J. Fac. Pharm. Ankara / Ankara Ecz. Fak. Derg., 46(3): 955-966, 2022
Doi: 10.33483/jfpau.1147465

ORIGINAL ARTICLE / ÖZGÜN MAKALE

PERCEPTION OF COMMUNITY PHARMACIST TOWARD WEIGHT LOSS PRODUCTS: KAHRAMANMARAŞ CITY SAMPLE

TOPLUM ECZACILARININ KİLO VERME ÜRÜNLERİNE KARŞI ALGISI: KAHRAMANMARAŞ İLİ ÖRNEĞİ

Nilay AKSOY[1*], Nazlı Gül ERDOĞAN[1]

[1]Altinbaş University, Faculty of Pharmacy, Department of Clinical Pharmacy, 34147, Istanbul, Turkey

ABSTRACT

Objective: *The purpose of this study is to better understand the role of community pharmacists in obesity management by observing their knowledge of weight loss drugs, analyzing their attitudes and behaviors toward patients, and determining their transfer patterns to patients.*

Material and Method: *After ethical approval, a cross-sectional study was conducted using an online questionnere via a Google online form. The research population consists of community pharmacists working in the province of Kahramanmaraş. The questionnaire was designed to assess Community pharmacists' knowledge and attitudes toward weight loss products. The data was then analyzed using the SPSS for Windows 26.0 program (Statistical Package for Social Sciences).*

Result and Discussion: *Eighty-six percent of the pharmacists reported always/often counselling customers who request to buy products for weigh management on the safe and effective use of the product and 69.9% always/often check for drug or food interaction while dispensing weight loss products. The majority of Community pharmacists (72.8%) agreed that continuous education of the pharmacist should include weight management and training. Pharmacists surveyed have a moderate knowledge of weight loss products. Time, staff, budget were the barriers to offering pharmacy weight management services. Continuing education, supporting pharmacists with sufficient resources, and conducting more comprehensive research can play a critical role in the fight against obesity.*

Keywords: *Community pharmacists, knowledge, obesity, perception, weight loss*

ÖZ

Amaç: *Bu çalışmanın amacı, toplum eczacıların kilo verme ilaçları hakkındaki bilgilerini gözlemleyerek, hastalara yönelik tutum ve davranışlarını analiz ederek ve hastalara aktarım şekillerini belirleyerek obezite yönetimindeki rolünü daha iyi anlamaktır.*

* **Corresponding Author / Sorumlu Yazar:** Nilay Aksoy
e-mail / e-posta: nilay.aksoy@altinbas.edu.tr

Submitted / Gönderilme: 23.07.2022 **Accepted / Kabul:** 25.08.2022

Gereç ve Yöntem: *Etik onaydan sonra, çevrimiçi Google formu aracılığıyla bir anket uygulanarak kesitsel bir çalışma yapılmıştır. Araştırma Kahramanmaraş ilinde çalışan toplum eczacılar üzerinden yürütülmüştür. Anketler, toplum eczacıların zayıflama ürünlerine yönelik bilgi ve tutumlarını değerlendirmek için tasarlanmıştır. Veriler daha sonra Windows 26.0 için SPSS programı (Statistical Package for Social Sciences) kullanılarak analiz edilmilştir.*

Sonuçlar ve Tartışma: *Yüzde seksen altı, kilo yönetimi için ürün satın almak isteyen müşterilere ürünün güvenli ve etkili kullanımı konusunda her zaman/sıklıkla danışmanlık yaptığını ve %69,9'u zayıflama ürünlerini dağıtırken ilaç-gıda etkileşimini her zaman/sıklıkla kontrol ettiğini bildirdi. toplum Eczacıların çoğunluğu (%72,8) eczacının sürekli eğitiminin kilo yönetimi ve eğitimini içermesi gerektiği konusunda hemfikirdi. Ankete katılan eczacılar, kilo verme ürünleri hakkında orta düzeyde bilgiye sahipti. Zaman, personel ve bütçe kısıtlılığı, eczacıların kilo yönetimi hizmetleri sunmalarının önünde engeldir. Eczacıların mezun olduktan sonra kilo yönetimi konusunda eğitimlerinin devam etmesi, etkili kilo yönetimi hizmetleri sunmaları için yeterli kaynaklarla eczacıların desteklenmesi ve daha kapsamlı araştırmalar yapılması obezite ile mücadelede kritik rol oynayabilir.*

