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SOCIAL PERCEPTION OF PHARMACOLOGICAL OBESITY TREATMENT IN THE ERA OF INCRETIN THERAPIES: AN ANALYSIS OF STIGMA IN MEDICAL AND NON-MEDICAL POPULATIONS

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ABSTRACT

Background: According to evidence-based medicine (EBM) guidelines, obesity is a chronic and progressive disease with a multifactorial etiology. The aim of this study was to evaluate the scale of social stigma surrounding obesity and the perception of modern pharmacological treatment (including GLP-1 receptor agonists), with particular emphasis on the differences between medical professionals and the non-medical population.

Methods: A cross-sectional study was conducted using a proprietary online survey questionnaire (CAWI). The study group consisted of 158 respondents, divided into a medical subgroup (N=65) and a non-medical subgroup (N=93). Statistical analysis was performed using the chi-square test of independence, with the significance level set at $p < 0.05$.

Results: Over half of the respondents (60.1%; $n=95$) attributed the pathogenesis of obesity to a "lack of willpower and laziness." Nearly half of the surveyed individuals (49.4%; $n=78$) considered the implementation of pharmacotherapy as taking the "easy way out," which confirms the presence of the effort-based sanctions mechanism. Medical professionals were significantly more likely to define obesity as a chronic disease compared to the non-medical group (70.8% vs. 50.5%; $p < 0.001$); however, nearly 30% of them did not express full support for this clinical definition. The medical group also demonstrated significantly greater skepticism regarding the harmful pressure caused by the media popularity of incretin drugs ($p = 0.001$).

Conclusions: The study confirms the widespread nature of the so-called double stigma against patients with obesity. Persisting biases, also within the medical community, indicate deficits in health education. Destigmatization and guideline-based education are crucial for the effective implementation of modern pharmacotherapy in everyday clinical practice.

KEYWORDS

Obesity, Weight Bias, GLP-1 Receptor Agonists, Evidence-based Medicine, Social Attitudes, Effort-based Sanctions.

CITATION

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Introduction

Obesity is a chronic, progressive, and relapsing disease that currently constitutes one of the greatest global public health challenges. According to the latest international clinical guidelines, including the consensus of the European Association for the Study of Obesity (EASO) and the World Obesity Federation (WOF), which are strictly reflected in national standards, such as the guidelines of the Polish Society for the Treatment of Obesity (PTLO), a fundamental pillar of obesity treatment, alongside lifestyle modifications, is targeted pharmacotherapy [1]. The introduction of glucagon-like peptide-1 (GLP-1) receptor agonists, such as semaglutide and liraglutide, as well as dual agonists (tirzepatide), into medical practice has revolutionized therapeutic algorithms, enabling significant and sustained weight loss alongside improvements in cardiometabolic parameters [2,3].

Despite the indisputable scientific evidence (EBM) confirming the efficacy and safety of these drugs, the pharmacological treatment of obesity encounters significant social resistance stemming from deeply rooted biases. Obesity remains one of the most stigmatized disease entities in society, even among healthcare professionals [4]. An erroneous, yet still widespread narrative reduces the pathogenesis of this disease to a mere "lack of willpower" or "laziness," completely disregarding its multifactorial and neurohormonal background [5].

Consequently, patients treated pharmacologically experience the paradoxical phenomenon of so-called double stigma. Recent studies indicate that the use of anti-obesity medications (AOMs) is sometimes perceived by the public as taking the "easy way out" [6]. Society exhibits a tendency to morally devalue weight loss achieved with the assistance of pharmacotherapy compared to that attained solely through caloric restriction and physical exercise.

This situation is further complicated by media phenomena. The explosive popularity of drugs such as Ozempic on social media platforms (particularly TikTok), where they are frequently promoted as rapid weight-loss solutions for individuals without clinical indications, has led to a distortion of the medical image of these therapies [7]. This results in the trivialization of obesity pharmacotherapy, framing it as an aesthetic intervention rather than a medical one, which may influence the attitudes of patients as well as healthcare professionals themselves [8].

