



## **WEIGHT MANAGEMENT IN COMMUNITY PHARMACY**

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### **ABSTRACT**

**Background:** Obesity is one of the risk factors of hyperlipidemia, coronary heart diseases, metabolic syndrome and also other diseases like hypertension, stroke, diabetes mellitus, osteoarthritis and so on.<sup>[8]</sup>

As first line health centers pharmacies and pharmacists are clinical professionals easily accessible by the community and pharmacists provide care and informs patients to increase their quality of life. In weight management, pharmacists have an important role in healthcare together with physicians and dieticians. Counterweight management program aims to encourage overweight patients to change their lifestyles via the pharmacies. The aim of our study was two folds. First to assess the knowledge of awareness of overweight patients on weight management programs in community pharmacy. Second to assesses the community pharmacists' approach in weight management.

**Methods:** Two questionnaires were developed for this purpose. The pilot tests were carried out and the Cronbach's Alpha number was determined.

**Results:** The results revealed that public's confidence to community pharmacists in weight management, effectiveness of this program on obesity management that is applied in pharmacies. The results have been also shown that this program is not applied in community pharmacies in Cyprus. 385 people in community and 100 community pharmacists attended in this study.

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### **INTRODUCTION**

Obesity or being overweight is a serious condition that occurs by abnormal accumulation of fat in the body and results in health impairments such as heart diseases, stroke, type 2 diabetes mellitus and high blood pressure (hypertension). There is a variety of risk factors for obesity including unhealthy diet, lack of exercise, genetics and psychological factors. Weight gaining has been shown to be a risk factor for some psychiatric disorders, such as depression, impaired body image, low self-esteem, eating disorders, stress and poor quality of life.<sup>[5]</sup>

Pharmacists are major healthcare providers in the community. they do not only adjust and manage the medications but also educate and help the populations. Pharmacists have a crucial role in weight management by helping their patients to modify their lifestyles and applying Counterweight Management Program<sup>[9]</sup> in community pharmacy. In Counterweight Management Program, pharmacists discuss weight management and give information on behavior change strategies with their patients. The program targets the individuals who have body mass index (BMI) value 30 and above who are at risk of developing chronic diseases.

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The goal of the program is to achieve and energy deficit of 500 to 600 kcal/day and the total time of the program is generally 12 months. The program aims to help patients to lose weight and improve overall health.<sup>[9]</sup> High blood pressure, high blood glucose levels can be managed by changing lifestyle, such as regularly practicing balanced diet and performing adequate physical activity.

Like in other countries, obesity is a critical condition in the developing other chronic diseases in Cyprus. As first line health centers community pharmacies and community pharmacists have ability to manage and prevent chronic diseases. For that reason, they should be part of the healthcare team in weight management. In Northern Cyprus, most of the community pharmacists know this program but they do not apply it.

Although, the Counterweight Management Program is not applied, the herbal products and medications for weight management and fat burning are used under the supervision of community pharmacists. Orlistat<sup>[16]</sup> and sibutramine<sup>[17]</sup> are used for weight management but in Northern Cyprus, only orlistat is available.

Also, natural products sold as supplements like CLA, curcumin, L-tyrosine, caffeine, Gotu kola, ingredients for

ketogenic diet (fibers, proteins, amino acids, vitamins and minerals), lipotropic factor and green detox including broccoli, spinach, parsley, lemon, coconut, quinoa, turmeric, ginger and matcha, green tea extracts and etc. are more popular nowadays. Tablets, capsules, powders and herbal teas are the formulations that available in community pharmacies in Cyprus. The all products have different mechanism of actions but generally they are claimed to help increase fat burning and manage weight.

In addition to these medications and supplements, even probiotics and Sennosid B/ Bisakodil, Metformin HCl, Furosemide, Triamterene and Hydrochlorothiazide, Ephedrine, Salbutamol, Aspirin and ECA are used to promote fat-burning and weight loss.

Nowadays, social media has crucial place in public's lives, resulting as the main reason of the popularity of those supplements is social media. Advertisement is playing an important role to increase popularity of those supplements and attracts attention of general public to those products. This decreases the ratio of implementing weight management program in community pharmacies.

These products have shock effect to the body due to their usage, so it might cause serious side effects after a while.

### ***Pharmacist's Role in Weight Management***

It is commonly believed in the community that the role of the pharmacists consists of dispensing medicines, ensuring that the medicines are used correctly and giving information about medicines. However, pharmacists are the primary healthcare workers in public therefore, they can provide care and improve public's life quality. They have expertise in the fields of medicines, health and disease conditions including weight management working together with physicians and dieticians. Thus, focusing both on patient's weight and general health.

