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Herbal Medicine Between Current Practice and Knowledge Needs: A National Cross-Sectional Survey in Iraq

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Abstract

Herbal medicine has become popular worldwide. Its widespread use within the general community makes it crucial to recognize how pharmacists can satisfy customers' information needs and lead to quality use within the pharmacy setting. This work aims to assess the knowledge, practice, and attitude regarding herbal products among community pharmacists practicing in Iraq. The goal was to evaluate the current role of pharmacists in patient counseling and identify factors that hinder them from fully utilizing their scope of practice. This research was completed in a nationwide cross-sectional model between November 2022 and April 2023, utilizing a detailed questionnaire offered to seven hundred twenty-two licensed pharmacists practicing in ten different governments in Iraq. Through in-person meetings, applicants finished a five-part comprehensive questionnaire of 33 inquiries. The resulting data were evaluated using a statistical package for social sciences; Pearson's R test was utilized to correlate some variables. a P-value of < 0.05 was judged as statistically significant. Results showed that most participants were male (56.0%) aged between 23-40 years, (89.6%) working in Al-Najaf, Karbala, and Baghdad. Most pharmacists (71.3%) had 1-9 years of experience practicing with a bachelor's degree (91.9%). Data showed that 48.8% of pharmacists had moderate knowledge regarding herbal products, and more than half of the participants had negative attitudes and poor practices toward herbal medicine (54.6% and 51.1, % respectively). The source of knowledge was mainly derived from the pharmacy curriculum, and the internet website was the other source of information. Limited time and information in phytotherapy were the main factors preventing pharmacists from occupying their full scope of practice. Most Iraqi pharmacists need the proper knowledge and skills to improve their practices and attitudes toward herbal medicine.

Keywords: Complementary and alternative medicine, Herbal remedies, Dietary supplement, Pharmacist role.

Introduction

Nutraceuticals and herbal remedies, a form of complementary and alternative medicine (CAM), are increasingly used by individuals worldwide to treat various health issues under different national healthcare systems [1,2]**.** According to an estimate, medicinal plants are a fundamental source of healthcare and traditional medicine for approximately 80% of the population in developing countries [3]**.** The prevalent perception that herbal remedies are natural, safe, and efficient is to blame for their popularity [4]**.**

Research has emphasized the adverse consequences of complementary and alternative medicine (CAM) interventions [5,6]. The possibility for interactions between herbal remedies and pharmaceutical drugs may be heightened, especially among patients with chronic illnesses undergoing numerous pharmacological treatments for concurrent disorders **[6]**. Simultaneously using herbal items alongside conventional cardiovascular medications may result in unforeseen and severe outcomes **[7]**. An instance of potential concern involves the potential for garlic or ginger to heighten the risk of bleeding when used with warfarin, heparin, and aspirin [7]. Herbs containing hydro colloidal carbohydrate components, such as flaxseeds, have the potential to form complexes with medications, leading to a reduction in their absorption rates [8]. A study has revealed that green tea has been associated with reduced calcium absorption, which raises the probability of dysrhythmias in individuals undergoing therapy with cardiac glycosides **[9]**. Patients given drugs with a narrow therapeutic index face increased vulnerability to pharmacokinetic drug interactions, which present two notable challenges: pharmacotoxicity and treatment failure **[6,10]**.

Furthermore, research findings indicate that a significant proportion of women, approximately 67%, employ herbal remedies to alleviate perimenopausal symptoms **[11]**. Additionally, approximately 45% of women resort to herbal interventions during pregnancy. Moreover, it has been observed that over 45% of parents provide herbal medications to their children for diverse medical ailments, with the underlying belief that these remedies are safe **[6,11]**.

Nevertheless, several studies have provided evidence regarding the hepatotoxic properties of certain herbal medicines in the mentioned groups [12-14]. At the same time, additional research has established a connection between hepatotoxicity and liver injury concerning specific weight loss products [14].

Due to the low disclosure rate of patients to their healthcare professionals owing to concerns over permission, lack of interest, or unwillingness to assist, risks of adverse reactions and toxicity may be increased [15-18]. Such a lack of expert oversight might expose the customer to several problems.

