ASSESSMENT OF KNOWLEDGE AND APPROACHES TO ASTHMA MANAGEMENT IN JORDANIAN PHARMACISTS

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ABSTRACT

Introduction: Asthma is an obstructive lung disease associated with shortness of breath, wheezing, and a prolonged expiratory phase during the respiratory cycle. Asthma is a major health disease in Jordan. Over than 200 million people worldwide have asthma. The goal of asthma treatment is to manage symptoms and reduce the number of emergency room visits to treat severity of disease. Poorly treated asthma is a leading cause of morbidity and mortality. Local pharmacists play an important role in asthma management because they are the most accessible health care providers in Jordan. The awareness of pharmacists and patients about the disease and its treatment is a measure that has proven its usefulness. Therefore, qualified pharmacists must have a positive attitude and sufficient knowledge about the results of p sectionsharmacological treatment of patients with asthma. **Aim:** The purpose of this study is to assess knowledge of and approaches to asthma management in pharmacists at Jordan. **Materials and Methods**: On line cross-sectional survey conduct from April 2022 to Jun 2022. The study group consisted 110 pharmacists registered with the pharmacy association and working either in hospital or community pharmacies Amman. The questionnaire contained five sections with 33 questions. The five section focused in sociodemographic charter tics, attitude toward asthma, knowledge toward asthma, practice toward asthma, and barriers of counseling. **Results:** A total 110 pharmacists were participated in this study. Only 100 of them completed the questionnaire with response rate 92%. The majority of them were female (61%). (52%)of pharmacists don't know which factors that increase clearance of theophyllin. One quarter of respondents(28%) answered the question about the advantage of MDI inhaler technique incorrectly. More than third of pharmacists (38%)sometime counsel asthmatic patients about inhaler technique on chronic use. 62% of them often counseling patients to avoid triggering factors. **Conclusion:** This study showed that pharmacists do not have enough knowledge about asthma. However, hospital pharmacists had a higher knowledge value than community. The pharmacy association should provide continuous educating program to the pharmacists to increase their asthma knowledge and skill.

INTRODUCTION

Bronchial asthma is an obstructive disorder characterized by shortness of breath, wheezing, etc.[1] The prevalence of asthma in Jordan is around 12.3%.[3,4,5] This may be due to environmental factors such as dust, smoking, etc.[4,5] A recent study of pharmacists[2,5 6], found that poor asthma control, poor prognosis, and excessive control were common in patients. Although that the classification of the severity of the disease and the correct use of inhalations is the lowest of the indications of medical professionals. These findings point to the need to training programs in Jordan. The aim of asthma treatment is decrease morbidity and mortality.[1,5] pharmacists has the main role in controlling asthma.[7] however, high prevalence of asthma worldwide calls for interventions that can help slow the progression of the disease. One measure that has proven useful is to increase the level of knowledge about the asthma and its treatment among health professionals and patients.[6] Therefore, qualified pharmacists should have a positive attitude and adequate knowledge of the results of pharmacological treatment of patients with asthma. Several studies have assessed the knowledge of medical professionals in asthma management in Saudi Arabia.One study was conducted in Saudi Arabia. They used the imaginary patient approach to evaluate pharmacists' knowledge of the correct use of inhaled medications and found that pharmacists had little knowledge about the use of inhaled medications.[2] Therefore, this study is designed to assess knowledge and attitudes towards asthma treatment in pharmacists in Jordan.

RESULTS

Part one: sociodemographic characteristics of the respondents.

A total 110 pharmacists were participated in this study. Only 100 of them completed questionnaire with response rate 92%. The majority of them were female (61%). The majority of them have between 4 years to less than 8 years of experiences(42%). Only 11% have master degree. Further results are shown in table 1.