Given the above, the aim of this study is to evaluate public opinion and investigate the phenomenon of stigmatization surrounding the pharmacological treatment of obesity, with particular emphasis on the differences in perception between medical students (future healthcare professionals) and the non-medical population.

Methodology

Study Design

The study was designed as an observational cross-sectional study aimed at evaluating public opinion and analyzing the phenomenon of stigmatization regarding the pharmacological treatment of obesity, with particular emphasis on the use of GLP-1 receptor agonists. The study architecture was fully developed in accordance with the international reporting standards for observational studies established by the STROBE guidelines, ensuring the appropriate methodological rigor of the entire project.

Data Collection

The collection of empirical data was carried out using an original online questionnaire, distributed using the CAWI (Computer-Assisted Web Interview) methodology via the Google Forms platform. The distribution of the survey was purposive and based on snowball sampling. The inclusion criteria for the study were being at least 18 years of age and providing informed consent to participate after being acquainted with the scientific aim of the project. The collected sample comprised 158 respondents. To fulfill the main research objective consisting of a comparative analysis, the participants were classified into two groups: a medical group, comprising individuals studying and working in the healthcare sector, and a non-medical group, encompassing the remaining respondents. Any non-standard declarations in the section regarding occupation were recoded during the database preparation stage and included in a collective category of individuals professionally active in non-medical sectors, which allowed for maintaining a clear dichotomous division.

Research Instrument

The research instrument used consisted of two integrated sections. The first section comprised sociodemographic characteristics, collecting data on sex, age group, educational and occupational status, history of weight loss attempts, and the subjective assessment of one's own body weight. To maintain scientific rigor and full compliance with current clinical guidelines regarding BMI classification, the respondents' declarations indicating mild overweight and overweight were aggregated during the analysis stage into a single medical variable defining overweight. The main part of the questionnaire measured respondents' attitudes using a five-point Likert scale. These statements evaluated the attribution of moral value to the effort invested in weight reduction and the social perception of modern incretin-based therapies.

Analysis Techniques

The statistical analysis of the collected data was performed using dedicated analytical software. Categorical and ordinal variables were presented as absolute frequencies (N) and percentages. The assessment of the significance of differences in the distributions of Likert scale responses between the medical and non-medical groups was conducted using the non-parametric Mann-Whitney U test. Associations between specific nominal variables were verified using the chi-square test of independence. The threshold for statistical significance throughout the study was set at a standard value of $p < 0.05$.

Ethical Considerations

The research procedure was conducted in full compliance with the ethical standards set forth in the Declaration of Helsinki. Given the fully anonymous and voluntary nature of the online survey, which required neither the collection of sensitive data nor any intervention in the participants' clinical processes, the study was exempt from the requirement to obtain formal approval from a bioethics committee.

Results

The conducted study allowed for a detailed assessment of social attitudes towards the pharmacological treatment of obesity, highlighting significant differences in the perception of this phenomenon between representatives of the medical community and the non-medical population. Despite established clinical knowledge defining obesity as a chronic, progressive disease whose treatment standards require the implementation of targeted pharmacotherapy (including GLP-1 receptor agonists), the analysis of the results confirms the persistence of deep-rooted biases. The collected empirical data illustrates the scale of the double stigma phenomenon and the effort-based sanctions mechanism, wherein medically justified therapies are often morally devalued compared to traditional, behavioral methods of weight reduction. Furthermore, the study sheds light on the negative impact of media messaging, which exacerbates social resistance through the trivialization of innovative medications. The identification of these phenomena and the understanding of discrepancies in the attitudes of future healthcare professionals and the general public constitute a crucial step toward the destigmatization of patients with obesity and the more effective implementation of modern clinical guidelines into everyday practice.

To evaluate the extent of obesity stigmatization, respondents were asked to state their level of agreement with a statement attributing the primary causes of this disease to a lack of willpower and laziness. The distribution of responses for the entire study population is presented in Figure 1.