Pharmacists are among the medical professionals most positioned to encourage the efficient and secure use of CAM products by supplying patients with factual information [15]. Aware of this critical role of pharmacists in monitoring CAM use by patients, Professional associations, such as the American College of Clinical Pharmacy (ACCP), the American Society of Health-System Pharmacists, and the Canadian Society of Hospital Pharmacists, have recommended that the profession of pharmacy actively embrace supplements and nutraceuticals as part of the pharmacist's field of practice [19]. The ACCPs added that the pharmacist's engagement in herbal products is a part of their roles in pharmaceutical care, clinical pharmacy practices, and collaborative healthcare teams [20]. Pharmacists are responsible for improving medication safety by monitoring and preventing adverse interactions, including the risks posed by herb-drug interactions. Despite this significant dedication to encouraging the proper use of CAM products by pharmacists, incorporating CAM into the pharmacy education curriculum has trailed [21], leaving many pharmacists unaware of the health impacts of CAM products [19], many pharmacists appear to graduate with little knowledge of natural health products, making them ill-equipped to implement these recommendations.

Limited research has been conducted on the current curricula of Bachelor of Pharmacy programs in developing countries ([22,23]). The study's findings unequivocally demonstrated a deficiency in allocating credit hours for acquiring Pharmacognosy knowledge within the university context. This trend is observed in all Gulf nations, Africa, and certain Middle Eastern countries, including Jordan and Lebanon [22,23]. A research investigation in Iraq revealed comparable outcomes, indicating a reduced emphasis on recognizing pharmacognosy compared to other disciplines within the field of pharmaceutical science [24]. The phenomenon mentioned above has the potential to significantly impact the comprehension of Pharmacy graduates concerning herbal medicine and its implications for patient well-being and safety [22,23]. Hence, including novel and advanced courses in B. Pharm curricula, such as Phytotherapy, Phyto pharmaceutics, Herbal Therapy, and Natural Medicine, is imperative for a well-rounded understanding of pharmaceutical science [22].

Accordingly, the chief intention of this work was to evaluate knowledge, practice, and attitude (KAP) toward herbal products among community pharmacists practicing in Baghdad and several other Governments in Iraq to evaluate the current pharmacist's role in patient counseling and controlling drug-herbal interactions. The other aim of this research is to evaluate the demographic characteristics that predict differences in pharmacists' practice, on the one hand, and factors preventing pharmacists from occupying their full scope of practice, on the other hand.

A detailed inquiry form, composed of three primary sections, has been developed to assess pharmacists' Knowledge, Attitudes, and Practices (KAP). The knowledge section includes questions about the uses, side effects, and drug interactions of commonly available herbal products in the Iraqi market. The practice section evaluates the pharmacist's actions related to complementary and alternative medicine (CAM) products. These include selling, providing advice on safe usage, reporting adverse effects, and checking for potential interactions between herbal products and conventional medications. In addition, pharmacists' attitudes were assessed by inquiring about their perspectives on the regulations, safety, and efficacy of complementary and alternative medicine (CAM) products.

Materials and Methods

Study Design

This research was a cross-sectional nationwide questionnaire survey of pharmacists working in local pharmacies in Baghdad and surrounding governments of Iraq, namely (Karbala, Babil, Najaf, Thi-Qar, Basra, Maysan, Al-Muthanna, Al Anbar, and Ninawa. The survey was conducted between November 2022 and April 2023.

A Comprehensive questionnaire was administered to licensed pharmacists, intending to recruit at least one pharmacist from each community pharmacy in the mentioned areas. The inclusion criteria to undertake the survey were a fully licensed pharmacist practicing in a community pharmacy. In contrast, the exclusion criteria were incomplete forms or hospital-based pharmacists.

Data collection

In-person interviews with pharmacists in the chosen pharmacies were used to gather data, and a multi-part questionnaire was also filled out. Each interview took between 30 and 40 minutes.Completing the questionnaire indicated consent.The formula used to determine sample size was as follows [25].

$n=(Z_{1-\alpha})^2\times P(1-P)/d^2$

Where n=number to sample.

