



## ROLE OF PHARMACISTS IN PREVENTION AND TREATMENT OF OBESITY IN JORDAN

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### ABSTRACT

**Background:** Obesity is consider one of the most risk factor for many diseases like DM, cancer, HNT, etc. So it consider as an epidemic factor. So, the obesity patients need many counseling to increase their attitude toward obesity. In general pharmacists must be involved in this medical fields to help patient increase their attitude toward obesity products. **Objective:** Explore the role of local pharmacists in Jordan toward weight controlling by examining their current attitude, practices and knowledge toward obesity. **Methods:** A online questionnaire-based study of 110 community pharmacists in Jordan selected randomly via pharmacy association, conducted during February 2022. The survey contained five parts that focused in demographic information, attitude toward weight reduction, weight control ,evaluated the weight control methods used by the pharmacist ,assesses the pharmacist's practice toward weight reduction and barriers of counseling. **Results:** The response rate was 90%(100 participated to this survey). More than half of them agree that they have an effective role toward weight control. The majority of them didn't take any weight management course (90%).Most of the pharmacists have been working in the pharmacy for more than three years (75%). The majority of respondents(61%) were strongly agree that over increasing in body weight is consider one the major problem in Jordan. The minority of respondents (8%) disagree that effective role of pharmacists toward weight loss products The minority of pharmacists showed that they rarely shared weight and height measurements with their patients (21%), but the majority (75%) rarely measured their body fat with patients. The minority of respondents answer BMI incorrectly, only 51% answer correctly to discontinue the obesity medication when the body weight reach the target. The majority of them answer correctly about Co-administrate the green tee may affect of anticoagulation drugs (warfarin). **Conclusions:** The findings of this study gave significant results toward the attitude, practices, and knowledge of local pharmacists about overweight persons in Jordan. As a result, the pharmacy association and ministry of health should provide continuous education program to the pharmacists . These programs give better knowledge of obesity management to them.

### BACKGROUND

There is an increasing rate of obesity as a pandemic disorder.<sup>[1]</sup> It increase morbidity and mortality rate of many diseases like hypertension , DM, heart disease, seizure, multiple mental disorder and many psychiatric disease.<sup>[2,3]</sup> Because of the risky of increase obesity and increase healthy problems, there is an urgent need to control it by many medical interventions.<sup>[4]</sup>

However doctor consultations have a strong impact on weight management, time barriers and low compensation create barriers between patient and physician.<sup>[5]</sup> A growing body of evidence suggests that a multidisciplinary approach using a wide range of proven synergies between medical specialties is likely to be more effective.<sup>[6]</sup> One of the major trustworthy health care professional is community pharmacists.<sup>[7]</sup>

There is an effective role of the community pharmacists in preventions many diseases like lipid disorders, DM, osteoporosis and weight control.<sup>[8,9,10,11,12,13]</sup> American Society of Health Systems advises pharmacists working with these patients to monitor lifestyle changes.<sup>[14]</sup> There is an effective role of pharmacists toward management obesity, control body weight and its risk factors.<sup>[15]</sup>

Different studies that took place of different countries concluded that the intervention of pharmacist in obesity patients have significant effect in weight loss.<sup>[16]</sup>

However, most of the studies included in this large-scale study were studied in developed countries.<sup>[17,18,19]</sup> with limited data, where the obesity is reaching warming level.<sup>[10, 20]</sup>

For example, Lebanon is consider one the most developing countries with increase in prevalence of

obesity sharply especially between 1997 to 2009.<sup>[21]</sup> This increase in the widespread of childhood obesity has also been observed.<sup>[21, 22]</sup> The increasing prevalence of obesity in Lebanon requires the involvement of an interdisciplinary team of specialists in the effective treatment of obesity<sup>[23]</sup>, among whom Lebanese pharmacists are trusted and well known.<sup>[24]</sup>

In fact, an earlier survey of local pharmacists in Lebanon studying their role in treating high blood pressure found that most of them offered patients choices and behaviors related to lifestyle, smoking cessation, substance abuse, alcohol and healthy food.<sup>[24]</sup>

In addition, there is another study examining the role of pharmacists in complementary and alternative medicine (CAM) pharmaceuticals found that the majority of pharmacists surveyed believe it is the responsibility of the pharmacist to provide information about CAM products and safe use to consumers.<sup>[25]</sup>

So the purpose of this study is to explore the participation of pharmacists in Jordan in the prevention and treatment of overweight and obesity and, in particular, to explore their perceptions about their role in weight control, methods, services, barriers and current knowledge.