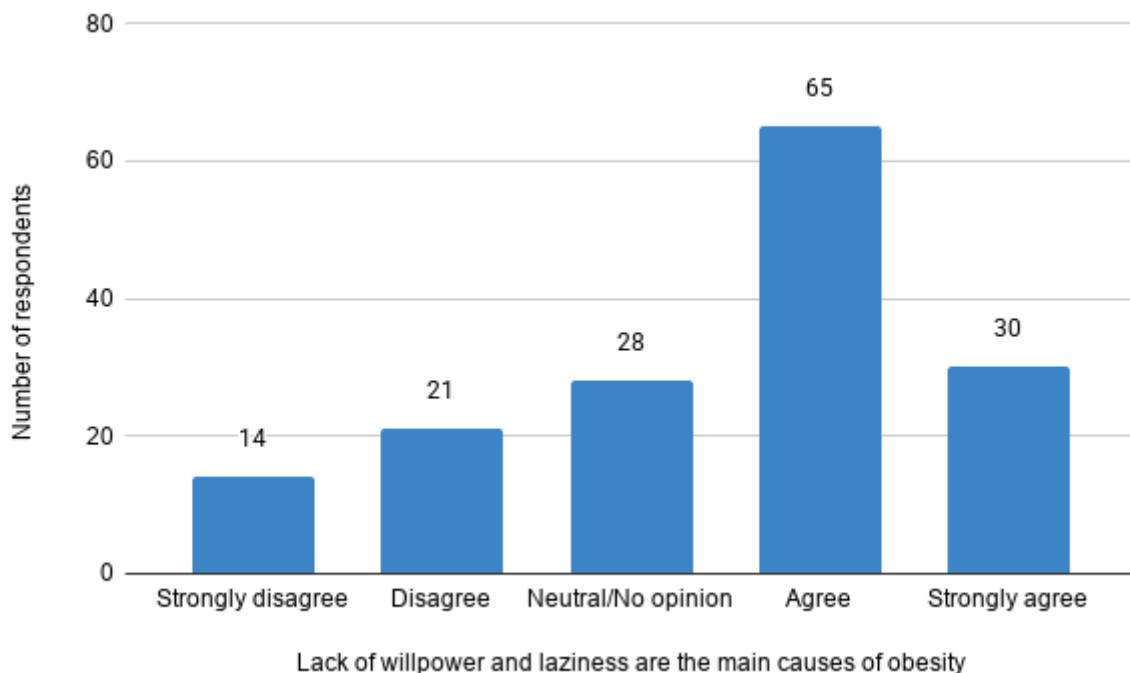


Fig. 1. Distribution of respondents' responses (N=158) to the statement evaluating the behavioral causes of obesity: "A lack of willpower and laziness are the primary causes of obesity."

As indicated by the collected data, more than half of the respondents (60.1%; n=95) attribute the development of obesity to moral and behavioral factors, expressing agreement with the presented statement. A mere 22.2% (n=35) of the participants rejected this stigmatizing stereotype, exhibiting an attitude consistent with current medical knowledge, which defines obesity as a multifactorial chronic disease. The persistence of such strong biases in the study sample provides a direct foundation for the effort-based sanctions phenomenon, wherein society expects the patient to manage the disease exclusively through intense effort.

The subsequent step in assessing patient stigmatization involved investigating the social perception of pharmacological treatment through the lens of valuing the invested effort. Respondents were asked to address a statement characterizing the use of anti-obesity medications as taking the "easy way out." The detailed distribution of responses is presented in Figure 2.