Z1-α is a normal standard variation (at $p<0.05$ = 1.96),

P is the accepted perception of pharmacists and is set to 0.5 depending on previous studies [26].

d is the maximum tolerable error for the prevalence estimate (e.g., ±0.05).

Inquiry form

The survey questionnaire was formulated through a complete analysis of relevant literature sources [26-33], with necessary adjustments made to align with the study's objectives. This form consisted of 33 closed-ended questions organized into seven distinct sections.

The first section (A) sought participants' characteristics with five questions. It identified gender, age, highest level of education, years of expertise, and the site of evaluated pharmacies.

Sections B, C, and D detected the KAP scores of pharmacists through several questions arranged as follows:

Seven inquiries were chosen for the knowledge part (Section B) to report the uses, side effects, and drug interactions of frequently purchased herbs in Iraqi drug stores. The original Bloom's cut-off figures were taken from various investigations and ranged from 80.0% to 100.0%, 60.0% to 79.0%, and 59.0%. These criteria were used to divide KAP into three tiers. The knowledge scores ranged from 0 to 7, and they were divided into three levels: high knowledge level (scores of 6 to 7), moderate level (scores of 4-5), and low level (scores of 0 to 3) [34-37].

Six closed-end questions were provided for the attitude (section C); the positive answer was denoted with one point, while the negative answer was expressed with zero. The total score for attitude varied from 0 to 6 and was expressed as follows: positive attitude from 5 to 6, neutral attitude from 3 to 4, and finally, negative attitude from 0 to 2 [34-37].

Eleven questions were asked for the practice part (Section D), and the replies were based on a five-point Likert scale. The total score was determined as follows (always denoted 5 points while often was given 4 points; sometimes was given 3 points; rarely was given 2 points, whereas never was given 1 point). The total number of points awarded for practice was 55. A practice score between 44 and 55 denotes excellent practice, whereas a score between 33 and 43 denotes fair practice. Additionally, a score of less than 33 denotes a poor performance.

Section E of the survey was designed to include four items adopted and modified from a review study by Jeremy et al. [38]. The present discussion focuses on the various factors that impede pharmacists from making recommendations about the usage of herbal products. Participants here answered with either agreed or disagreed with the questions.

Section F had one question with six multiple-choice answers that detected the information source the pharmacist employed in his profession. The last part of the questionnaire (Section G) had three questions that detected pharmacist satisfaction with the academic course content in the College of Pharmacy. The word ''herbal medicine or herbal medications'' was used during the inquiry to disregard vitamin and mineral use. Three pharmacy professionals assessed the questionnaire form's content validity. This form was pilot-tested on a solid sample of 5 pharmacists to evaluate the understanding, application, and viability of the pool of items. Based on the comments made, it was amended. The final form was retested again on another 5 Sample pharmacists.

Statistical analysis

Statistical software for social sciences was used to analyze the studied data (SPSS Version 26, Chicago, US). Descriptive statistical methods were used to summarize the data on demographic features and responses to questions regarding all questionnaire sections. The data were reported as frequencies (F) and percentages (%) for categorical variables. The KAP score was determined by adding all the participants' cumulative scores. Pearson's R test was utilized to correlate some variables. Statistical significance was defined as a P-value < 0.05.

Results

Demographic features of contributors

In this study, there was a sum of 722 pharmacists contributed to this national survey. The geographic distribution of participants throughout the different governorates is shown in (Table 1). The highest percentage of respondents who agreed to take this survey was in the Al-Najaf (16.34 %) and Babil (14.54%) governments located to the south of the capital Baghdad. Baghdad participants were represented by 13.85% of total pharmacists in this study.