## METHODS

A online questionnaire-based study of 110 community pharmacists were selected randomly in Jordan, will conduct during February 2022. The survey contained five parts. The first part contained 8 questions related to demographic characteristics. Second part were concern to attitude toward obesity products which contain 7

questions. Third part contained 11 questions related to pharmacy practice toward obesity management .Forth part contained 8 questions related to the barrier to counseling. Five part contained 8 questions related to the knowledge of pharmacists towered these products. The results analyzed using SPSS.

## RESULTS

### 1- Part One: demographic characteristics

A total of 110 pharmacists were interviewed with 110 pharmacists completed the questionnaire (response rate 91%).

The majority of pharmacists (n=61) concentrated in Amman who participated in this study. More than half of them aged (62 %) between 31-40 years old age. Half of the respondents were male (45 %).

In terms of educational level, more than half of them surveyed had a bachelor's degree (52%) and 42% had an advanced degree, 22% had a Pharm D and 20% had a master's or doctorate. With regard to weight management course, the majority of them didn't take any weight management course (90%).

44% of pharmacists with over than 10 years of experience, 33% with 6 to 10 years of experience and 15% with 1 to 3 years of experience are in the following lines. More than half of them aged (62 %) more than 50 years old age. Half of the respondents were male (52%).The majority of them didn't take any weight management course (90%).Most of the pharmacists have been working in the pharmacy for more than three years (85%).

Further results are shown in table 1.

**Table 1: Part One: demographic characteristics.**

	No.	Frequency %
1- Gender :		
Female	55	55
male	45	45
2- Age		
20-30	10	10
31-40	25	25
41-50	3	3
>50	62	62
3- Education Level		
Bachelor of Pharmacy (BSc Pharm)	52	52
Doctor of Pharmacy (PharmD)	20	20
Postgraduate degree (master's degree or PhD)	20	20
4- Years of Pharmacy Experience		
<1	0	0
1-3	15	15
3-6	8	8
6-10	33	33
>10	44	44
5- Pharmacy Location		

Irbid	22	22
amman	61	61
Other	17	17
6- Did you receive any weight management course?		
No	90	90
6-Commonly prescribed weight reduction products		
Green tea	45	45
Oatmeal products	20	20
Ginseng	62	62
Green coffee bean extract	26	26
Metformin	32	32
Orlistat 60 <sup>®</sup>	36	36
Others (ginger, ginkgo, protein bars, grapefruit)	40	40
7-Are you aware of the products that could be used for weight reduction?		
Yes	55	55
No	45	45
8- Have You Seen a Patient Complaining of Side Effect(s) After using weight reduction product(s)?		
Yes	25	25
No	75	75

### 2- Attitude toward these products

Regarding attitude toward these products, the majority of respondents (61%) were strongly agreeing that over increasing in body weight is consider one the major problem in Jordan. The minority of respondents (8%) disagree that effective role of pharmacists toward weight loss products . 81% of the respondents agree with that these products should only sold in the pharmacists. 71% of pharmacist have neutral with that the information

about weight loss products is the responsibility of pharmacists.

The majority of respondents strongly agreed (42%) or agreed (45%) that Weight management course should provide to the pharmacists. Overall, the participant gave a negative review of the market, agreeing that customers abuse weight-loss products (68%) and companies abuse customers by making false information (75 %). Further results are shown in Table2.

