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Article

# Motivations in weight reduction and undesirable eating behaviors among women with excessive body weight (Poland)

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**Abstract:** Introduction: It is recognized that obese people are less tolerated and accepted than people of normal weight. It is common to use stereotypes, stating that people with excessive body weight are less intelligent and lead careless lifestyles. Such an opinion, among other things, leads to psychological factors characterized by low self-esteem or lack of self-acceptance, and in the long run leads to anorexia, bulimia, or compulsive overeating. The aim of this study was to evaluate the relationship between attitudes toward weight loss, taking into account: the motivating factors that determine the desire to attempt weight loss; the level of well-being and degree of motivation before and during the weight loss attempt; changes in attitudes after an unsuccessful weight loss attempt; the state of well-being after the completed weight loss attempt and the degree of severity of disordered eating according to the TFEQ-13 questionnaire. Material and methods: The study was conducted among 600 female users of forums for people with excessive weight. The research method used in this study was the author's questionnaire and the standardized Three-Factor Eating Questionnaire. A general survey questionnaire serving as a working tool was sent by Computer-Assisted Web Interview to community groups. Results: The predominant group of respondents cannot even count the weight reduction attempts they have made during their lives (31%). Three attempts were made by 29% of respondents, and two attempts by 17%. Attempts to lose weight most often involved increasing current physical activity (overall responses), reducing the caloric content of meals (26%), and improving current eating habits (22%). Most people reduced their body weight from 6 kg to 10 kg (29%) or from 3 to 5 kg (27%). It was found that low a risk of aggravation was diagnosed in 45.5% of people, moderate in 44.5, and low in 10%. For lack of control over eating – a low risk was observed in 15.5% of people, moderate in 68.5% of people, and high in 16%. Evaluating eating under the influence of emotions, the highest risk of the studied phenomenon was observed in 50.5% of people, moderate risk in 36.5% of people, and low risk in 13% of people. Conclusions: The level of motivation significantly decreased when trying to reduce weight. No significant deterioration in well-being was observed before and during the weight loss attempt. Results: In the study group, the most important motivators for change were low self-esteem and poor mood. The level of motivation significantly decreased during the weight loss attempt. No significant deterioration in well-being was observed before and during the weight loss attempt. Improved well-being after the weight-loss attempt had no significant effect on the severity of uncontrolled eating, with the exception of emotional eating - weight-loss-related well-being improved in women with a low or moderate risk of this phenomenon.

**Keywords:** motivation, weight reduction, eating behaviors, overweight, obesity, women, Poland

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## 1. Introduction

Recently, the trend of searching for diet news online has become apparent. The problem of implementing unproven weight-loss methods is also apparent. Unsuccessful attempts clearly affect the motivation of people who are trying to lose weight. The Internet is an important tool in communication, but it is worth exploring the issue of motivation among people who use forums for overweight, obese people or people who want to reduce their weight. The work centers around the issue of undesirable dietary phenomena that can develop as a result of misguided dieting and reduction.

Obesity in recent years has become a widespread disease, identified with increased body weight or increased body fat that deviates from normal norms. The WHO has recognized obesity as a chronic disease, describing it as a global epidemic of the 21st century. Increased body weight in obesity is one of the most common factors that contribute significantly to the risk of death in the world population. Women suffering from obesity have a fat content that deviates from the norm by 30%, and men by 25% relative to normal body weight [1]. An average of 2.8 million people worldwide die each year due to being overweight and obese, and the incidence continues to rise over the years. According to the WHO, the prevalence of obesity tripled between 1975 and 2016. In turn, in 2016, more than 1.9 billion people of adult age were overweight, and about 650 million people were obese [2, 3]. Data collected on the increasing trend of overweight and obesity in Poland and around the world indicate that the rate of increase in the incidence of the disease will continue from year to year, in 2030 the percentage of obese women may reach as high as 31.4% and men 37.0% [2]. Compared to other European Union countries, Poland has the highest percentage of obese women and men [4].

