

## Knowledge, attitude and practice of pharmacists regarding dietary supplements in Riyadh, Saudi Arabia

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### Abstract

**Background:** Dietary supplements are a term that refers to several products such as vitamins, minerals and high energy compounds. Using these supplements is very common among individuals in different communities. Pharmacists had important effect on the public health as they help individuals to choose supplements and provide them with information.

**Aim:** To assess knowledge, attitude and practice of pharmacists toward dietary supplements.

**Methods:** This study is cross sectional, it was conducted on pharmacists in Riyadh region, Saudi Arabia, using an online survey.

**Results:** There were 500 pharmacists included in this study, 75.4% had good knowledge, 71.6% had positive attitude and 50.8% had good practice. Both of knowledge and attitude were significantly affected by age, experience years and level of education, whereas practice was significantly affected by experience years only (P-value<0.05).

**Conclusion:** There were good knowledge and positive attitude toward dietary supplements among pharmacists, however close percents had either good or bad practice.

**Keywords:** Dietary supplements, Pharmacists, KAP.

### Introduction:

Dietary supplements involve several products such as minerals, vitamins, high energy compounds and herbal products <sup>[1]</sup>. Dietary supplements aren't considered part of conventional medicines <sup>[2]</sup>. Using these supplements is affected by characteristics of individuals and the diseases they suffer <sup>[3]</sup>. Individuals who seek for weight loss or weight gain use supplements commonly <sup>[4]</sup>. These supplements are sold very widely in pharmacy, although there is no specific approval or scientific usage for these products <sup>[5]</sup>. It was reported by American Society of nutrition that dietary supplements are used by large proportion of population in their routine life <sup>[6]</sup>.

Dietary supplements or complementary alternative medicine (CAM) is an issue that pharmacists face <sup>[7]</sup>. Pharmacists are most important interface of the medicine field <sup>[7]</sup>, they have great impact on public health <sup>[8]</sup> as they help patients and individuals to choose dietary supplements safely <sup>[9]</sup>. Also, they can provide information to patients regarding their interaction with conventional medicine <sup>[10]</sup>. It was found that persons who consume dietary supplements ask pharmacists about these supplements <sup>[11]</sup>. It was found in Australia that 87% of consumers thought that pharmacists were able to know the effectiveness of dietary supplements <sup>[12]</sup>. Pharmacists should have

enough knowledge about the advantages and risks of each treatment method <sup>[13]</sup>. This study was performed to investigate the knowledge, attitude and practice of pharmacists toward dietary supplements.

### Subjects and methods:

#### Subjects and study design:

This is cross sectional study which was conducted on pharmacists in Riyadh, Saudi Arabia, in the period from June 2018 to August 2018. The study was performed using an online survey which included 4 parts to assess demographics of participants, knowledge, attitude and practice regarding dietary supplements.

#### Statistical analysis:

Software package for statistical analysis version 20 was used to analyze the data. Frequency and percent were used for categorical variables. Chi-square was used to find associations and correlations between different variables. P-value <0.05 was considered significant.

#### Results:

The present study included 500 pharmacists from Riyadh city, Saudi Arabia. Males were more dominant 350(70%) than females 150(30%), and those with age less than 25 years old were more dominant 170(34%) among other age groups. Those with experience less

than 5 years were 178(35.6%), followed by those with 5-10 years 122(24.4%) then those with experience of 11-20 years and >20 years old 100(20%) for each group. 400(80%) of participants reported that their monthly income was enough. Majority of pharmacists 310(62%)