Table 1. Distribution of participants in different governments of Iraq

Governorates	Number of Participants (N 722)	Percentage (N 722)
Baghdad	100	13.85%
Karbala	74	10.24%
Babil	105	14.54%
Al-Najaf	118	16.34%
Al-Nassyria	58	8.03%
Basra	70	9.69%
Maysan	62	8.58%
Al-Muthanna	35	4.84%
Al-Anbar	63	8.72%
Ninawa	37	5.12%
Total	722	100%

The first part of the survey showed various characteristics of the participants, as represented in Table 2. Our results showed that there was a significant difference between the percentage of males to females (P value< 0.05); moreover, it was also shown that the majority of participants (89.6%) were aged between 23-40 years which was considered significant as compared with other age groups. It was also noted that more than 90% of pharmacists were practicing with their bachelor's degree, and only about 8% collectively (5.4% master's and 2.9% Ph.D. degrees) had post-graduate degrees in pharmaceutical sciences. Furthermore, more than half of the participants (71.3%) had less than ten years of practice experience compared to 15.9%, who had less than one year of practice. Only 9.3% of all participants had 10-19 years of experience, and 3.5% had more than 20 years of practice.

Table 2. Demographic characteristics of participants

Characteristics		N (722)	%	M	P Value
Gender	Male	404	56.0%	1.4404	0.001
	Female	318	44.0%		
Age Group	23-40	647	89.6%	1.1080	0.000
	41-69	72	10.0%		
	≥70	3	0.4%		
Level of Education	Bachelor	662	91.7%	1.1121	0.000
	Master	39	5.4%		
	PhD	21	2.9%		
Years of Expertise	< 1 year	115	15.9%	2.0028	0.000
	1-9 years	515	71.3%		
	10-19 years	67	9.3%		
	≥ 20years	25	3.5%		

KAP analysis of participants

In this study, the internal consistency reliability of the final data was measured using Cronbach's coefficient. The value of Cronbach's alpha coefficient for the questionnaire was 0.750, which falls within the acceptable threshold for internal consistency. Cronbach's coefficient for the knowledge part was 0.73.

Results regarding the knowledge part showed a significant difference (p <0.05) between participant knowledge of herbal remedies and their interaction with conventional therapy. Most participants (48.8%) had moderate knowledge compared to 31.9% of participants with poor knowledge and 19.4% with high knowledge of herbal products (Table 3).

Table 3.The frequencies and percentages of participant pharmacists who accurately responded to the seven knowledge questions.

Knowledge Test Question	Response	F (%)	Correct Answer
Both Ginkgo and Ginger can increase the risk of bleeding when combined with warfarin.	True	450 (62.3%)	TRUE
	False	272 (37.7%)	
Omega-3 is beneficial for patients suffering from Cardiovascular disorders.	True	584(80.9%)	TRUE
	False	138(19.1%)	

Garlic products can be safely taken with warfarin.	True	436(60.4%)	FALSE
	False	286(39.6%)	
Ginkgo may improve blood circulation and could be used to delay dementia.	True	492(68.1%)	TRUE
	False	230(31.9%)	
Concurrent use of ginseng and anti-diabetic agents may increase the risk of hypoglycemia.	True	335(46.4%)	TRUE
	False	387 (53.6%)	
St John's wort may reduce the efficacy of digoxin.	True	274(38.0%)	TRUE
	False	448(62.0%)	
Taking licorice and furosemide together might cause a decrease in potassium levels.	True	388 (53.7%)	TRUE
	False	334(46.3%)	

For the attitude part, Cronbach's coefficient was 0.71, and the data showed that more than half of pharmacists, 394 (54.6%,) had negative attitudes toward herbal remedies as compared to 57 (7.9%) pharmacists with positive attitudes, which was considered a significant difference ($p<0.05$). The descriptive analysis of the attitude questions is represented in Table 4.

Table 4. Descriptive analysis for the attitude questions.

Altitude Question	Response	F (%)
Are you confident advising patients to use herbal products?	Yes	329 (45.6%)
	No	393 (54.4%)
Do you recommend herbal products for simple remedies instead of medication?	Yes	368(51.0%)
	No	354(49.0%)
Do you believe that herbal products should be sold only in pharmacies?	Yes	436(60.4%)
	No	286(39.6%)
Do you think that herbal products have fewer side effects than conventional medicines?	Yes	291(40.3%)
	No	431(59.7%)
Do you agree to dispense herbal products concomitantly with conventional medication to the same patient?	Yes	271(37.5%)
	No	451 (62.5%)
Do you believe that herbal remedies have enough safety and efficacy study data?	Yes	248(34.3%)
	No	474(65.7%)

Moving to the practice score, Cronbach's coefficient was 0.82. In this section, results showed that 369 (51.1%) of pharmacists had poor practice, 279 (38.6%) had fair practice, and only 74 (10.2%) had a good practice toward herbal remedies. The detailed descriptive analysis for practice questions is represented in Table 5, and the overall KAP scores are summarized in Table 6.