Nowadays, it is recognized that obese people are less tolerated and accepted than people of normal weight. The use of stereotypes, stating that people with excessive body weight are less intelligent and have a careless lifestyle, is common. Such an opinion among others leads to psychological factors characterized by low self-esteem or lack of self-acceptance, and in the long run leads to the formation of anorexia, bulimia, or compulsive overeating [5]. Different types of human emotional states, such as sadness, boredom, or joy, affect the level of food consumed. In the situation of depressive disorders, there is often a reduction in the amount of food consumed, while in some people, when coping with stress, eating becomes a springboard for daily problems and is consumed in excessive amounts. Interestingly, the group that tends to increase food consumption under nervousness is primarily women [6].

Due to numerous mindset issues, it is recommended that those attempting to lose weight have psychological support, consisting primarily of building better self-esteem, and determination, and increasing current motivation. The weight-loss process is not easy and sometimes not very effective, and as a result, people on a weight-loss diet may experience feelings of helplessness or give up. It is therefore important to get help from several specialists, including a nutritionist, doctor, trainer, and even a psychologist [5, 7]. After all, weight reduction can bring many benefits, both in terms of prevention and health. According to the NCEZ, a 10-kg weight reduction can result in a 20% lower risk of death, as well as have a beneficial effect on the lipid profile - lowering total cholesterol, LDL cholesterol, or triglycerides, while increasing HDL (often referred to as 'good' cholesterol) [8].

The level of motivation or determination to reduce weight is influenced by two components: setting an intended goal and achieving it [9]. Some experts believe that goal setting is significantly influenced by one's opinion of one's body image. It is recognized that a major problem in motivation is a lack of communication and listening to the needs of one's body. People who have a high degree of confidence and acceptance of their bodies automatically have increased motivation aimed at achieving better results. They are persistent in their actions and pursue their goals consistently, believing in their abilities. In the opposite situation, people with low self-confidence often feel undervalued, do not impose any goals on themselves, and presume failure to achieve their goal in advance. This is explained by less exposure to the occurrence of tension related to the opinion of others. This attitude can lead to feelings of helplessness in professional but also social life [9].

Motivation is a key element in helping to modify current eating habits. There are two types of motivation: extrinsic and intrinsic. Extrinsic motivation consists of the contribution of factors from the environment. It consists of the pressure created by society when a doctor or loved one tells you to reduce weight [10]. This type of motivation is not permanent and is usually not right because it does not depend on the person. In extrinsic motivation, one does not feel the need to change by oneself only by the pressure caused by others [11]. The links between the psychological aspects of extrinsic and intrinsic motivation driving certain behaviors and the appropriate approach to physical activity stem from, among other things, self-determination theory (SDT) by Ryan and Deci [10]. These relationships

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show that appropriate conscious evaluation of a goal, as well as the willingness to face a challenge, are among the elements associated with physical activity. This also translates into public health of the population [11].

The issue related to intrinsic motivation is different, as it is permanent and more effective in the pursuit of the desired goal [10]. Individuals who are intrinsically motivated are more likely to take action in a given direction, as this is associated with a sense of satisfaction. Intrinsic motivation is believed to arise with ambition or interest. People who are so motivated achieve the expected results easily, as it does not require them to expend much energy [11]. According to research, the most motivating factors during a weight loss attempt are the actual image of weight and fat loss, causing increased desire and motivation to continue weight loss therapy. The factor that causes a decrease in current motivation is the systematic standing on the scale to check the current weight. For this reason, it is recommended that you give up weighing yourself altogether, and start looking at yourself in the mirror more often [10].

One of the biggest pitfalls in the diet world is to start using so-called 'miracle diets,' that is, restrictive diets designed to lose excessive pounds very quickly. For people who want to lose excess kilograms, such diets seem to be among the best, which is why they are widely popular. Unfortunately, most people who introduce them are unaware of the health consequences of following them. All such diets are based on incorrect principles of healthy eating, which cause increased weakness and fatigue in the body, problems with concentration and sleep, feelings of anxiety and restlessness, and even problems involving the digestive tract [12].

The most common mistake observed in weight-loss therapies is the failure to set expectations correctly for one's reality. Too many people set goals for themselves that are unrealistic to achieve in reality. This happens because of the immediate change of their current eating behaviors to brand new ones, ones that are too restrictive [9]. Another factor contributing to the failure of weight loss is boredom with a particular way of eating, the reason for which is the lack of expected results. During the weight loss stage, it is common to experience a decrease or complete disappearance of previous motivation, which may be due to too much restriction and notorious control over the consumption of a certain group of products [13].