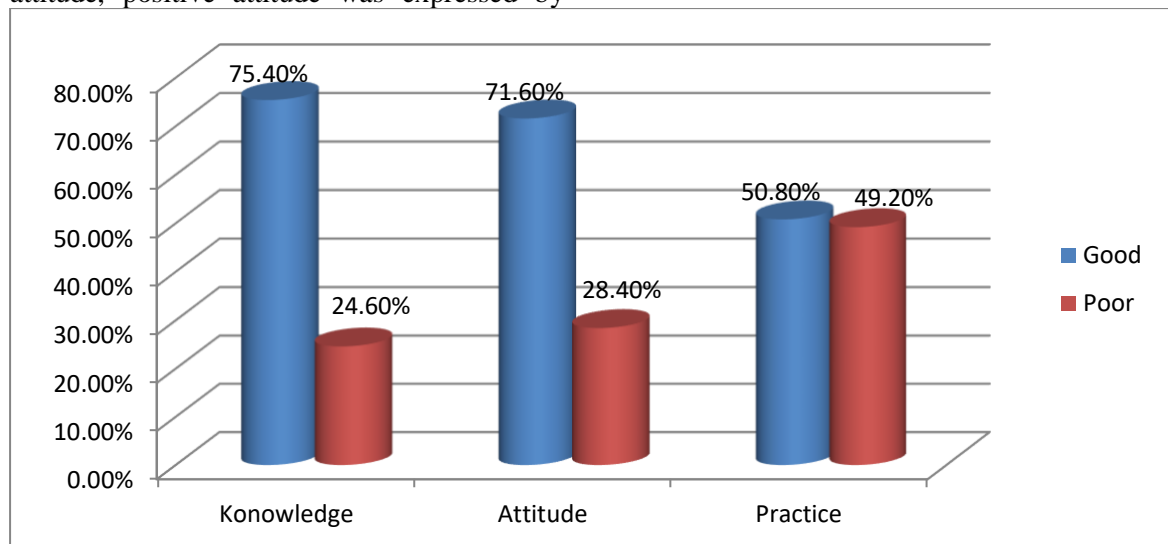
reported having bachelor in pharmacy, while 78(15.6%) reported having diploma, whereas 73(14.6%) and 39(7.8%) reported having master and doctor degree in pharmacy respectively,( table1).

**Table1: Characteristics of pharmacists**

Characteristics	N(%)
Gender	
Male	350(70%)
Female	150(30%)
Age	
<25	170(34%)
25-35	130(26%)
36-45	112(22.4%)
>45	88(17.6%)
Experience	
<5 years	178(35.6%)
5-10 years	122(24.4%)
11-20 years	100(20%)
>20 years	100(20%)
Monthly income	
Enough	400(80%)
Not enough	100(20%)
Level of education	
Bachelor of science in pharmacy	310(62%)
Diploma in pharmacy	78(15.6%)
Master of science in pharmacy	73(14.6%)
Doctor of pharmacy	39(7.8%)

The levels of knowledge, attitude and practice are shown in figure1. There were 377(75.4%) found to have good knowledge, whereas 123(24.6%) had poor knowledge. Regarding attitude, positive attitude was expressed by

358(71.6%), while negative attitude was expressed by 142(28.4%). Close percents were obtained regarding good and bad practice 254(50.8%) and 246(49.2%) respectively.



**Fig1: Knowledge, attitude and practice of pharmacists (for attitude; poor=negative, for practice, poor=bad)**

The correlations between different characteristics and knowledge, attitude and practice are shown in table2. The level of

knowledge was significantly affected by age (P-value=0.02), experience years (P-value=0.001) and level of education (P-value=0.01). Those

with age of 25-35 years old, experience years of less than 5 years and had diploma in pharmacy tended to have good knowledge than other participants. The same was found regarding attitude, where attitude was significantly influenced by age (P-value=0.01), experience years (P-value=0.002) and level of education

(P-value=0.006). Positive attitude was more expressed by participants with age of 25-35 years old, experience years of less than 5 years and had diploma. Practice was only influenced by experience years (P-value=0.05), where those with experience years of 5-10 years were more prone to have good practice.