In this regard, community pharmacists get to interact with overweight (BMI>30) individuals visiting the pharmacy, give feedback on how to prevent complications associated with obesity and guide for psychological support when necessary<sup>[10]</sup>. They work with other healthcare professionals to initiate treatment and change patient's preferences in daily life. Nowadays, most people are more sedentary in their daily lives. Lack of physical activity is the major cause of weight gain. In addition, people prefer consuming fast-food while they are outside. Consuming excess of fat-containing foods is another critical risk factor for gaining weight.

Physical inactivity is also been shown to be a major risk factor for coronary heart diseases (CHD).<sup>[8]</sup> Increasing regular physical activity causes reduction in low-density lipoproteins, very low-density lipoproteins and triglyceride levels and increase high-density lipoprotein cholesterol level<sup>[8]</sup>. Pharmacists have a crucial role since they have the skills and knowledge to give advice. People should add on at least 1-hour physical exercise in their daily lives. It is not mandatory to do heavy sport or going to gym, there are variety of alternative activities such as walking outside, jogging and doing yoga.

Hemoglobin A1c level is important in overweight or obese patients, especially who have type 2 diabetes mellitus. Hemoglobin A1c refers to glycated hemoglobin and it develops when hemoglobin and glucose join together in the blood.<sup>[1]</sup>

Excess body fat is strongly related with worsened glycemic control via impaired insulin signaling and it is also risk factor for other chronic diseases. Weight loss is important to reduce insulin resistance and therefore improve glycemic control<sup>[4]</sup>.

It is not a pharmacist's role to give a regular diet plan but they can discuss with patients and guide them towards consuming healthier diet containing vegetables and low-carbohydrate food.

Community pharmacists should also have good communication skills. In weight management, pharmacists should listen to patient's concerns, answer their questions clearly. Explain the complications and risk factors of obesity and give information about health benefits of weight loss, such as modulating blood pressure, reduce type 2 diabetes mellitus and reduce osteoarthritis-related disability. Moreover, they should give feedback during the treatment and motivate those individuals to change their behavior. However, the role of the community pharmacists in weight management is often underestimated. It is believed that, they do not have enough time to counsel the patients, lack of space and staff in the pharmacy, remuneration for the service provided which overall lowers the patient's expectations<sup>[11]</sup>.

But pharmacists, the most accessible healthcare professional, are in the position to provide early detection of chronic diseases and identify unhealthy lifestyles, especially during dispensing the medication process. They can help patients to prevent or reduce risk factors by counselling patients such as weight management, exercise and smoking cessation<sup>[3]</sup>.

Pharmacists are first line healthcare professionals in Cyprus like other countries. While counselling patients, the blood test values of those patients are more important. For instance, obesity is related to higher blood pressure or hypertension. This leads to stroke, dementia and other diseases. Not only blood pressure, cholesterol level, insulin level and hemoglobin A1c level should be checked with blood tests. Pharmacists should check these values and should be in contact with other healthcare professions to manage their patient's health status and weight.

### ***Aim of Study***

This study will be performed to improve public awareness of weight management in community pharmacy, modify patient's lifestyle in order to encourage them to adopt a healthier behavior and improve patient's adherence to lifestyle changes which is similar with medication adherence. Correspondingly, people will be informed that it is possible to follow a healthier lifestyle by the help of pharmacists as primary healthcare workers.

Also, the aim of the study is to increasing public's confidence to community pharmacists in all disease conditions including weight management and increasing their awareness on the role of the community pharmacists.

## **METHODS**

### ***Data Collection***

The project has been prepared by using variety of scientific articles related to the subject. By the help of those articles, first questionnaire has been developed that aims to gather information from the society about their knowledge on health

benefits of losing weight and of the society's awareness on the pharmacist's role in weight management.

In addition, a flyer was prepared according to those articles and questionnaires.

The aim of the second questionnaire was to assess the community pharmacist's thought and patient's preferences from community pharmacist's perspectives in that subject.

**Validation**

The questionnaires were validated. The pilot test was carried out with 10% of the sample size (n=385). Data was transferred to SPSS program and the Cronbach's Alpha (CA) number was determined by SPSS. The CA value should be range from 0-1.0 to be considered reliable. The CA number for this study is 0.861 which means that the questionnaires are understandable and acceptable by the patients.