There are many people who have made several or more attempts to lose weight in their lives, but unsuccessfully. The obstacle to their success was a lack of motivational factors or poorly defined goals [12]. It is recommended that in addition to nutritional issues, physical activity should also be taken care of, as it not only reduces the risk of cardiovascular disease but also has an effective effect on individuals in terms of combating overweight or obesity [14]. Indeed, the recreational practice of uncomplicated sports, led by running, is available to everyone [15]. However, it is necessary to properly define one's preferences so that physical activity, in addition to all its positive qualities for weight reduction, brings pleasure [16]. A positive attitude towards the effect of the weight reduction process plays a key role here.

The purpose of this study was to evaluate the relationship between attitudes toward weight loss, including aspects such as:

1. Identifying the motivating factors that determine the desire to attempt weight loss;
2. Analyzing the level of well-being and degree of motivation before and during the weight loss attempt;
3. Observing changes in attitudes after an unsuccessful weight loss attempt;
4. Examining the relationship between the state of well-being after a completed weight loss attempt and the degree of severity of unconserved eating according to the TFEQ-13 questionnaire.

## **2. Materials and Methods**

### *2.1 Sample and selection criteria*

The study was conducted among 600 female users of forums for people struggling with weight problems and who planned to undertake weight reduction. The questionnaire was made available online in March 2021. Respondents were asked to complete the questionnaire twice - at the beginning of the reduction and at the end of the reduction. . The inclusion criteria for the study were age over 18 and at least one attempt at weight reduction during their lifetime and no history of mental problems (reported by participants in the questionnaire). A comprehensive survey questionnaire serving as a working tool was sent electronically using the Computer-Assisted Web Interview CAWI method to groups on social media. In conducting the survey, safeguards against the phenomenon of fake/bot responders were applied in the form of access keys to the questionnaire, checking the dates of submission of responses, and CAPTCHA codes. and who planned to undertake weight reduction. The questionnaire was made

available online in March 2021. Respondents were asked to complete the questionnaire twice - at the beginning of the reduction and at the end of the reduction.

## 2.2. Research tools

The research method used in this study was an author's questionnaire consisting of 14 introductory questions and a standardized Three-Factor Eating Questionnaire. The author's questionnaire included open-ended, closed-ended, single-choice, and multiple-choice questions regarding the degree of motivation before and after the weight loss process, the number of attempts and duration of weight reduction, as well as the most common mistakes and psychological factors of weight loss. The questionnaire was piloted among 30 people before the study. The questionnaire was distributed to the group twice with a time interval of three weeks. The compliance of the questions was assessed at  $\pi=0.75$  - a good level.

The TFEQ-13 (Polish adaptation [38]), is free use questionnaire consisting of 13 questions, on the other hand, made it possible to learn about three behaviors concerning food restriction, lack of control over eating and, eating under the influence of emotions. The TFEQ-13 questionnaire has standardized responses on a 4-point scale, where each response is scored accordingly. For 'definitely yes' responses - 3 points, 'rather yes' - 2 points, 'rather no' - 1 point, 'definitely not' - 0 points. The higher the score for a given behavior, the higher the risk of its severity. Two scoring ranges were used to analyze the results, which were developed on the basis of the sum of the scores of the given behaviors. The first scoring scale was for the category questions: restricting eating and lack of control over eating, while the second scoring division was for eating under the influence of emotions. The reliability of the scale was assessed at the level of  $\alpha=0.78$ .

**Table 1.** Interpretation of results in the TFEQ-13 questionnaire.

<b>Restricting food and lack of food control</b>		
<b>Scale</b>		<b>Level of severity</b>
0-5 points		Low risk
6-10 points		Moderate risk
11-15 points		High risk
<b>Eating under the influence of emotions</b>		
<b>Scale</b>		<b>Level of severity</b>
0-3 points		Low risk
4-6 points		Moderate risk
7-9 points		High risk

The level of motivation to lose weight was measured according to the scale of 1 to 10, indicates how motivated is to undertake weight reduction. A 1 indicates a complete lack of motivation, while a 10 indicates the highest possible level of motivation for weight reduction. The test measures general motivation (without taking into account internal and external factors), and refers only to the desire to reduce weight. The measurement was made twice - before and after the last weight-loss attempt. The reliability of the scale was assessed at the level of  $\alpha=0.82$ .