**Table 2: attitude toward these products.**

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Over increasing in body weight is consider one the major problem in Jordan	6	6	5	22	61
Effective role of pharmacists toward weight loss products	51	32	10	8	2
Pharmacists responsibility toward providing data to the patients about these products	5	12	71	6	6
Weight management course should provide to the pharmacists	32	30	20	9	9
Abuse using these products	31	39	10	15	5
There is difference between companies information and practical use of these products	15	68	10	4	3
Positive role of social media toward these products	20	75	5	0	0

### 3- Practice toward weight reduction

The majority of them (75%) showed that they always dispense these products in their pharmacy. More than third of the respondents reported that the often counsel the patients to eat lower calorie diet and check drug-product or drug-food interactions.

The minority of pharmacists showed that they rarely shared weight and height measurements with their

patients (21%), but the majority (75%) rarely measured their body fat with patients.

Most of them reported they often having their blood glucose and blood pressure measured (71% and 63%, respectively) at their pharmacy. The majority of pharmacists (52%) showed that they often Counsel them about adverse effect of these products. However, 85 % of pharmacists never reported side effects of these products. Further results are shown in table 3.

**Table 3: practice toward weight reduction.**

	Always	Often	Sometimes	Rarely/never
dispense weight management things	75	20	2	3
check drug-product or drug-food interactions	32	36	10	22
counsel the patients to eat lower calorie diet	32	36	10	22
counsel them to walk every day about 30 min.	40	32	12	16
scale weight measurements for them	20	25	34	21
Scale height measurements for them	15	19	45	21
Scale fat levels in their body	10	5	10	75
Counsel them about adverse effect of these products	32	52	8	8
Tell you any adverse reaction of these products?	3	2	10	85
Measure BP	15	71	1	13
Measure BG	11	63	16	10

**4- Barrier to counseling**

More than third of respondents agree/strongly agree with the following barriers to provide counseling ; not enough time (30%/35%), not enough stuff (36%/39%), not

enough space (32%/35%), not have suitable materials (32%/33%) and not enough knowledge (35%/39%).

Further results are shown in table 4.

**Table 5: barrier to counseling.**

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
No enough time	30	35	22	7	6
No enough stuff	36	39	10	7	8
No enough space	32	35	13	11	9
Not enough knowledge	35	39	10	8	8
Don not interested in this subject	22	23	10	25	20
Don not have a suitable materials to measure weight	32	33	20	8	7

**5- knowledge toward weight management**

The minority of respondents answer BMI incorrectly, only 51% answer correctly to D/C the obesity medication when the body weight reach the target. The majority of them answer correctly about Co-administrate the green tee may affect of anticoagulation drugs (warfarin). Only

10% of respondents answer correctly about Orlistat which is C/I in patients with cardiovascular diseases. Finally, high grade pharmacists with master or pharm D have higher knowledge toward weight management than others.

Further results are shown in table 5.

**Table 5: knowledge toward weight management.**

True/ False	Correct answer%
Obesity is consider when BMI > 29.9 kg/m <sup>2</sup> .	75
d/c the obesity medication when the body weight reach the target	80
Laxatives are effectives drug in lowering body weight	10
Herbal Laxative (like senna, cascara, etc) are consider for pregnant or breast feeding women	1
High quantity of green tee may exacerbate toxicity	4
The main adverse effect of Orlistat is gastrointestinal toxicity	35
Co-administrate the green tee may affect of anticoagulation drugs (warfarin).	10
Orlistat is C/I in patients with cardiovascular diseases.	10

**DISCUSSION**

In general, the results of the study showed a positive general view of pharmacists toward their role in weight control. In terms of performance, despite being involved in weight control and control consultations, a significant

proportion of pharmacists had difficulty performing important diagnostic procedures, BMI or measuring blood pressure.

Additionally, while more than half of pharmacists in this study asked about product side effects, only one third wrote such side effects to the company or health care representative.

This study has significant gaps in knowledge among pharmacists, especially regarding the side effects of certain weight-control and their interactions with other drugs. In this study, factors that were significantly associated with good skills were higher education (master's).

In this study, most of respondents believed that their role in weight control was important and that the distribution of diet products should be the responsibility of the pharmacist.

In particular, the results showed that while pharmacists believed they could play a role in weight control, they also believed in the significant role of an interdisciplinary team and that other medical teams could take the lead.