Table 5. Descriptive analysis of practice questions

Practice Question	Always	Often	Sometimes	Rarely	Never
I sell herbal products and stock them in my pharmacy.	41(5.7%)	80(11.1)	286(39.6)	156(21.6)	159(22.0%)
I get inquiries from patients regarding the use of herbal products.	73(10.1%)	132(18.3%)	265(36.7%)	138(19.1%)	114(15.8%)
I ask my patients about herbal products used before dispensing their prescriptions.	117(16.2%)	152(21.1%)	159(22.0%)	171(23.7%)	123(17.0%)
I advise patients on the safe use of herbal products.	178(24.7%)	147(20.4%)	171(23.7%)	129(17.9%)	97(13.4)
I ask my patients about their feedback after their use of herbal products.	126(17.5%)	164(22.7%)	197(27.3%)	115(15.9%)	120(16.6%)
I report any adverse effects that occur with patients using herbal products and document them.	90(12.5%)	120(16.6%)	168(23.3%)	154(21.3%)	190(26.3%)

I get referrals from physicians to my pharmacy regarding herbal products.	30(4.2%)	67(9.3%)	128(17.7%)	187(25.9%)	310(42.9%)
I regularly check for herbal-drug interaction and/or herbal-disease interaction.	122(16.9%)	98(13.6%)	203(28.1%)	125(17.3%)	174(24.1%)
I use trusted pharmacist websites to check for herbal /drug interactions as Medscape.	185(25.6%)	152(21.1%)	141(19.5%)	121(16.8%)	123(17.0%)
I counsel my patients about the safe use of herbal products while on conventional therapy and advise continuous monitoring for both when taken together.	133(18.4%)	154(21.3%)	192(26.6%)	116(16.1%)	127(17.6%)
I advise my patients to stop using herbal products while taking conventional therapy.	159(22.0%)	151(20.9%)	230(31.9%)	105(14.5%)	77(10.7%)

Table 6. Pharmacist's Knowledge, Attitude, and Practice Scores.

	Level	N (722)	Percentage	M(Std)	P value
Knowledge	High level of Knowledge (6-7)	140	19.4%	1.875(0.7054)	0.000
	Moderate Level of Knowledge (4-5)	352	48.8%		
	Poor Level of Knowledge (0-3)	230	31.9%		
Attitude	Positive attitude (5-6)	57	7.9%	1.533(0.638)	0.000
	A neutral attitude (3-4)	271	37.5%		
	Negative attitude (0-2)	394	54.6%		
Practice	Good Practice (44-55)	74	10.2%	1.591(0.6687)	0.000
	Fair Practice (33-43)	279	38.6%		
	Poor Practice (0-32)	369	51.1%		

The minimum score is 0; the Maximum score is 55.

Analyzing the relationship between pharmacists' characteristics (gender, level of learning, and years of expertise) and KAP scores (Table 7). Data disclosed that there was a negative correlation between KAP scores and the gender of participants. However, it was found that only attitude had a significant correlation ($P < 0.05$).

Moreover, it was shown that there was a significant negative correlation between age and knowledge, which indicated that younger pharmacists were keen to review and acquire more knowledge regarding herbal remedies than older pharmacists. Additionally, there was an insignificant negative correlation between age and practice ($P > 0.05$).

Table 7. Summary relationships between variables

		Knowledge	**Attitude**	**Practice**
Gender	Person's R	-0.037	-0.094	-0.059
	P-value	0.320	0.011	0.115
Age	Person's R	-0.087	0.023	-0.071
	P-value	0.020	0.540	0.056
Years of Experience	Person's R	-0.072	-0.014	-0.017
	P-value	0.055	0.705	0.645
Level of Education	Person's R	-0.064	0.021	-0.010
	P- value	0.087	0.577	0.790
	N	722	722	722

Analyzing the source of information that the pharmacists use in their practice, data showed that 39.25% of pharmacists rely solely on two primary sources represented by their academic knowledge during their academic years of education and internet

websites (35.27%). This shows the importance of updating and upgrading the academic courses given in college. The exact data is shown in Figure 1.