The BMI value was obtained from data provided by female respondents in the questionnaire. In order to avoid falsification, the question about weight and height was asked twice - once at the beginning of the questionnaire, respondents were asked to enter their current weight in kilograms and height in centimeters in the blanks, and the second time at the end of the questionnaire, respondents were asked to provide their current ratios using a pull-down list. The BMI of the female subjects was assessed according to the formula:  $BMI = \text{body weight (kg)}/\text{height (m)}^2$ . Ranges were used in interpreting the result according to WHO data: A healthy adult with a normal weight-to-height ratio has an index in the range of 18.5-24.9. A BMI below 18.5 indicates being underweight. People with a BMI of 25.0-29.9 are overweight. A BMI ratio above 30.0 is already obesity.

## 2.3. Statistical compilation

The data obtained were processed using Microsoft Excel and Statistica 13. The Kruskal-Wallis H tests (the non-parametric equivalent of one-way ANOVA) were used to determine statistical relationships. A probability level of  $p=0.05$  was used for all variables.

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### 3. Results

A total of 600 women took part in the survey. The largest number of respondents was between the ages of 18 and 30 - 375 people. There were 225 people between the ages of 26 and 40. Based on the height and weight of the respondents, BMI was calculated. According to the results, 315 people (53%) had a normal body weight. 165 people (28%) were overweight, 81 people (14%) were graded I obese, 18 people (3%) were grade II obese, 12 people (2%) were grade III obese and 9 people (2%) were underweight.

Respondents were asked about their level of education. The vast majority of people had higher education - 309 people (52%). Secondary education was possessed by - 167 people (45%), vocational education by 18 people (3%), and primary education by 6 people (1%). The respondents were also asked about the type of work they did. According to the results collected, a significant number of people had sedentary jobs - 366 people (61%), while 177 people (30%) performed physical labor. The rest of the respondents, i.e. 57 people (10%), did not do any work in their lives.

When asked how many times respondents had attempted to lose weight during their lives, the largest number of respondents said they couldn't even count them - 182 people (31%). Three attempts were made by 136 people (23%), and two attempts by 158 people (26%). In one attempt at weight loss 124 people (20%).

In the question 'What did the weight-loss attempt consist of?' respondents mostly indicated that it was based on increasing current physical activity - 420 responses (70% relative to all responses obtained). Attempts at weight loss were based on lowering the caloric content of meals in 402 people (67%), correcting current eating habits in 339 people (57%), introducing a diet to aid weight loss in 171 people (29%), and introducing medications or supplements to accelerate weight loss in 115 people (just under 19%). According to the results, respondents in the smallest number chose to completely restrict their food intake, the so-called 'starvation' - 99 people (more than 17%). When selecting the answer 'introduction of a diet', the respondents were asked to specify which lifestyle model they followed. The most popular was the introduction of a ketogenic diet - in 51 people (9% relative to all responses). Diets based on abnormal dietary principles (restrictive diets) were accompanied by 27 people (5%). The Dukan diet was followed by 18 people (3%), the cabbage diet, and the Dabrowski diet by 12 people each (2%). Diets such as paleo, intermittent fasting, apple diet, and FODMAP received the same number of responses each, with 6 people (1%) following each of these diets. The least practiced diet was the Kwasniewski diet - 3 people (less than 1%). A diet that was based on healthy and correct principles was implemented in 15 people (3%).

The duration of the diet to reduce weight in most people was more than two months and longer - 252 people (42%). Less than a month in 105 people - 18%. Longer than a month and about two months obtained the same value - 96 people each (16%). Attempted weight loss in 27 people (5%) lasted two weeks, while in 24 people (4%) it lasted one week. When asked whether respondents were satisfied with their current weight, 348 people (58%) said they were not. Satisfied with their previous body weight was 183 or 31%. The rest of the respondents - 69 people (12%) had no opinion. The Internet, television, and the press proved to be the most frequently chosen source for providing the necessary information in the process of weight reduction, as it gained 444 responses (74%). Advice from doctors or dietitians accounted for 225 responses (38%), while advice from friends accounted for 180 responses (30%), other sources that were not given in the questionnaire - 27 responses (5%). When marking the answer 'other' in the previous question, respondents specified that they gained knowledge on weight reduction relying on their own experience - 15 responses (3%). Books gained 6 responses (1%), diet studies - 3 responses (less than 1%) and a personal trainer - 3 responses (less than 1%).

