

Measurement Of Pharmacists' Diabetes Mellitus General Knowledge In Basrah Metropolitan Area

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ABSTRACT

The number of patients with Diabetes Mellitus (DM) more than tripled over the past 4 decades. Education can play a role in the improvement of adherence to medication regimens. Pharmacists could play a vital role in patient education. The study aims to determine the level of DM knowledge among pharmacists in the Basrah metropolitan area. A survey was conducted among hospital pharmacists in different hospitals in the area in the period between January 2019 and April 2019. A total of 50 pharmacists participated in this study. The knowledge test score mean was 16.96 and the standard deviation was 2.996. Ten of the pharmacists (20%) got good scores, 76% of the individuals (n=38) scored in the borderline region and only 2 participants (4%) obtained poor results. Most of the pharmacists had moderate knowledge about DM which warrants the need to apply continued medical and pharmaceutical education.

Keywords: Basrah metropolitan area; pollutants; of pharmacists' diabetes

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INTRODUCTION

According to the American Diabetes Association (ADA), Diabetes Mellitus (DM) is defined as the metabolic illnesses identified by an increase in blood glucose level above normal due to problems in insulin release and/or insulin actions (1). It is classified into type 1, type 2, gestational, and other specific kinds of diabetes (2). The number of patients with DM increased from 108 million in 1980 to 422 million in 2014 with a more rapid increase in low- to middle-income countries. The prevalence of the disease almost rises two-fold from 1980 to 2014 (3). Cardiovascular disease risks doubled or tripled in individuals with DM (4).

Pharmacists are considered as important building blocks of medical teams, and their role in patient education is getting bigger constantly (5). Pharmacists should educate patients about the proper use of their medication and adhere to their medication regimen (6). The role of a pharmacist as a teacher was recognized by the World Health Organization (WHO) as one of the seven hallmarks a pharmacist can be described (7). Nevertheless, patient adherence to prescribed medication is still a problem globally especially with long term therapies for chronic diseases (8).

Michigan Diabetes Knowledge Test (MDKT) has been used previously to assess general knowledge about diabetes (9). It was developed by the Michigan Diabetes Research Training Center (MDRC) and it consists of 23 test questions. The first 14 questions best assess the knowledge about people who do not use insulin, while the rest best describe knowledge about insulin use in DM treatment (10). The validity and reliability of the test already assessed (11). It provides a convenient and dependable method to measure general knowledge about DM (12). Although the MDKT is intended for the general population, it still can reflect a pharmacist's knowledge about diabetes.

METHODOLOGY

Fifty pharmacists from the Basrah metropolitan area were chosen based on the following selection criteria. First, they should be registered pharmacists at the Iraqi Pharmacists Syndicate and the Iraqi Ministry of Health.

Second, working at a hospital in Basrah metropolitan area and working as a part-time pharmacist in a community pharmacy as well. This ensures that the selected pharmacists are those who engaged the most with diabetic patients. The questionnaire was administered in English with a slight modification to reflect the Iraqi context. It took each participant approximately 15 minutes to complete the test. The MDKT was administered in the form of multiple-choice questions with only one correct answer. Each correct answer was given one point, so the total was 23 points. The total knowledge scores were classified into "good" for scores ranging (20–23), "borderline" for (13–19) and "poor" for (0–12) scores. The knowledge about non-insulin treatments was categorized as (Poor) for those who score (0-7), (Moderate) for those who score (8-11) and (Good) for those who score (12-14). On the other hand, the insulin treatment group divided into [Good], [Mediocre] and [Poor] for scores (8-9), (5-7) and (0-4) respectively.

ETHICAL CONSIDERATIONS

Ethical Review Board (ERB) approval was taken prior to the conduction of the survey from the ERB at the College of Pharmacy/University of Basrah. All of the 50 pharmacists willingly participated in the study.

RESULTS

Table 1 shows the sociological and demographical characteristics of the study group.

Category	Count	Percentage
Gender		
M	32	64%
F	18	36%
Total	50	100%
Age ¹		
21-30	30	60%
31-40	19	38%
41-50	1	2%
Total	50	100%
Education		

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BSc	33	66%
MSc	10	20%
PhD	7	14%
Total	50	100%

¹ Age in years

The percentage of male participants was 64% (n=32). The majority of the study group were pharmacists with a BSc degree (66%, n=33). Most of the participants were

