hunger suppressant [31]. As L-carnitine makes it possible to use long-chain fatty acids as an energy source, it is perceived as a fat tissue reducing substance [32] and is increasingly used in slimming aid products [33], although there are varied opinions concerning its effectiveness [34-36]. Conjugated linoleic acid (CLA), apart from participation in body mass reduction, improves glucose tolerance and blood lipid profile [20,37]. Slimming properties of the hydroxycitric acid (HCA) have not been unequivocally confirmed [38-41].

The side effects of slimming aid products are most frequently reported by women using thermogenic products containing stimulants, such as caffeine. The women frequently noticed an increased pulse rate, insomnia and excessive sweating (10-14%). The research has demonstrated the adverse effects of herbal thermogenic preparations containing ephedrine alkaloids and caffeine and stimulating the release of endogenous catecholamines, resulting in accelerated heart rate and arrhythmia, accelerated breathing, increased arterial pressure, psychomotor agitation with myokymia and anxiety, probably due

to ignoring precautions (middle and old age, arterial hypertension, diabetes) or excessive doses [31].

Prevention of excessive weight and obesity requires a complex action, including a dietary program and an increased physical activity, in order to obtain a negative energy balance, as well as a change in eating habits [11,12,17,19,22]. The majority of the examined women (86%), apart from using supplements which aid body mass reduction, also reported other weight loss methods, such as diet (51%) and physical activity (63%), which raises the effectiveness of the therapy and may explain the favorable rating of the effectiveness of slimming products reported by 71% of the sample. The highest percentage of the women do aerobics (30%) which increases energy expenditure, promotes body mass reduction and improves their health condition. In a different group of young women, students of Zachodniopomorski Uniwersytet Szczeciński (West Pomeranian University in Szczecin) who attempted to reduce their body mass, fewer than 50% modified their diet, and over 50% of the examined group used supplements, which also limits the interpretation of the rating of the slimming product effectiveness, similarly to what was shown in the author's independent research [20].

Conclusions

1. Young women, not only those with excessive body mass, take slimming supplements, usually selecting complex action preparations which stimulate fat tissue burning, intensity of metabolic processes and thermogenesis.
2. Slimming supplements have been rated favorably for their effectiveness by 71% of the sample, however, the fact of simultaneous use of other forms of body mass reduction (diet modification and increased physical activity) restricts the objectivity of this interpretation.
3. Side effects of slimming supplements reported by 23% of the sample are usually related to the use of thermogenic agents.

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