Anahtar kelimeler: *Algı, bilgi, kilo verme, obezite, toplum eczacıları*

INTRODUCTION

Obesity is defined as an abnormal accumulation of fat in the body caused by excessive energy intake. It is a chronic multifaceted disorder. Numerous morbidities are linked to obesity that are progressively affecting a larger population. Many illnesses, such as type 2 diabetes (DM), cardiovascular disease, depression, and several malignancies are all made more likely by obesity. Although the Body Mass Index (BMI) is the most used parameter in obesity classification [1], other parameters such as waist circumference and body fat may be required when diagnosing obesity. In recent years, three treatment models for obesity have been used: lifestyle modifications, pharmacological treatment, and bariatric surgery. If weight reduction through lifestyle modifications is only transitory or the required goal couldn't be achieved, pharmacological treatment is required. Lorcaserin, Orlistat, Phentermine/Topiramate, and Naltrexone/Bupropion combinations are the most commonly used drugs for pharmacological treatment. Additionally, several newer promising agents are currently being evaluated. Neuropeptide Y antagonists, cannabinoid type-1 receptor blockers, lipase inhibitors, glucagon-like peptide-1 (GLP-1) analogues (Liraglutide), leptin analogues, amylin analogues, and anti-obesity vaccinations [2]. The most common surgical procedures for bariatric surgery are sleeve gastrectomy, Roux-en-Y gastric bypass, adjustable gastric band, and biliopancreatic diversion. Over-the-counter weight loss products, dietary and herbal supplements are also popular among overweight and obese patients [3].

Liraglutide is a GLP-1 receptor agonist used in in the treatment of DM and obesity. Liraglutide stimulates insulin release while inhibiting glucagon secretion, slows gastric emptying, and increases satiety after a meal. Liraglutide 3.0 mg daily subcutaneous injection was recently authorized by the FDA for the treatment of obesity or overweight as well as comorbidities associated with obesity [4]. For the most part, greater liraglutide dosages are needed to treat type 2 diabetes [5].

A scoping review stated the critical role of community pharmacists in managing weight loss programs and treating obesity [6]. An Australian pilot study that examined the impact of a pharmacist-led, non-product-centered weight control program found improvements in outcomes like weight, BMI, and waist circumference after three months. Diet, exercise, and behavioral adjustment counseling were the main interventions [7]. Data from a weight-control program created by community pharmacists in the United Kingdom were retrospectively analyzed, and the results showed that the pharmacists' efforts resulted in significant weight loss and waist circumference reduction [8]. Gómez-Martinez et al. observed that the patient-oriented weight management approach had a positive effect on the improvement of all clinical and therapeutic outcomes in research to ascertain its effects in community pharmacies [9].

MATERIAL AND METHOD

A cross-sectional study was conducted using a questionnaire administered in a Google form and distributed online via WhatsApp or e-mail to all pharmacies in the Kahramanmaraş province in Turkey. The questionnaire is divided into five sections, each of which explores the sociodemographics variables of pharmacists' and pharmacy's patient population's, community pharmacists' opinions about their role in weight management, and pharmacy's patient population's sociodemographics., evaluation of community pharmacist knowledge, community pharmacists' current practices and attitudes toward weight management services and barriers to community pharmacists providing weight management services. The questionnaire items were gathered from medical literature, translated into Turkish by two academicians from the clinical pharmacy department who are native speakers, and then tested in a pilot study before being given to community pharmacists [10,11]. The Cronbach's alpha was greater than 0.6 for the translated questionner.

The study was approved by the Altinbas University ethical committee (No: 06, Date: 06.01.2022). The questionnaires were then distributed online to all pharmacists working in Kahramanmaraş pharmacies between 15.02.2022 to 09.03.2022. According to data acquired from the Turkish pharmacist association, Kahramanmaraş has 335 pharmacies with one pharmacist at least employed there. Other pharmacists who work in fields other than community pharmacy or who are unwilling to participate in the survey were barred from taking part.

The acquired data was analyzed using the Statistical Package for Social Sciences (SPSS, version 26). The characteristics of the individuals, as well as their views, habits, barriers, and knowledge, were summarized using frequencies and proportions.