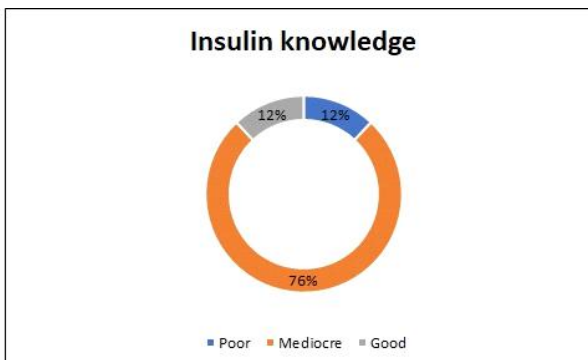
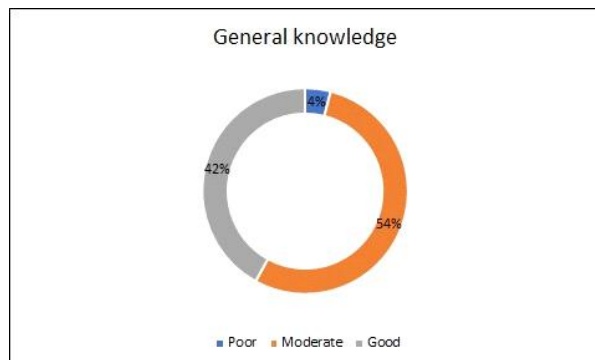
young pharmacists in the age group (21-30) years (n= 30, 60%) and only one was in the age group (41-50). The average knowledge test score was 16.96 with a standard deviation of 2.996. The majority of the pharmacists scored in the borderline region (13-19) with a percentage of 76%. Only 2 test-takers got poor knowledge and 10 of the individuals obtained good results i.e. (20-23) scores (Table 2).

Category	Total n (%)	Education level			Gender		Age ¹		
		BSc n (%)	MSc n (%)	PhD n (%)	F n (%)	M n (%)	21-30 n (%)	31-40 n (%)	41-50 n (%)
Poor	2 (4)	2 (6)	0 (0)	0 (0)	1 (6)	1 (3)	2 (7)	0 (0)	0 (0)
Borderline	38 (76)	24 (73)	9 (90)	5 (71)	11 (61)	27 (84)	20 (67)	17 (89)	1 (100)
Good	10 (20)	7 (21)	1 (10)	2 (29)	6 (33)	4 (13)	8 (26)	2 (11)	0 (0)
Total	50 (100)	33 (100)	10 (100)	7 (100)	18 (100)	32 (100)	30 (100)	19 (100)	1 (100)

*Mean=16.96, Standard Deviation=2.996. n=number of counts. %=percentage. ¹ age in years

As it is shown in table 2, most of the pharmacists with a BSc degree scored in the borderline part (73%, n=24), while only 2 of them got poor results. No one from those who hold post-graduate degrees (MSc or Ph.D.) scores poor scores, with the majority scoring in the borderline range (n=9, 90%) and (n=5, 71%) for MSc and Ph.D. degree holders respectively. The highest percentage of participants who got good results were with pharmacists who have Ph.D. degrees (29%). Thirty-three percent of the females scored good results with only one who got

poor scores (6%). Although less percentage of male pharmacists got good scores (13%), as compared to females, only one male pharmacist got poor scores (3%) (Table 2). The findings in table 2 show that newly graduated pharmacists comprise the majority of those who score good results (n=8) and that they comprise more than half of those in the borderline sector (n=20). Figures 1 shows the percentage of knowledge related to treatments without-insulin and with-insulin.



From the figure, it could be implied that the participants have better knowledge when it comes to treatment without insulin as compared to the insulin treatment group.

DISCUSSION

Significant diabetic patient education improves blood glucose control and quality of life in patients with DM (13). Studies had shown that continued medical and pharmaceutical education can enhance pharmacists' attitudes toward diabetes, thus improve the quality of life for the patients (14). A most recent study found that patient education is regarded as one of the effective interventions in improving medication adherence (15). The present study is one of a kind in the Basrah metropolitan area concerning the pharmacists' general knowledge about diabetes, which will hopefully contribute to taking necessary actions to advance the pharmacists' knowledge leading to improving the services provided to the patients. Although the majority of the participants had scores in the intermediate region, continuing medical and pharmaceutical education is highly recommended to improve these scores. This is

supported by the fact that those who scored good results are either young with fresh information or those who have post-graduate degrees. Limited time, limited resources and increasing administrative responsibilities for the pharmacists are amongst the many factors that contribute to the findings of this survey.

CONCLUSION

Increases supervision and the implementation of continued medical and pharmaceutical education would improve the outcomes of such a study. More systematic studies that include more pharmacists from the entire country-Iraq-would shed light on the reality of pharmacists' knowledge about DM. This should help in determining the necessary steps to improve the results which will ultimately benefit the patients.

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