Table 1: sociodemographic characteristics of the respondents.

	n	**%**
1- Gender		
male	39	39
female	61	61
2- Age		
20-30	40	40
31-40	31	31
41-50	15	15
51-60	14	14
More than 60		
3-years of experience		
Less than 5 months	9	9
6 months to 1 year	12	12
1 year to less than 3 years	26	26
4 years to less than 8 years	*42*	*42*
9 years to less than 12 years	11	11
More than 12 years		
4-graduates level		
Bachelor	39	39
PharmD	50	50
Masters	11	11
5-working of hours/week		
1-20hr	30	30
21-30hr	39	39
31-42hr	21	21
More than 42hr	10	

Part two: knowledge of respondents toward asthma: With regard to knowledge of respondents toward asthma, the minority of respondent answered the question side effects of inhaled corticosteroid correctly(31%). (52%)of pharmacists didn't know which factors that increase clearance of theophyllin. One quarter of respondents(28%) answered the question about the advantage of MDI inhaler technique incorrectly.

Further results are shown in table 2.

Table 2: knowledge of respondents toward asthma.

6- all of the following is correct about side effect of inhaled corticosteroid except?
a-increase blood pressure   n=9
b-decrease blood pressure   n=22
c-increase glucose level   n=25
d- fluid retention   n=22
e- don't know   n=22
7-Which one of the following factors increases the clearance of the theophyllin
a- Sulfinpyarazone   n=11
b- Propranolol   n=12
c- Erythromycin   n=25
d- Ciprofloxacillin   n=0
e- don't know   n=52
8- MDI have all of the following except
a- The advantage of being multidose n= 32
b- widely available   n=21
c- not requires a good technique   n=28
d- only deliver about 10% of drug to the airway n=15
e- all of the above   n= 4
9- The second step in management of adult asthmatic patient is
a- low dose of corticosteroid   n=31
b-high dose of corticosteroid   n=29
c-medium dose of corticosteroid   n=28
d- Omalizumab   n=2
e- don't know   n= 8
10- Which of the following drugs is inhaled long-acting
a- Formoterol   n=42

b- Isoproterenol	n=0
c- Albuterol	n=12
d- Pirbuterol	n=22
e- don't know	n=24
11- Which of the following drugs is inhaled short-acting	
a-formetrol	n=24
b-betmathasone	n=7
c-sulmetrol	n=28
d-fluicasoe	n=8
e- don't know	n=32

Part three: attitude of respondents toward asthma
72% of respondent agree to the significant of control asthma in daily life. More the quarter of them strongly agree to that the importance of pharmacists intervention in asthma control.82% of respondents strongly agree with need for effective training with the appropriate approach to update their knowledge and skills.

About one third of respondent(35%) agree with the patient is critical part in asthma medical treatment team. More than quarter of them (37%) strongly agree with medical treatment team. More than quarter of them(32%) strongly agree with maintain good respiratory function is very complex. Further results are shown in table 3.

Table 3: attitude of respondents toward asthma.

statement	Agree %	Strong agree %	Neutral %	Disagree %	Strong Disagree %
12- significant of control asthma in daily life	72	10	5	7	6
13- pharmacists intervention is very important in asthma care	30	35	12	13	10
15- pharmacists need many asthma skill treatment	30	35	10	20	15
17- Asthmatic patients need monitoring PFT	37	20	28	8	7
18- maintain good respiratory function is very complex	30	32	20	15	3
19- need for effective training with the appropriate approach to update their knowledge and skills	10	82	2	4	2
20- the patient is critical part in asthma medical treatment team	35	15	15	20	15
21- pharmacists have major role in treatment of asthma	40	25	25	**5**	**5**

Part four: practice of respondents toward asthma counseling:

Regarding the overuse of MDI, the minority of them often counsel the patient 22%. More than third of

pharmacists (38%)sometime counsel asthmatic patients about inhaler technique on chronic use. 62% of them often counseling patient s to avoid triggering factors.

Further results are shown in table 4.