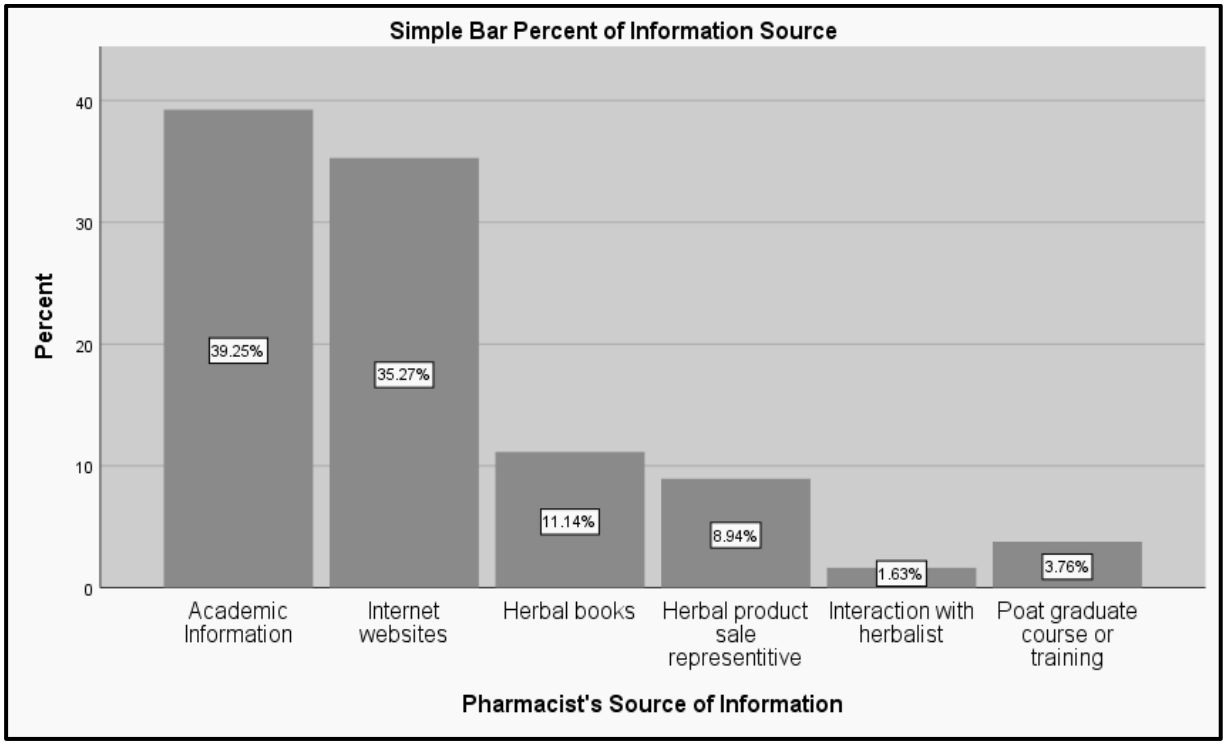

Figure 1. Pharmacist source of information

Moving to the other part of the survey and analyzing factors that prevent pharmacists from occupying their full scope of practice, results demonstrated that more than half of participants agreed that the absence of references and good knowledge regarding herbal remedies are one of the major obstacles in preventing a pharmacist from counseling their patients. Limited time and negative attitudes toward herbal products are the other factors to be considered. Table 8 demonstrates the complete data.

Table 8. Factors preventing pharmacists from proper counseling regarding herbal remedies.