These results are consistent with previous published studies showing that a survey of 128 local pharmacists in Scotland showed a positive attitude towards weight control services.<sup>[26]</sup>

In addition, another study that conducted in Australia that examined pharmacists' views on the provision of weight control services found that respondents clearly understood the important role of pharmacists in obesity management as part of a team.<sup>[17]</sup> In Australia, a recent study of pharmacy students and young pharmacists found that the pharmacists rated their perceived role in give positive obesity management counseling.<sup>[27]</sup>

Since few of tenths of weight management products found in pharmacies are approved drugs, they are not classified to rigorous testing for safety and quality.<sup>[28]</sup>

In this assay, pharmacists' positive attitude towards their role in weight control was also reflected in their work, with most pharmacists always distributing weight-managements products and educating patients about healthy habits such as weight loss and recommended nutrition.

Some studies showed more sophisticated weight loss meetings in the role of a pharmacist, such as education program and weight loss courses.<sup>[29,30,31]</sup>

In general, the result of this study is similar to another study that took part in Australian which showed that medication and weight loss advice remained the two main pillars of the pharmacist's role in weight control.<sup>[17]</sup>

It is concerning that in this study, some of the methods reported by respondents compromised their efficacy and safety in weight control. For example, pharmacists who took height and weight measurements, less than 5% measure BMI, or gave body fat.

Most scientific reports use other criteria such as measure the width of the person and distribution of fat.<sup>[48]</sup> Half of the respondents did not discuss the side effects of these products with their patients. According to the American Pharmacists Association, discussion the safety and affectivity of these products with the patients is very important for the patients.<sup>[33]</sup> Therefore, more than half of the respondents said they did not document any drug toxicity or side effects.

Additionally, the most of pharmacists who documented these side effects sand them to the manufacturing company. Similar measures were shown among local pharmacists in Lebanon regarding complementary and alternative drugs.<sup>[25]</sup> These safety measures threaten patient healthy as many side effects have not been reported and can have serious health consequences.

Additionally, reporting these side effects to a manufacturer or whose primary goal is to monetize the sale of a drug raises serious ethical questions about such action. In this study, pharmacists' attitude and actions related to weight control faced significant knowledge gaps in this area.

In addition, in case of the fact that most of them in this study were involved in the sell of weight management products, a significant proportion of questions about side effects and drug interactions were answered incorrectly.

These knowledge gaps were also identified in other studies in which pharmacists highlighted the requirement for training in weight loss counseling, diagnosis of obesity, and the use of weight management medications.<sup>[26,27]</sup>

Although education pharmacist training programs in Jordan have evolved to accommodate the evolution of the pharmacy role from drug delivery to more focused patient care services, such as weight control counseling.

Activation of health ministry and pharmacy association have been shown to increase pharmacy knowledge in many aspects of weight control.<sup>[34,35,36]</sup> Along with pharmacy education, the results of this study indicated that obtaining a master's degree or pharm. D in pharmacy has a positive acknowledge toward these fields.

According to barriers, the findings of this study indicated that a significant proportion( over than third) of pharmacists surveyed agreed that time, space, staff, salaries, and related equipment are the major barriers to providing weight control counseling. These barriers were also noted in another studies.<sup>[10, 15, 17, 26]</sup>

The creation of multidisciplinary action models and increase technicians are very important to overcome time barriers.<sup>[37]</sup> To overcome the space barrier ,the pharmacy should designed to support dispensing and counseling role of the pharmacists.



Several studies have attempted to change the appearance of the pharmacy by placing the pharmacist in front of the counter. These showed promising results as they provided more guidance to the pharmacist.<sup>[38,39]</sup>

## CONCLUSIONS

The findings of this assay indicated that community pharmacists in Jordan are generally positive about their role in weight control and are involved in counseling on weight loss and weight control products.

Furthermore, the study results revealed significant gaps in pharmacists' current work (for example, underreporting of side effects) and knowledge, especially regarding the adverse effects of some products and their interactions with other drugs.

Finally, the results of the study provided important information about the beliefs, practices and knowledge of the respondents in the Jordan toward weight management. Collaborative efforts health ministry and pharmacy association, to initiate the role of pharmacists in obesity management.

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