Table 4: practice of respondents toward asthma counseling.

statement	Often %	Always %	Sometimes %	Never %
22-Frequency of meter dose inhaler use.	22	20	25	33
23-Overuse of meter dose inhaler medication	14	10	25	51
24- do not interest in prophylactic treatment	10	15	14	61
25-Inhaler technique when first prescribed the inhaler	22	29	28	21
26- Inhaler technique on chronic use	21	38	30	11
27-avoid of triggering elements	28	29	30	13
28-self-monitoring of the disease control .	62	20	10	8

Part five: barriers to asthmatic patients counseling: When asking about the barrier of them to give to asthmatic patients counseling, the majority of them reported that not enough time, not enough patient and not enough

information in asthmatic patients were the main barriers. Further results are shown in table 5.

Table 5: barriers to asthmatic patients counseling.

	YES %	NO %
29. not enough respondents time t	87	13
30-not enough patients time	78	22
31-good communication	48	52
32-not enough information in asthmatic patients	77	23
33-No financial incentive	22	78

DISCUSSION

A pharmacist is the person responsible for treating people with asthma. Asthma patients discuses pharmacists with brief conversations without an appointment.

As a result, asthmatics may need to see a pharmacist more often than a doctor. Because pharmacists have access to medication and patient records, they can identify common medication problems.

For example, improper device technique and overuse of medications for rapid improvement. To provide medical care to people with asthma, pharmacists must have sufficient knowledge about the disease and its treatment.

Several studies have shown that inadequate knowledge and negative attitudes of pharmacists can lead to inadequate patient education, inadequate knowledge, and inadequate management of asthma.[11]

The purpose of this study was to assess the knowledge and attitude of pharmacists in treating patients with asthma.
This study shows that most pharmacists can name the factors that can trigger asthma attacks.

suddenly, most of respondents were unaware of asthma medications.

Hospital pharmacists and community pharmacists scored lower than expected in all cases, taking into account the general principles of asthma management.

There was a higher level of misperception that the anticholinergic bronchodilator (iptropium bromide) is not a symptomatic spray (16%).

Another incorrect answer observed in this study was that of the adverse effects of inhaled steroids (9%).

Pharmacists must have sufficient knowledge to control therapeutic drugs.

This ignorance by pharmacists can lead to treatment failure and may lead to the underlying causes of morbidity and mortality.[11]

In this study, knowledge scores were below the Asthma Pathophysiology Scale, Flow Meter, and Treatment Plan.

These are serious gaps in knowledge that can affect medical treatment for people with asthma. These results are similar to the previous results.[10.12] Education of pharmacists in this area will certainly help improve the management of patients with asthma. Most pharmacists responded to the statements about the need for effective training with the appropriate approach to update their knowledge and skills.[13] This study found that pharmacists agreed on the need for special training. This result is almost similar to that of Chiang et al. This is important when responding to claims about the impact of this disease on patients, as it measures pharmacists' concern with the patient's quality of life.

The influence of bronchial asthma on the patient is very high, since its manifestations include impaired lung function and symptoms such as wheezing, shortness of breath, changes in their life.[14]

In this study most pharmacists considered the impact of asthma on patients to be significant. This result is slightly less than that of Chiang et al.[10] The health worker's belief in the patient's role in asthma management is measured by their attitude against patient autonomy. Its positive nature demonstrates the commitment of health care providers to empowering patients to solve . The value of careful observation is very important in the treatment of asthma. The goal of asthma treatment is to achieve clinical control and prevent of recurrent. In addition, pharmacists must be able to provide adequate control of asthma, which can be of great help to patients.[15] This study found that the attitude of respondent is lower than study occur in Chiang et al.[10]

This is very important in response to the claims about the role of pharmacists in the treatment of asthma, as it reflects pharmacists' concerns about their role in the prophylactics of asthma. Pharmacists, play an important role in counseling asthmatic patients how to use inhalers correctly.[16.17] This study showed that almost all pharmacists believed that they played an effective role in the treatment of asthma. The current results are related to pharmacists' follow-up programs that can provide better patient education, better patient knowledge and the correct use of inhaled medications.[18,19]

CONCLUSIONS

This study showed that pharmacists do not have enough knowledge about asthma. However, hospital pharmacists

had a higher knowledge value than community. The pharmacy association should provide continuous educating program to the pharmacists to increase their asthma knowledge and skill.

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