Factor Question	Agree	Neutral	Disagree	P Value
I am unaware of any authenticated website to check drug-herbal interaction to help counsel my patients.	405(56.1%)	103(14.3%)	214(29.6%)	0.000
The quality of the items is below average; I don't think they are effective.	394(54.6%)	146(20.2%)	182(25.2%)	0.000
I seldom get the chance to talk about them with consumers.	464(64.3%)	91(12.6%)	167(23.1%)	0.000
My knowledge in this field is limited.	474(65.7%)	93(12.9%)	155(21.5%)	0.000

The last part of the survey discussed recommendations for pharmacists to improve their knowledge and practice skills. Results showed that 67.7% of participants agreed that the current pharmacognosy syllabus design and content are insufficient for basic knowledge and practice needs. Most pharmacists (65.9%) advocated for a change in the pharmacognosy syllabus, and 73.3% recommended adding a phytotherapy course to the fifth year of college education to fulfill the full scope of pharmacy practice. Results are shown in Table 9.

Table 9. Satisfaction of pharmacist with current Pharmacognosy syllabus

Question	Yes	No	P Value
Do you think academic lectures are enough for basic knowledge	233(32.3%)	489(67.7%)	0.000
Do you think the content of the pharmacognosy course needs to be changed?	476(65.9%)	246(34.1%)	0.000
Do you agree to add a phytotherapy course in the fifth year?	529(73.3%)	193(26.7%)	0.000

Discussion

Natural remedies are highly advertised, easily accessible to consumers, and frequently offered as over-the-counter (OTC) products [(39)]. Most safety difficulties are caused by incorrect self-administration by customers, which can result in toxicity issues, side effects, or harmful interactions with other treatments [(40,41)]. This necessitated a detailed national screening for most practicing pharmacists in Iraq to evaluate their current and needed knowledge in herbal medicine.

The findings of this survey indicate that most community pharmacists possess a modest level of knowledge, exhibit negative attitudes, and demonstrate inadequate practices concerning herbal items. The results collected were unrelated to the participants' degree of education or their years of professional experience. These findings align with the data obtained from other studies conducted in various countries, underscoring the significance of incorporating additional courses focused on phytotherapy and herbalism instead of solely providing foundational knowledge in the field of pharmacognosy [(42-48)]

Our data also indicates that most pharmacists largely depend on their academic training, which raises a crucial consideration about including herbal medicine training in the pharmacy education curriculum. Previous surveys conducted among medical and pharmacy students indicated that most respondents endorsed complementary and alternative medicine (CAM) education within their respective academic programs [(49,50)]. Integrating complementary and alternative medicine education into existing pharmacy curricula is intended to enhance students' prospects and foster a more inclusive attitude toward patient options to improve health outcomes. This initiative also seeks to enhance students' understanding and familiarity with CAM therapies [(51)]. Numerous Western nations have long implemented and advanced CAM education. The content of CAM courses is a topic of regular discussion and assessment [(52,53)]. Research conducted in Australia provided evidence supporting the inclusion of complementary and alternative medicine education in academic curricula. The study also highlighted the successful involvement of pharmacists in effectively and professionally engaging with health consumers [(54,55)].

The findings of our study have also substantiated the consensus among most participants about the endorsement and advocacy for the modification of the pharmacognosy syllabus, as well as the integration of a distinct phytotherapy course, particularly during the fifth year of pharmacy curricula.

One of the primary barriers impeding pharmacists from fully engaging in patient education is the need for adequate knowledge of herbal medicine and a limited understanding of reliable sources for drug and herbal interactions. This outcome is consistent with the findings of other investigations conducted by various researchers [(42-44)].

Conclusion

The findings of this study indicate that a significant proportion of pharmacists working in Iraq possess a reasonable level of knowledge regarding herbal medicine. However, their proficiency in counseling patients and effectively preventing or managing drug/herbal interactions needed to be improved. The identified deficiency in their practice pertained to their knowledge base, primarily acquired from formal education in pharmacy schools and online sources. Consequently, there is a need to revise pharmacy curricula to align with the practical requirements of the field. The current allocation of credit hours for Pharmacognosy knowledge at the university level may need to be revised, potentially impacting the comprehension of Pharmacy graduates regarding the utilization of Herbal Drugs, their associated side effects, and the interactions between herbs and drugs. This deficiency in education could have significant implications for the provision of patient care within the broader Health Care System. The potential impact of this phenomenon on the exploration and advancement of herbal medicine, particularly in medicinal drug discovery and development, must be considered. Additionally, it could impede research and development progress in Herbalism.