RESULT AND DISCUSSION

103 community pharmacists took part in the study with a response rate of 31%, 57.3 % were female. It is not surprising that more female pharmacists than male pharmacists participated in our study, given that women outnumber men in the pharmacy workforce globally [12] and in Turkey, particularly in Kahramanmaraş. Ages 20 to 29 made up 62.1% of the participants. 19.4 % of the participants aged 30-39, 10.7% of those aged 40-49, and 7.9 % of those aged 50-59. The majority of community pharmacists, 61.2 % had 0-5 years of experience in community pharmacy, 18.4% had 6-10 years, 7.8% had 11-15 years, 6.8% had 16-25 years while 5.8% had 26 years or more experience. The most common age range of patients visited the pharmacy is young adults' range (20-29 years) (47.6%). 67% of participants reported often/sometimes to frequency of demand for weight loss products in their pharmacy, besides that the most common age range of customers that want to buy weight loss products from participants' pharmacy is young adults (89.3%). Demographic variables of the pharmacists and their patient population were listed in Table 1.

In our study, we found a promising higher percentage of pharmacists 69.9 % always/often evaluate the drug or food interaction while dispensing weight loss products, the majority of them were always/often asking the patients to eat low calorie diet, do more exercise, and consume more soluble fiber (63.1%), these rates were 77.6 % and 78.6 %, respectively in study conducted in Lebanon [10]. However, the majority of participants (65.7%) stated that they do not provide BMI calculations, Likewise, 40.7% and 72.1% of the pharmacists in Hijazi et al study and Almukdad study rarely or never measured patients BMI [10,11]. However, the pharmacists in other countries such as United Kingdom were highly participated in practices like calculation of BMI (67.4%) in their pharmacies [13].

In contrast to the Almukdad study, which found that only 34.9 % of the community pharmacists referred patients to other healthcare providers such as dieticians [11], referral to dieticians was common in our study (75.7 %). The majority of community pharmacists (62.1 %) said they often question patients about any adverse effects or unpleasant responses they may have experienced after using weight-loss drugs, and 51.4% said they regularly report any toxicity or negative consequences of these products. Data from the survey conducted in Lebanon, however, shows comparable results, with percentages of 66.8%, 73.6%, and 35.7%, respectively [10]. Almukdad et al mentioned that 56.9% of the pharmacists were counseling their patient regarding the adverse effects of weight loss products [11]. Overall, although the weight management practices performed by community pharmacists in Kahramanmaraş are somewhat in line with those of previous studies in Qatar, Lebanon, Scotland, Australia, and Kuwait and United Kingdom, improvements in these practices are needed [10,11-13-15]. Any pharmacist should not disregard patient counseling regarding the adverse effects of weight loss products because serious adverse effects that can accompany medication use or herbal medicine use can occur at any time [16,17].

Additionally, numerous studies suggest using other anthropometric measurements to categorize obesity, such as body fat and waist circumference, and encourage the pharmacists to use these measurements while providing weight-management treatments [18]. In our investigation, community pharmacists' existing practices for offering weight control treatments are shown in Table 2.

Table 1. Demographic variables of the pharmacists and their patient population

QUESTIONS	**n=103**	**%**
Gender of the pharmacists		
Female	59	57.3 %
Male	45	43.7%
Age of the pharmacists		
20-29 years old	64	62.1%
30-39 years old	20	19.4%
40-49 years old	11	10.7%
50-59 years old	8	7.8 %
Years of experience		
0-5 years old	63	61.2%
6-10 years old	19	18.4%
11-15 years old	8	7.8%
16-25 years old	7	6.8%
26 or more years old	6	5.8%
When you consider all the patients who apply to your pharmacy with or without a prescription, what is the most common age range for patients?		
Chidren	2	1.9%
Adults	49	47.6%
Middle Age (50-65)	33	32.0%
Elder (≥65)	17	16.5%
What is the frequency of demand for weight loss products in your pharmacy?		
Always	1	1.0%
Often	24	23.3%
Sometimes	45	43.7%
Rarely	30	29.1%
No	1	1.0%
What is the age range of patients who want to buy weight loss products from your pharmacy		
Chidren	2	1.9%
Adults	92	89.3%
Middle age (50-65)	7	6.8%
Elder (≥65)	0	0%
Do you give information to your patients who will use liraglutide about how to apply or how to store the drug?		
Always	45	43.7%
Often	18	17.5%
Sometimes	19	18.4%
Rarely	8	7.8%
No	5	4.9%

Table 2. Current practice of community pharmacists in providing weight management services.