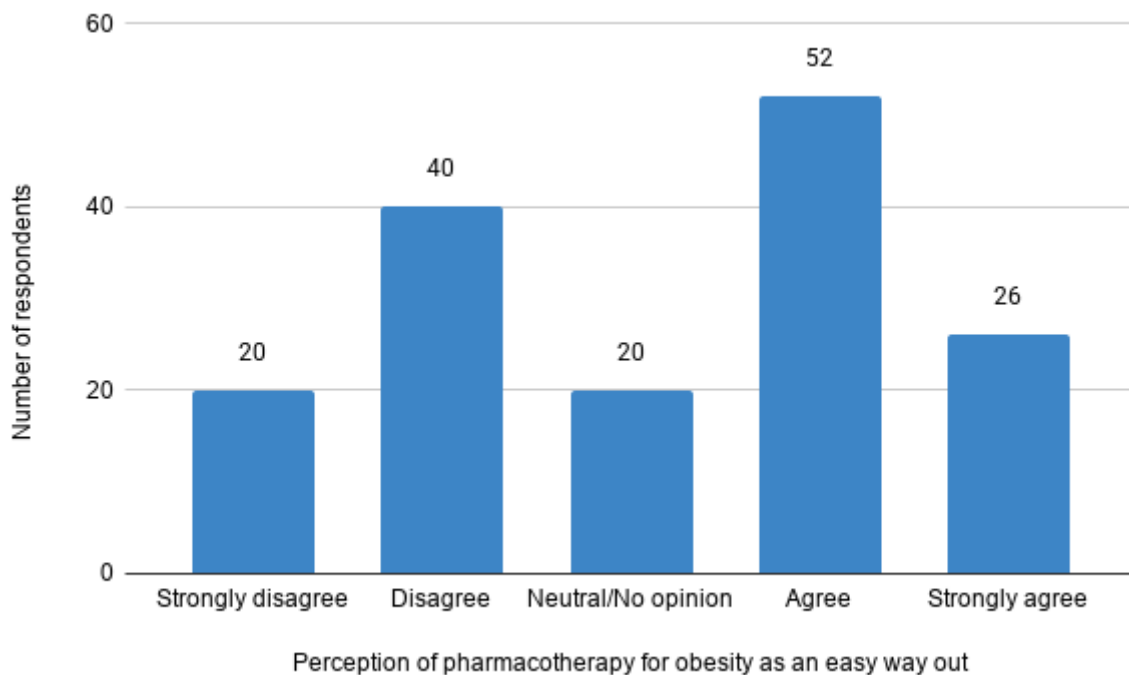


Fig. 2. Distribution of respondents' responses (N=158) to the statement evaluating obesity pharmacotherapy as taking the "easy way out".

The obtained data indicate that nearly half of the respondents (49.4%; n=78) express the belief that the initiation of pharmacological treatment constitutes taking the "easy way out" (of which 52 individuals selected "Agree," and 26 selected "Strongly agree"). An opposing attitude, devoid of the moral evaluation of medical therapy, was demonstrated by 38.0% of the participants (n=60), while 12.7% of the respondents (n=20) took a neutral stance. Despite unequivocal clinical recommendations indicating the necessity of employing pharmacotherapy (including GLP-1 receptor agonists) as a fundamental pillar of obesity treatment, a significant portion of society continues to exhibit a tendency to morally devalue weight reduction achieved through medical means. This phenomenon directly contributes to the exacerbation of the double stigma faced by patients, impeding them from pursuing therapies based on evidence-based medicine.

The next stage of the analysis was to evaluate the perception of obesity as a chronic disease, which constitutes a fundamental premise of contemporary clinical guidelines (including those of the EASO and WOF). To verify whether educational and occupational status differentiates this perception, the responses of representatives from the medical and non-medical groups were compared. The results for both subpopulations are presented in Figure 3.