Recommendations

Pharmacy schools should consider offering students more comprehensive herbal medicine courses and a substantial focus on pharmacognosy throughout pharmaceutical courses. Along with education, pharmacists should know where to access reliable information about herbal medicine and their interactions with conventional medication. Moreover, the student should also be trained in community pharmacy regarding herbal medicine as a requirement for graduation.

Conflict of Interest

There is no conflict of interest in this study.

Ethics Statement

The study received ethical clearance from Al Zahrawi College University's ethical board. (AZUC Ref No.202/10/2022).

Author Contribution

Suhad Sami Humadi conceived and designed the study. Saif M Hassan and Salam W Ahjel performed and analyzed the data collection and interpreted the results. Suhad Sami Humadi wrote the initial draft of the manuscript and the full revised paper. All authors have read and agreed to the published version of the manuscript.

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طب الاعشاب ما بين الممارسات الصيدلانية الحالية واحتياجات المعرفة المهنية: دراسة استقصائية وطنية شاملة لمعظم محافظات العراق

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الخلاصة

لقد اصبح الطب العشبي والذي يشكل جزءا مهما من الطب البديل شائع الاستخدام في جميع انحاء العالم وبشكل سريع وملحوظ لاسيما في السنوات الاخيرة. هذا الاستخدام الواسع النطاق من قبل المواطنين يعطي اهمية بالغه للتعرف على مدى استعداد صيادلة العراق على تلبية احتياجات المواطنين للمعلومات الاساسية في أستخدام الادوية العشبية وبشكل آمن. ومن هنا جاءت أهمية هذه الدراسة لتقييم المعرفة والممارسات الصيدلانية الحالية, والتعرف على العوامل الاساسية لهذة الممارسات وبالتالي تقديم الاقتراحات المناسبة للارتقاء بالمستوى العلمي والمعرفي والتطبيقي. أجريت هذه الدراسة بمسح مقطعي في الفترة ما بين تشرين الثاني ٢٠٢٢ الى نيسان٢٠٢٣ باستخدام استبيان شامل و متعدد الفقرات, مؤلف من ثلاث وثلاثون سؤالا مبوبا في خمس اجزاء رئيسية . تم اعطاءهذا الاستبيان لعدد من صيادلة العراق في محافظات مختلفة ثم تحليل النتائج المستحصلة احصائيا باستخدام البرنامج الاحصائي SPSS اوضحت النتائج والتي شارك فيها سبعمائة واثنين وعشرون من الصيادله في عشر محافظات عراقية ان معظم المشاركين في هذا الاستبيان من الذكور التي تتراوح اعمارهم بين ٢٣ و ٤٠ سنة عمرية ممن لديهم خبرة مهنية اقل من عشر سنوات وممن هم بدرجة بكالوريوس في علوم الصيدلة. أظهرت البيانات ان غالبية الصيادلة كانت معرفتهم العلمية بالمستحضرات العشبية متوسطة كما وان الغالبية ايضا اظهروا مواقف سلبية وممارسات صيدلانية تطبيقية بجودة منخفضة ولا ترتقي للمستوى المطلوب في حماية المستهلك. وهذا يعود بالدرجة الاساسية لمصادر المعرفة لديهم حيث اوضح الصيادلة في هذه الدراسة ان المصدر الاساسي للمعرفة مستمدا من المنهج العلمي الاكاديمي للكلية الصيدلة بالاضافة الى مواقع الانترنيت . كما واضاف اغلب الصيادلة على ان قلة المعرفة بالمواد العشبية وضيق الوقت مع المستهلك هما من اهم العوامل الاساسية التي تحول دون تطبيق الدور الصيدلاني الكامل تجاة المستهلك. وعلية فان هذة الدراسة اثبتت فقر المعرفة لصيادله العراق بالمنتجات العشبية وتؤكد على ظرورة تطوير المناهج الاكاديمية لكليات الصيدلة بما يتناسب مع حاجة السوق العملية والتطبيقية.

الكلمات المفتاحية: الطب التكميلي والبديل ، العلاجات العشبية، المكملات الغذائية،دور الصيدلي