**Data Analysis**

To analyze data and to obtain graphics, SPSS program was used. The questionnaires were carried out in the community pharmacies. To collect data, several pharmacies were visited. After collecting data, the results were transferred into SPSS and the graphics were obtained. Descriptive statistical methods were used while preparing graphics and tables.

**RESULTS**

The study was conducted in community pharmacies and in total 385 members, whom 55.8% (215) are females and 44.2% (170) are males, of the public attended face-to-face interview and 100 community pharmacists were attended to the second questionnaires.

**Table 1** Number of Patients Who Know About Weight Management Program in Community Pharmacies

**NUMBER OF PATIENTS WHO KNOW ABOUT WEIGHT MANAGEMENT PROGRAMME IN COMMUNITY PHARMACIES**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid HAVE NO INFORMATION AT ALL	108	28,1	28,1	28,1
HAVE NO INFORMATION	87	22,6	22,6	50,6
NO IDEA	100	26,0	26,0	76,6
HAVE INFORMATION	50	13,0	13,0	89,6
HAVE ENOUGH INFORMATION	40	10,4	10,4	100,0
Total	385	100,0	100,0	

According to statistics, 50.7% of people have no any idea about weight management programs that can be carried out in community pharmacies and 23.4% of people have information about weight management programs.

**Table 2** Number of Pharmacists Who Know Weight Management Program in Community Pharmacies

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid YES	50	50,0	50,0	50,0
NO	50	50,0	50,0	100,0
Total	100	100,0	100,0	

The results revealed that, 50% of the community pharmacists know about weight management program in community pharmacies and the rest of them has not enough information about that program.

**Table 3** Number of Patients Who Trust Pharmacists for Weight Management

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid TOTALLY DISAGREE	62	16,1	16,1	16,1
DISAGREE	70	18,2	18,2	34,3
UNSTABLE	109	28,3	28,3	62,6
AGREE	96	24,9	24,9	87,5
TOTALLY AGREE	48	12,5	12,5	100,0
Total	385	100,0	100,0	

37.4% of people trust pharmacists and 34.3% of people are believe that pharmacists do not manage weight in community pharmacy.

**Table 4** Number of Pharmacists Who Thought Their Patients Trusted Them

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid YES	90	90,0	90,0	90,0
NO	10	10,0	10,0	100,0
Total	100	100,0	100,0	

According to results, 90 community pharmacists thought that their patients believe them for managing weight.

**Table 5** Can Lifestyle Modifications Instead of Using Drugs for Losing Weight to be Effective?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid TOTALLY DISAGREE	10	2,6	2,6	2,6
DISAGREE	9	2,3	2,3	4,9
UNSTABLE	36	9,4	9,4	14,3
AGREE	79	20,5	20,5	34,8
TOTALLY AGREE	251	65,2	65,2	100,0
Total	385	100,0	100,0	

85.7% of people believe that the lifestyle modifications are the best way for losing weight and increase quality of life instead of using drugs and 4.9% of people think that drugs might be helpful to lose weight.

**Table 6** Number of Patients Who Prefer to Asked the Pharmacists for a Medication/Supplement for Managing Weight

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid YES	84	84,0	84,0	84,0
NO	16	16,0	16,0	100,0
Total	100	100,0	100,0	

The results have been shown that 84% of patients want to use medications or supplements for weight loss. The rest does not prefer to use any products for managing weight.

**Table 7** Products That are Preferred by the Patients in Community Pharmacies

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid HERBAL	77	77,0	77,0	77,0
MEDICATIONS	23	23,0	23,0	100,0
Total	100	100,0	100,0	

People in community prefer to buy natural products sold as supplements rather than buying medications in 77 community pharmacies and in 23 community pharmacies, medications for weight management like Orlistat are preferred by the patients.

**Table 8** Number of Community Pharmacists Who Thought That They Have an Essential Role in Weight Management

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid YES	88	88,0	88,0	88,0
NO	12	12,0	12,0	100,0
Total	100	100,0	100,0	

The results have been shown that community pharmacists have an important role in weight management like managing other chronic diseases. 88% of community pharmacists thought like that and rest of them thought it is not pharmacist's role.