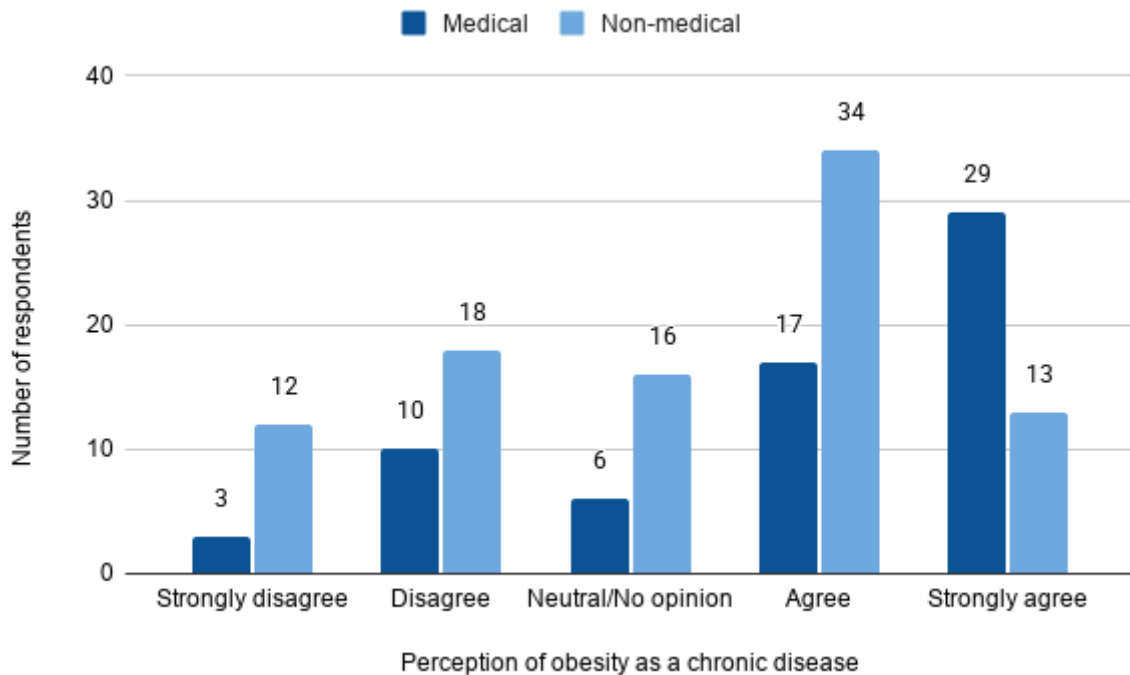


Fig. 3. Distribution of respondents' responses, stratified by educational and occupational status (medical group $N=65$ vs. non-medical group $N=93$), to the statement regarding the perception of obesity as a chronic disease.

The analysis of the response distribution reveals a clear polarization of views between the studied groups. Among the representatives of the medical community, the vast majority (70.8%; $n=46$) exhibit an attitude consistent with current medical standards, agreeing ($n=17$) or strongly agreeing ($n=29$) that obesity is a chronic disease. This percentage is noticeably lower in the non-medical population, where only half of the respondents (50.5%; $n=47$, including 34 "Agree" responses and a mere 13 "Strongly agree") identify with this statement. Differing attitudes were also observed at the opposite end of the scale. Rejection of the definition of obesity as a disease was declared by 32.3% ($n=30$) of the non-medical group representatives, compared to 20.0% ($n=13$) in the medical group.

The chi-square test confirmed a highly significant difference between the groups ($\chi^2=19.65$; $p<0.001$). Medical education determines the perception of obesity in accordance with clinical guidelines. However, the lack of full support for this definition among nearly 30% of medical professionals indicates an urgent need for further education within the healthcare system itself.

The final element of the analysis was to examine the social perception of the media popularity of anti-obesity medications (e.g., such as Ozempic) and to evaluate whether this phenomenon induces a harmful pressure for weight loss. The distribution of responses, stratified by the medical and non-medical groups, is presented in Figure 4.