The respondents were asked to indicate on a scale of 1 (low) to 10 (high) the level of motivation before and during the weight loss attempt. The average of the responses obtained before weight loss was 6.37, while during weight loss it was 5.91. It can be seen that motivation tended to decrease with the weight loss process. The period before and during the weight-loss attempt showed no significant differences in relation to poorer well-being. Regardless of the period of weight loss - the results were at a similar level. Worse well-being was not likely to be experienced by 255 people (43%) before the weight-loss attempt, while it was experienced by 261 people (44%) during weight-loss. 'Definitely not' before trying to lose weight was indicated by 78 people (13%), and during weight loss by 66 people (11%). The answer 'Rather yes' before and during the trial by 132 people (22% each), and 'Definitely yes' before the trial by 54 people (9%) and during by 57 people (10%). In contrast, 'I don't know' before the trial was indicated by 81 people (14%) and during by 84 people (more than 14%).

The biggest factor that motivated respondents to attempt dieting was lack of self-acceptance - it gained 411 responses (69%). The next motivation was feeling unwell - 291 responses (49%), the desire for a change in life - 270 responses (45%), changing current eating habits - 159 responses (27%), and the diagnosis of a disease and the

occurrence of health problems along with the influence of others to change each gained the same number of responses - 84 (14%). Other motivations included the following trends - 45 responses (8%), difficulties with basic life activities due to excessive weight - 39 responses (7%), and other - 6 responses (1%), including an important circumstance and the desire to test the diet.

In contrast, the greatest expectation after weight loss was satisfaction with one's external appearance - 483 responses (81%), followed by improved well-being - 324 responses (54%), increased self-confidence - 318 responses (53%), getting rid of complexes - 237 responses (40%), strengthening of mental strength - 102 responses (17%), improvement of strong willpower - 99 responses (17%) and others - 15 responses (3%), which included the absence of health complaints, achieving better sports results, proving surrounding determination and maintaining current weight.

The amount of weight lost among respondents was divided into 9 weight categories. The largest number of people reduced weight from 6 kg to 10 kg - 171 people (29%). This was followed by 3 to 5 kg - 162 people (27%), 11 to 15 kg - 90 people (15%), 21 to 30 kg - 60 people (10%), 0 to 2 kg - 57 people (10%), 16 to 20 kg - 39 people (7%), 30 to 40 kg - 12 people (2%) and over 40 kg - 3 people (less than 1%). The answer 'I don't know' was answered by 1 person representing 1% relative to all respondents. The average amount of weight lost was rounded up to 1.5 kg.

A failed weight loss attempt for more respondents resulted in total surrender or frustration - 216 responses (just under 36%), followed by the search for another alternative diet - 180 responses (28%). Slightly fewer voters went to final self-acceptance, with 105 responses (18%), and escape from daily life, with 75 responses (13%). Failure to fail gained 30 rests or more than 5%. After completing the weight reduction process, mood improved in 369 people (60%) and worsened in 45 people - 8%. The mental state did not change in 186 people (31%).

Based on the results from the TFEQ-13 questionnaire in terms of food restriction, it was found that a low risk of severity was diagnosed in 273 people (46%), and moderate in 267 people (44%), and low in 60 people (10%). The highest score for this subscale reached 15 points.

Another breakdown of questions in the TFEQ-13 questionnaire concerning lack of control over eating. A low risk of occurrence of the studied behavior was observed in 93 people (15.5%), moderate in 411 people (68.5%), and high in 96 people (16%). When assessing eating under the influence of emotions, 303 people (50.5%) had the highest risk of occurrence of the studied phenomenon, moderate risk 219 people (36.5%), and low risk 78 people (13%). The highest score obtained in a given subscale was 9 points.

The analysis of the relationship between weight-loss attempts and the state of well-being after the weight-loss attempt was statistically significant ( $H=9.713$ ;  $r=0.653$ ;  $p=0.003$ ). It was observed that the state of well-being improved in the majority of respondents who attempted to reduce weight a smaller number of times (Table 2).