**Table 9** Number of Pharmacists Who Believe that There are Several Barriers While Applying Weight Management Program

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	YES	60	60,0	60,0	60,0
	NO	40	40,0	40,0	100,0
Total		100	100,0	100,0	

There are several barriers for applying management program in community pharmacies.<sup>[11]</sup>

One of them is lack of space in community pharmacies either it is in city center or in out of the city. 60% of the community pharmacists thought that they do not have enough place like consultation room in their pharmacies to counsel patients. another barrier is lack of time. Most of the community pharmacists do not have a technician, so they do not have enough time to counsel patients during working hours. they have limited time to communicate patients, listen their concerns and their medication. Thus, they do not have time for weight management.

However, 40 community pharmacists defended opposite of this idea. As they are first-line healthcare services, they should take time to their patients and supervise their medical conditions including weight management.

## DISCUSSION

This study has shown that, 132 people (55 men and 77 women) in the community did not prefer pharmacists for advice on weight management and did not appear to want weight management services from pharmacies. They trust knowledge of pharmacists about dosage and management of medications, management and prevention of chronic diseases such as hypertension and diabetes mellitus but not believe pharmacists that have enough information about management of weight and prevention of obesity. However, they visited pharmacies frequently to measure their weight. These people prefer dieticians, doctors and gyms for weight management. most abundant age range of those people is between 25 to 38 (48people) and 70 people were university graduates or studied in university. In contrast, 144 people believe that pharmacists can also be a part of weight management team together with doctors and dieticians.

The Counterweight Management Program is implemented in most countries like Lebanon <sup>[5]</sup>, Australia <sup>[18]</sup>, US<sup>[11]</sup>, UK<sup>[6]</sup> and so on but in Northern Cyprus, there is no any study related to that management program but 69 community pharmacists are ready to implement this program with dieticians, physicians and overweight or obese patients. In addition to this number, 88 community pharmacists believe that community pharmacists are in the part of healthcare team to manage weight like management of other chronic diseases.

The advantage of this program is also increasing the trust of public to the community pharmacists. Moreover, the recent studies shown that, the program is increasing the relationship between community pharmacists- healthcare professions, community pharmacists- general public and community pharmacists- pharmacy students because all the professionals

will work together to manage, prevent and treat chronic diseases and also increase awareness of general public to obesity and other chronic diseases.

Ketogenic diet products are more popular nowadays. Most of the people started use these products. The other supplements are also popular and used but ketogenic diet is the most popular. Before, orlistat is used frequently for losing weight but now frequency of usage is decreased. After orlistat, furosemide, metformin HCl and sennoside B/ Bisakodil are used for managing weight. The ratio of using salbutamol, aspirin and other drugs are low and the reason on why they are used for weight loss is unknown.

In addition, the barriers<sup>[11][7]</sup> play an important role in weight management. lack of time, lack of space in the community pharmacies and lack of technicians are important barriers for community pharmacists to implement weight management program in community pharmacies.

The results revealed that a study to increase the awareness of the society on the pharmacists' effective role in the weight management and control an obesity-related disease is needed.

## CONCLUSION

Obesity is recognized as a serious chronic disease affecting population worldwide pandemic caused by lack of physical exercise, unhealthy food habits and genetic predisposition. It can be effectively managed by changing lifestyle such as incorporating physical exercise in sedentary life, consuming healthier foods instead of carbohydrate-containing foods. Such alterations can prevent weight gain and associated health complications thus, improve the quality of life. Community pharmacists are easily accessible and they have an important role in preventing the progression of diseases so they should be part of the healthcare teams in weight management.

Pharmacists have adequate knowledge about the risk factors, prevention, management and treatment of diseases. Thus, they can counsel patients. In pharmacy education, students are well-trained to communicate effectively, achieve basic physical assessment, counsel patients about pharmacotherapy, diet and physical activity. Thus, it covers etiology, risk factors, management and treatment of obesity which qualifies as a string foundation for providing lifestyle management counseling.<sup>[5][7]</sup>

Pharmacists can also overcome barriers to manage obesity by motivating patients, increase their awareness about obesity and encourage to change their behavior in a good way. As the obesity is a worldwide pandemic problem, the Counterweight Management Program should be initiated to apply to obese and overweight patients with higher risk of coronary heart diseases in Northern Cyprus by community pharmacists instead of using medications or natural products sold as supplements.

By the help of questionnaires and flyers, the role of the community pharmacists in weight management is underlined and also, this study will help to increase awareness on weight management in community pharmacies and increase general public's confidence to the community pharmacists.

Instead of using medications, Counterweight Management Program might be implemented by the help of community pharmacists.

The pharmacists focus on society's health and they use their knowledge to improve health and quality of life of the population.

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