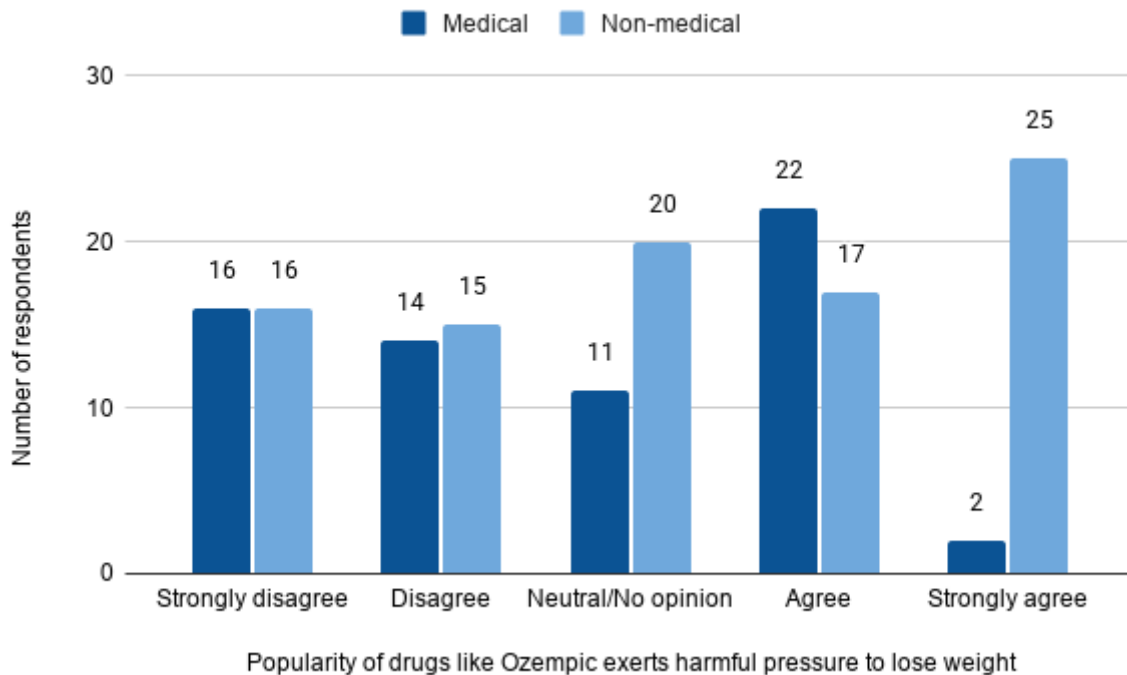


Fig. 4. Distribution of respondents' responses, stratified by educational and occupational status (medical group N=65 vs. non-medical group N=93), to the statement regarding the harmful pressure induced by the popularity of medications such as Ozempic.

The analysis of the collected empirical data reveals significant differences in the perception of this phenomenon between the two groups. The conducted chi-square test of independence confirmed a highly statistically significant difference in the distribution of responses ($\chi^2=18.50$; $p=0.001$). Summarizing the overall balance of responses, skeptical voices regarding the thesis of harmful pressure prevail in the medical group. A total of 46.2% of respondents ($n=30$) rejected this statement ("Strongly disagree" + "Disagree"), while an approving attitude was expressed by 36.9% ($n=24$). An opposite trend was observed in the non-medical population: affirmative responses prevail (45.2%; $n=42$), whereas a negative stance was taken by 33.3 % of the participants ($n=31$). This indicates that future and current healthcare professionals are less likely to perceive the popularity of incretin drugs as a harmfully pressuring factor, in contrast to the non-medical population, which more strongly perceives this negative, media-related dimension.

Discussion

The primary aim of this study was to evaluate the scale of stigmatization of patients with obesity and the social perception of modern pharmacotherapy (including GLP-1 receptor agonists), with particular emphasis on the differences in perception between the medical community and the non-medical population. The obtained results clearly indicate a deeply rooted problem of the so-called double stigma, which constitutes one of the main barriers to the effective implementation of evidence-based medicine guidelines into everyday clinical practice. According to the groundbreaking international consensus of 2020, the stigmatization of obesity is treated not only as an ethical issue but, above all, as medical malpractice, standing in stark contradiction to scientific knowledge [9].

The data collected in our study demonstrate that over 60% of the study population still attributes the pathogenesis of obesity to behavioral factors, such as a "lack of willpower" and "laziness." These results are consistent with global observations indicating the prevalence of weight bias, the destructive impact of which on public health has been proven in numerous studies [10]. Reducing the etiology of this disease to individual moral choices completely negates its complex neurohormonal, genetic, and environmental basis. According to the position of the World Obesity Federation [11] and the clinical recommendations of the Polish Society for the Treatment of Obesity [1], obesity is a chronic, progressive disease without a tendency for spontaneous resolution, requiring long-term medical treatment.