**Table 2.** Comparison of the state of well-being after a completed weight loss attempt with the number of weight loss attempts (N=600).

Trials	State of well-being			p-value
	No change	Improved	Deteriorated	
One	24	90	10	0.0003
Two	30	97	9	
Three	42	105	11	
More	90	80	12	
N	186	372	42	
%	31	62	7	

The analysis of the relationship between age and state of well-being after the completed weight reduction trial was statistically significant ( $H=13.112$ ;  $r=0.524$ ;  $p=0.001$ ). It was observed that the state of well-being improved in most of the respondents in the younger age groups (Table 3).

**Table 3.** Comparison of the state of well-being after the completed weight reduction trial with the age of respondents (N=600).

Age	State of well-being			p-value
	No change	Improved	Deteriorated	
18-30 years	105	246	24	0.0001
31-40 years	81	126	18	
N	186	372	42	
%	31	62	7	

The relationship between the state of well-being after the completed weight-loss attempt and the obtained results of the TFEQ-13 questionnaire subscale on food restriction was investigated. Regardless of the severity of the studied behavior, self-concept improved in the majority of respondents ( $H=11.231$ ;  $r=0.621$ ;  $p=0.002$ ) - Table 4.

**Table 4.** Comparison of the state of well-being after the completed weight reduction trial with the results of the TFEQ-13 questionnaire on the food restriction subscale (N=600).

Severity level	Limiting food		N	%	p-value
	Well-being condition				
Low	No change		99	15	0.002
	Improved		144	24	
	Deteriorated		24	4	
Moderate	No change		78	13	
	Improved		189	31	
	Deteriorated		6	1	
High	No change		9	2	
	Improved		39	7	
	Deteriorated		12	2	

In the next assumption, the state of well-being after the completed weight-loss attempt was evaluated with the obtained results of the TFEQ-13 questionnaire subscale of lack of control over eating. According to the results obtained, the state of well-being improved in the majority of respondents, regardless of the severity of the phenomenon studied ( $H=12.872$ ;  $r=0.699$ ;  $p=0.001$ ) - Table 5.

**Table 5.** Comparison of the state of well-being after the completed weight reduction trial with the results of the TFEQ-13 questionnaire on the subscale of lack of control over eating (N=600).

Severity level	Lack of control over eating		N	%	p-value
	Well-being condition				
Low	No change		129	22	0.001
	Improved		252	40	
	Deteriorated		30	5	
Moderate	No change		27	5	
	Improved		60	10	
	Deteriorated		9	2	
High	No change		30	5	
	Improved		60	10	
	Deteriorated		3	<1	

Comparing the respondents' state of well-being after the completed weight loss attempt with the obtained results of the TFEQ-13 questionnaire subscale of eating under the influence of emotions, it was observed in more respondents that their well-being changed for the better. This result depends on the severity of the phenomenon studied - in women whose risk of eating under the influence of emotions is low or moderate self-feeling improved ( $H=11.468$ ;  $r=0.539$ ;  $p=0.002$ ) - Table 6.

**Table 6.** Comparison of the state of well-being after the completed weight reduction trial with the results of the TFEQ-13 questionnaire on the subscale of eating under the influence of emotions (N=600).

Severity level	Eating under the influence of emotions		N	%	<i>p-value</i>
	Well-being condition				
Low	No change		66	11	0.002
	Improved		126	19	
	Deteriorated		27	5	
Moderate	No change		27	5	
	Improved		39	7	
	Deteriorated		12	2	
High	No change		93	16	
	Improved		3	<1	
	Deteriorated		207	35	

#### 4. Discussion

The results of a study conducted by Haggerty et al [17] found that among 490 respondents, as many as 64% believed that body weight affects human happiness. In our study, the respondents were asked whether their current body weight suits them in their daily lives. The results indicated that as many as 58% answered no, although most of the respondents had a BMI within the normal range. Thus, the results obtained are not in line with the results of a study conducted by Gajtkowska [18] among adolescents, among whom less than 50% were satisfied with their external appearance at the time. Similar results were presented by Romanowska-Tolloczko [19], who in a study of 250 girls observed negative attitudes toward their own appearance in only 25% of the respondents. The discrepancy in the cited data may be due to changing trends over the years and a change in the mindset among people toward the self-acceptance of their own bodies. There is a particularly strong emphasis on physical appearance these days, with more and more people comparing themselves to others and wanting to strive for an idealized image of their own bodies.