QUESTIONS	n=103	%
Do you check for drug-drug interaction or food-drug interaction while dispensing weight loss products?		
Always	32	31.1
Often	40	38.8
Sometimes	20	19.4
Rarely	7	6.8
No	0	0
Dou you give nonpharmacological recommendations to your costumers such as following low calorie diet, increasing physical activities for weight loss?		
Always	33	32.0
Often	32	31.1
Sometimes	18	17.5
Rarely	9	8.7
No	7	6.8
Do you provide weight and height, waist circumference measurements for patients?		
Always	25	24.3
Often	21	20.4
Sometimes	18	17.5
Rarely	21	20.4
No	13	12.6
Do you provide BMI calculation for your patients?		
Always	15	14.6
Often	16	15.5
Sometimes	27	26.2
Rarely	24	23.3
No	17	16.5
Do you refer your patient to dieticians when needed?		
Always	21	20.4
Often	39	37.9
Sometimes	24	23.3
Rarely	12	11.7
No	4	3.9
Do you ask patients for any adverse effect or undesirable reaction after taking weight loss products?		
Always	31	30.1
Often	33	32.0
Sometimes	24	23.3
Rarely	10	9.7
No	2	1.9
Do you report any toxicity or adverse reaction of weight loss products?		
Always	23	22.3
Often	30	29.1
Sometimes	21	20.4
Rarely	20	19.4
No	5	4.9

Most of the community pharmacists in our study have a strong belief that they play an important role in the field of weight management (65%), ongoing education of pharmacists should incorporate exercise and weight management (72.8%), weight management products should be sold only in pharmacies (82.6%) likewise agreeing or highly agreeing that consumers misuse weight-loss medications. (74.7%). According to research done in Scotland, Australia, and Lebanon, participants clearly believed that pharmacists played a crucial role in weight control. This was confirmed by pharmacists' assessments of the provision of weight management services [7,10, 13,19].

Indeed, media and advertisements have both positive and negative effects on our lives. There is no doubt that if we can standardize and validate information related to drug products, including weight loss products, we will benefit greatly from media and advertisements. The Kahramanmaraş pharmacists agreed or strongly agreed that commercials and the media are doing a good job of teaching consumers about weight reduction products and weight control [10] only 48.9% of pharmacists agreed or strongly agreed with the benefit of media and advertisements. We can explain the pharmacists' disagreement in our study and the Lebanon study by stating that the pharmacists have doubts about the standardization and validation of information published in the media. Table 3 displays community pharmacists' opinions on their involvement in weight control.

When we assessed the community pharmacists' knowledge of weight loss products, we discovered that while more than half of them answered most of the questions correctly, there was still a significant number of them who had incorrect answers, but their percentage remained consistent with previous studies. For example, 68 % of participants in our study and 51% of participants in the Lebanon study correctly answered, 'once the weight loss goal is met, there is no risk in discontinuing treatment question. When comparing Kahramanmaraş community pharmacists and Lebanon community pharmacists, the correct answers were somewhat similar for other knowledge questions except for two questions, “consuming green tea can harm liver cells, and orlistat shouldn't be used by anyone with cardiovascular problems”, which were answered correctly in the rate of 83.5% and 72.8% of pharmacists in our study, while in Lebanon study, 17.3% and 54.6% respectively [10]. Table 4 rates the knowledge of weight control among neighborhood pharmacists.

In our study the barriers to provide weight management services in community pharmacies, as ranked by the participant pharmacists limited number of staff who provide weight management services (42,8%), limited budget (39.7%), limited time (38.7%), limited knowledge (35.7%), lack of interest (21.4%). Barriers to provide weight management services in community pharmacies in our study presented in Table 5.

Table 3. Community pharmacists' beliefs towards their role in weight management

QUESTIONS	**n=101**	**%**
Continuous education of the pharmacist should include weight management and training		
Strongly Agree	30	29.1
Agree	45	43.7
Neutral	22	21.4
Disagree	3	2.9
Strongly Disagree	0	0
Do you think the public is conscious about weight loss products?		
Strongly Agree	6	5.8
Agree	2	1.9
Neutral	8	7.8
Disagree	50	48.5
Strongly Disagree	34	33.0
Do you think pharmacists give enough information to patients about weight loss products?		
Strongly Agree	3	2.9
Agree	24	23.3
Neutral	45	43.7
Disagree	25	24.3
Strongly Disagree	2	1.9
Do you believe that pharmacists have a role to play in the field of weight management?		
Strongly Agree	17	16.5
Agree	50	48.5
Neutral	20	19.4
Disagree	10	9.7
Strongly Disagree	1	1.0
Do you think that weight loss products should be sold only in pharmacies?		
Strongly Agree	63	61.2
Agree	22	21.4
Neutral	11	10.7
Disagree	2	1.9
Strongly Disagree	1	1.0
Do you think that patients are abusing weight loss products		
Strongly Agree	37	35.9
Agree	40	38.8
Neutral	19	18.4
Disagree	3	2.9
Strongly Disagree	0	0
Do you think that companies marketing weight loss products are making false promises?		
Strongly Agree	43	41.7
Agree	31	30.1
Neutral	23	22.3
Disagree	1	1.0
Strongly Disagree	1	1.0