Our study highlights a phenomenon known in the literature as effort-based sanctions. Nearly half of the respondents (49.4%) considered the initiation of pharmacological treatment as taking the "easy way out." Similar observations were previously noted in the context of bariatric surgery, where medical interventions were morally devalued in favor of traditional lifestyle modifications, and patients were subjected to harsher social judgment if weight reduction occurred as a result of medical procedures [12]. Treating targeted pharmacotherapy as a method inferior to behavioral interventions is a cognitive bias. Clinical trials demonstrate the indisputable, breakthrough efficacy of GLP-1 analogues in reducing body weight and cardiovascular risk, making them a fundamental pillar of modern treatment [13].

A key finding of this study is the demonstration of statistically significant differences ($\chi^2=19.65$; $p<0.001$) in the perception of obesity between the medical and non-medical groups. The higher percentage of medical professionals defining obesity as a chronic disease (70.8%) reflects a better understanding of pathophysiology. Nevertheless, the fact that nearly 30% of the medical group did not express full support for this clinical definition is an alarming signal. It has been repeatedly demonstrated in the literature that both explicit and implicit weight biases are widespread among physicians and medical personnel [14]. This constitutes a direct cause of therapeutic inertia and a lower quality of medical care, resulting in patients avoiding healthcare visits [4]. The persistence of these attitudes within the medical group often stems from systemic deficits in undergraduate medical education programs, where obesity is still marginalized in the context of teaching about chronic diseases [15].

The final aspect addressed in the study is the impact of media on the perception of pharmacotherapy. The phenomenon of the rapid growth in popularity of GLP-1 analogues elicits polarized reactions, as confirmed by the chi-square test of independence ($\chi^2=18.50$; $p=0.001$). The non-medical population more strongly associates incretin drugs with harmful social pressure, which may be the result of their trivialization in social media, where they are portrayed through the lens of aesthetic medicine rather than life-saving pharmacotherapy. In turn, representatives of the medical group demonstrated significantly higher skepticism toward the thesis of harmful pressure (46.2% negative responses), suggesting that their evaluation is based to a much greater extent on the proven efficacy of these drugs and the EBM paradigm, separating media noise from real clinical benefits.

Study Limitations: This study is not without limitations. The cross-sectional design precludes drawing causal conclusions. Furthermore, sample selection ($N=158$) based on the snowball sampling method and the use of an online survey (CAWI) may have been susceptible to selection bias. Future research should be conducted on larger, representative population samples, taking into account additional demographic variables.

Conclusions

The conducted study highlights a significant public health problem, which is the deeply rooted stigmatization of obesity and its pharmacological treatment. Despite unambiguous clinical guidelines defining obesity as a chronic, progressive disease of multifactorial etiology, a damaging narrative that reduces the pathogenesis of this condition to behavioral deficits continues to dominate in the consciousness of the studied population.

The analysis revealed highly statistically significant differences in the perception of this phenomenon depending on the respondents' educational and occupational status. Representatives of the medical community are characterized by significantly higher awareness regarding the medicalization of obesity, more frequently classifying it as a disease entity and demonstrating greater skepticism toward the trivialization and media pressure associated with incretin drugs. In turn, the non-medical population shows a significantly higher susceptibility to negative phenomena related to social media trends, which intensifies resistance against modern therapies.

It must be emphasized, however, that the phenomenon of devaluing medical treatment, which consists of treating targeted pharmacotherapy as "taking the easy way out," applies significantly to both studied groups. A noticeable percentage of representatives from medical professions who do not fully identify with the clinical definition of obesity provides direct evidence of systemic deficiencies in undergraduate and postgraduate education.

These results clearly indicate an urgent need to intensify educational and anti-discrimination activities, strictly rooted in the paradigm of evidence-based medicine. The effective implementation of innovative obesity treatment algorithms, including the widespread use of GLP-1 receptor agonists, requires not only pharmacotherapy, but above all a holistic shift in social attitudes and the destigmatization of the patient within the healthcare system.

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