Another study done on YouTube on internet weight reduction showed that out of 100 videos, only one was professional and contained reliable scientifically verified information. In contrast, the remaining materials, which mainly focused on workouts rather than the importance of maintaining a balanced diet as a lifestyle, were not scientifically validated but received a very large viewership of viewers (more than 400 million views) [20]. In the present study, respondents confessed that their main source of deriving knowledge in the context of weight reduction was the internet, which, as it turns out, rarely contains truthful information, although back in 2013 it was the most popular form of information search [12]. Data indicate that in recent years, as many as one in four residents of the European Union searched for health information of interest on the Internet [21].

In our study, the main factors motivating the respondents to the notion of attempting to reduce weight appeared to be a lack of self-acceptance and a bad mood. These factors find confirmation in the studies of Gilmartin et al. [22] indicating that working on one's figure after significant weight loss appears to facilitate improvements in body image and well-being, as well as McCallum et al. [23], who noted similar motivations when actually applying for a commercial weight control program with a psychological basis. All the more so because among the many factors influencing physical activity, right next to the social, cultural, economic, or environmental spheres, are also psychological aspects [24]. Bauman and colleagues [25] indicated that physical activity can be enhanced by good emotional conditions or appropriate social conditions, such as in the home environment. For this reason, it is necessary to consider motivation to engage in physical activity in the broadest possible context, including across age groups, as confirmed by a study by León-Guereño and colleagues [26] noting the dominant role of motivation to reduce body weight through physical activity in seniors, which were not as strongly highlighted in earlier studies [27, 28]. In contrast, a study conducted by Ręgwelski et al. [29] and analyzing age and weight in the context of acceptance of one's body and motivation to reduce weight in Caucasian women identified low physical activity and irregular or large meals combined with eating unhealthy foods as causes of excessive weight, which is also supported by our study. When comparing the results obtained with patients with atrial fibrillation and those who were overweight, health reasons appeared to be the main reason motivating them to lose weight [30]. Admittedly, in the studies we carried out, the respondents were not asked to specify their health status, so after analyzing the results, one can only assume that only some of the respondents had medical conditions, as only about 6% of the respondents gave such an



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answer. It may be that for some people, the presence of disease entities did not equate to the need to reduce weight to improve current health, and thus did not constitute a motivating factor [31].

In another study conducted by Klósek [10], the greatest motivation for weight reduction was the desire to improve one's outward appearance and the desire to improve one's current state of health, while improving one's well-being did not significantly influence one's attempt to lose weight. Interestingly, in the study in question, the authors examined people's motivation with the number of weight reduction attempts they had made in the past, and those with experience with reduction were characterized by greater hope for the success of the effectiveness of the process than those making their first attempt. The same results were also presented in a study on women's motivation to undertake weight-loss therapy, conducted by Hawryłkiewicz [9]. Morawska and colleagues [32] showed that in the group over 45 years of age, health status is the biggest motivating factor. On the other hand, Delesie et al. [30] showed that people suffering from cardiovascular disease, obesity or overweight undertake weight loss attempts to improve their current health status, while lack of self-acceptance or dissatisfaction with their figure is an additional aspect to further motivate them to make the attempt.

Emotionally driven food consumption was not demonstrated among the subjects, as the risk was determined to be low in the majority. Kozłowska et al [33], however, observed that feelings of boredom increase appetite in 56% of women and 66% of men. Lack of control over eating ranked at a moderate level in most of the participants in this study. In a study by Stetkiewicz-Lewandowicz et al [6], it was observed that those with excessive body weight showed a greater lack of control over food intake than those with deficient or normal body weight. In the case of food restriction, the opposite trend was noted - those with excessive body weight restricted food more than those with normal body weight. The results can be compared with a study by Sekula et al [34], in which 37 respondents were analyzed for specific eating behaviors. Consciously restricting food was as high as about 44% of the respondents, while those consuming excessive amounts of food were close to 60%. Interestingly, as many as 71% admitted that their eating behavior was dependent on their current mood.