Table 3 (***continued***). Community pharmacists' beliefs towards their role in weight management

QUESTIONS	**n=101**	**%**
Do you think that media and advertisements are playing a positive role in educating patients towards weight loss products and weight management		
Strongly Agree	51	49.5
Agree	34	33.0
Neutral	13	12.6
Disagree	1	1.0
Strongly Disagree	0	0

Table 4. Evaluation of self-knowledge towards weight management among community pharmacists

Question	**True/False**	**% of correct answer**	**% of incorrect answer**
Once the weight loss goal is achieved, there is no risk in stopping the treatment.	F	68	28.6
Laxatives are considered a beneficial method for weight loss in people with obesity or overweight individuals.	F	78.6	16.5
Herbal Laxatives (like senna, cascara, v) are recommended for pregnant or breastfeeding women.	F	78.6	16.5
Consumption of green tea can cause toxicity in liver cells.	T	83.5	10.7
Chronic use of laxatives can increase the effect of diuretics, which causes fluid and electrolyte loss.	T	81.6	12.6
Orlistat is contraindicated in patients with cardiovascular disease.	T	72.8	20.4
Liraglutide can be used for weight loss in Type 1 Diabetes Mellitus patients.	F	60.2	34

Table 5. The challenges of community pharmacists in offering weight control treatments.

QUESTIONS	**n=98**	**%**
I don't have enough staff to provide weight management services	42	42.8
I don't have budget to provide weight management services	39	39.7
I don't have enough time to provide weight management services	38	38.7
I don't have enough knowledge to provide weight management services	35	35.7
I don't have the interest to provide weight management services	21	21.4
I don't have enough space to provide weight management services	0	0

The barrier that presented in Newlands et al study, include high workload (n = 77, 92.8%) and the need for further compensation (75.9%) and insufficient staff (59.7%) [13]. Infrastructure, time, and cost-effectiveness were determined to be the key obstacles preventing community pharmacists from participating in weight management services in another study [7]. The most anticipated barriers to obesity counseling in a study done in Kuwait were a lack of patient awareness about pharmacists'

expertise in counseling these types of products (76.2%), while the pharmacists' beliefs that obese patients lack willpower and are non-adherent to weight loss interventions (71.8%) [20]. Similary, Lack of time, excessive work demands, and a lack of advertising are obstacles to running a weight loss program in a community pharmacy in England, according to Peletidi and Kayyali [21]. Age, pharmacy type, highest level of education, and work status of Malaysian community pharmacists are sociodemographic and practice variables that have an impact on attitudes, practices, and perceived barriers related to weight management services [22]. Peletidi and Kayyali Although it is outside the scope of our study, it is important to note that numerous studies in the medical literature show the significant advantages of weight-loss programs managed by community pharmacists. With these programs, significant reductions in waist circumference, systolic and diastolic blood pressure, and lipid levels were seen [23,24].

Finally, we can conclude that the Kahramanmaraş community pharmacists polled have a basic understanding of weight loss products. Additionally, there were significant obstacles to Kahramanmaraş community pharmacists providing weight control treatments in terms of time, manpower, and money. Overall, the study's conclusions shed light on community pharmacists in Kahramanmaraş's attitudes, knowledge, and beliefs towards weight loss. Continuing education for pharmacists on weight management after graduation, providing pharmacists with adequate resources to provide effective weight management services, and conducting more comprehensive research on this topic can all help in the fight against obesity. The study's findings could be used to guide future evidence-based community pharmacist-led weight control services on a national and global scale.

AUTHOR CONTRIBUTIONS

Concept: *N.A*; Design: *N.A*; Control: *N.A, N.E*; Sources: *N.A, N.E*; Materials: *N.A, N.E*; Data Collection and / or Processing: *N.A, N.E*; Analysis and / or Interpretation: *N.A, N.E*; Literature Review: *N.A, N.E*; Manuscript Writing: *N.A*; Critical Review: *N.A, N.E*; Other: *N.A, N.E.*

CONFLICT OF INTEREST

The authors declare that there is no real, potential, or perceived conflict of interest for this article.

ETHICS COMMITTEE APPROVAL

The study was approved by the Altınbaş University ethical committee (No: 06, Date: 06.01.2022**).**

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