**Table2: Correlations between demographics of pharmacists and knowledge, attitude and practice**

Characteristics	Knowledge N(%)		Attitude N(%)		Practice N(%)	
	Good 377	Poor 123	Positive 358	Negative 142	Good 254	Bad 246
Gender						
Male	297(59.4%)	53(10.6%)	293(85.6%)	57(11.4%)	179(35.8%)	171(34.2%)
Female	80(16%)	70(14%)	65(13%)	85(17%)	75(15%)	75(15%)
P-value	0.5		0.9		0.1	
Age						
<25	100(20%)	70(14%)	149(29.8%)	21(4.2%)	85(17%)	85(17%)
25-35	112(22.4%)	18(3.6%)	100(20%)	30(6%)	65(13%)	65(13%)
36-45	100(20%)	12(2.4%)	79(15.8%)	33(6.6%)	52(10.4%)	60(12%)
>45	65(13%)	23(4.6%)	30(6%)	58(11.6%)	52(10.4%)	36(7.2%)
P-value	0.02		0.01		0.09	
Experience						
<5 years	114(22.8%)	64(12.8%)	157(31.4%)	21(4.2%)	104(20.8%)	74(14.8%)
5-10 years	102(20.4%)	20(4%)	100(20%)	22(4.4%)	105(21%)	17(3.4%)
11-20 years	77(15.4%)	23(4.6%)	59(11.8%)	41(8.2%)	25(5%)	75(15%)
>20 years	84(16.8%)	16(3.2%)	42(8.4%)	58(11.6%)	20(4%)	80(16%)
P-value	0.001		0.002		0.005	
Monthly income						
Enough	327(65.4%)	73(14.6%)	300(60%)	100(20%)	255(51%)	145(29%)
Not enough	50(10%)	50(10%)	58(11.6%)	42(8.4%)	58(11.6%)	42(8.4%)
P-value	0.7		0.8		0.4	
Level of education						
Diploma in pharmacy	201(40.2%)	109(21.8%)	259(51.8%)	51(10.2%)	154(30.8%)	156(31.2%)
Bachelor of science in pharmacy	68(13.6%)	10(2%)	48(9.6%)	30(6%)	39(7.8%)	39(7.8%)
Master of science in pharmacy	70(14%)	3(0.6%)	30(6%)	43(8.6%)	38(7.6%)	35(7%)
Doctor of pharmacy	38(7.6%)	1(0.2%)	21(4.2%)	18(3.6%)	23(4.6%)	16(3.2%)
P-value	0.01		0.006		0.7	

### Discussion:

The current study included 500 pharmacists, by assessing their knowledge, attitude and practice regarding dietary supplements. It was found that good knowledge was present among 75.4% and 71.6% showed positive attitude toward dietary supplements, whereas only 50.8% had good practice. It was reported in 2007 that the positive attitude was related to the good knowledge about dietary supplements [14]. In a previous Saudi study [7], it was found that there was lack of information. A study carried by Clauson *et al.* [11] showed that there was inadequate knowledge about dietary supplements of pharmacists. In agreement with our findings, it was reported by MehrAlian et al

[15] that pharmacists with higher knowledge had more positive attitude and better performance toward the supplements, the same was reported by Iranian study [9], however in our study there was high percent of pharmacists had good knowledge and positive attitude, whereas performance wasn't so good. A study done by Portyansky [16] demonstrated that most pharmacists had positive attitude toward dietary supplements and this conclusion is in agreement with our findings. A study was conducted in Canada showed that 63% of pharmacists had positive attitude toward alternative treatment [17]. On the contrary, studies was undertaken in USA found that 50%

of pharmacists had negative attitude toward dietary supplements and believed they weren't safe [18, 19]. The differences among these different results studies could be attributed to the differences in the community, level of education and awareness degree among the studied groups. The current study showed that knowledge of pharmacists was significantly associated with age, years of experience and education level, pharmacists with higher knowledge were those of age of 25-35 years old, experience less than 5 years and having diploma in pharmacy. Pharmacists with experience less than 5 years were more prone to have better knowledge and this can be explained by their scientific experience which increase and improve their knowledge, also availability of time that enabled them to read more than participants with older experience, also those young less experienced pharmacists read the more recent researches than older ones who may prefer holding on old information. It was demonstrated in previous Saudi study that knowledge was affected by gender [7] and this was in contrast to our findings as sex had no influence on level of knowledge among our participants. Our study found no influence of sex on KAP of pharmacists. It was reported in Iranian study [9] that knowledge and performance weren't affected by gender, whereas attitude was affected by gender and females had more positive attitude toward dietary supplements. Also, it was reported that knowledge wasn't affected by age, education and work experience and regarding performance, gender had no significant effect on performance [9]. Another study reported that age and work experience didn't influence knowledge, whereas gender, position and education affected knowledge significantly [15]. Regarding attitude, the current study revealed that attitude of pharmacists was significantly affected by their age, experience and education level. Pharmacists with age less than 25 years tended to have positive attitude among other age groups, also those with experience less than 5 years and had diploma in pharmacy tended to have positive attitude compared to other pharmacists. Practice in our study was affected only by experience years of the pharmacists; those with age of 5-10 years had more practice than other participants. Gender was found to have no effect on both attitude and practice in previous Saudi study [7]. This finding is in agreement with our results, however older age

participants in the previous Saudi study [7] were found to be more familiar with this type of treatment in comparison with younger age, and however, our results were not comparable with this conclusion.

#### **Conclusion:**

There were good knowledge and positive attitude toward dietary supplements, whereas there was poor practice. Additional studies are required to justify our conclusions and add more information and knowledge to deal with these topics of studies.

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