The use of restrictive diets, which respondents say enable weight loss, is a concern. Some people responded that their attempt to lose weight consisted of introducing a specific dietary model into their daily lives. The most popular was the ketogenic diet. To a lesser extent, irrational low-calorie diets, such as the Dukan diet, the Kopenhaska diet, and even the 'apple' diet, were chosen. A balanced low-calorie diet, which should be crucial for weight reduction, was followed by a small number of subjects. In the study among middle school and college girls, the results were the opposite, as the vast majority of people chose rational diets. When irrational diets were used, it consisted of limiting the number of meals [12, 35]. It is worth noting that diets other than the low-energy diet do not show the effectiveness of the described process, moreover, an individual diet tailored to the needs of the person determines the maintenance of the desired body weight for a much longer period of time than irrational diets [36]. Nowadays, the ketogenic diet is quite popular among the methods of choice for weight reduction. It should be noted that the use of such a dietary model is still a matter of debate and requires further research [35]. Among the study group, in addition to the introduction of the diet, the weight loss attempt also involved increasing daily physical activity and improving eating habits. The introduction of measures in the form of medications or supplements to aid the weight loss process and the use of starvation did not get significantly much response. On the other hand, a study by Kryśka [37] among Upper Silesian female students observed a higher frequency of choosing dietary supplements to aid weight loss than undertaking any physical activity to aid weight loss.

In the present study, respondents were asked what changes or activities they observed after a failed weight-loss attempt. Among the majority of respondents, there was either complete surrender or a search for another alternative method to reduce weight again. In another study conducted on a sample of 100 women, it was observed that 78% of the weight loss attempt was successful, while the rest of the subjects returned to their initial weight - the so-called yo-yo effect. Such a fact caused the women to admit that due to their failure, they began to consider the option of attempting to lose pounds once again. A large number of women lost faith in their abilities by giving up and accepting their current appearance [1, 9].

Studies have shown that the state of well-being after the completed weight-loss attempt in a large number of people improved, despite the fact that the vast majority of people experienced negative emotions [39]. According to an analysis by Klósek [1], the women observed a significant improvement in self-confidence after the weight-loss process was completed, as well as perceiving their own bodies as more attractive. Among another group of women surveyed, supposing that the weight-loss attempt would be successful, the greatest hope was to get rid of complexes and increase current self-confidence [10]. Interestingly, the women almost unanimously agreed with the belief that a

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slim figure could have a major impact on success in their careers and personal lives. Among women who experienced weight loss, their current state of self-esteem improved through a more positive outlook on the world [9]. The biggest motivating factor among those who wanted to reduce weight was a lack of self-acceptance and unfulfilling current body weight in daily life.

## 5. Strengths and Study Limitations

An important strength of the ongoing study is its use of standardized questionnaires to estimate motivation and the likelihood of uncontrolled food intake. In addition, 600 women participated in the study, which undeniably represents a representative group studied in this type of project. Nonetheless, the authors note that in a continuation of the study, it would be appropriate to use more specific questions and to expand the investigation to include a group of men, in order to make intergroup comparisons and show possible gender correlations. A clear limitation of the study is also the use of an indirect survey method with computer support. Internet forms, despite their popularity in the scientific world, are still subject to a high risk of bias, so the authors of the study made every effort to use available safeguards to minimize the risk of bias. An additional limitation of the research conducted, which is due to the method by which the research was conducted, is the reporting of the data on which the BMI was calculated. As described above, the authors tried to introduce a method in the questionnaire to prevent the falsification of data, but they also see the need to conduct similar studies using a body composition analyzer.

## 6. Conclusions

In the study group, the most important motivators for change were low self-esteem and poor well-being. The level of motivation significantly decreased during the weight-loss attempt. No significant deterioration in well-being was observed before and during the weight loss attempt. Improved well-being after a completed weight-loss attempt had no significant effect on the severity of uncontrolled eating, except for emotional eating - in women at low or moderate risk of this phenomenon, weight-loss-related well-being improved.

In summary, it is not possible to determine conclusively what effect unsuccessful weight-loss attempts have on the well-being of weight-loss sufferers. However, it is worth noting that incorrectly conducted weight reduction (without the control of a specialist) can lead to the development of mechanisms that can eventually lead to eating disorders. Therefore, any attempt at weight loss should be consulted with a doctor or nutritionist.

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