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“ARE SOCIAL PHARMACY COURSES NEEDED IN PHARMACY CURRICULUM IN LIBYA: FINDING FROM A CROSS SECTIONAL SURVEY WITH PHARMACY ACADEMICS”

Omar Saad Saleh Abrika*¹ and Mohamed Azmi Hassali²

Department of Pharmacology, Faculty of Medicine, Sebha University, P.O.Box 19838 Sebha, Libya
Discipline of Social and Administrative Pharmacy, School of Pharmaceutical Sciences, Universiti Sains Malaysia, 11800 Minden, Penang, Malaysia

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Correspondence to Author:

Dr. Omar Saad Saleh Abrika

Department of Pharmacology, Faculty
of Medicine, Sebha University, P.O.
Box 19838 Sebha, Libya

E-mail: edri7@yahoo.com

ABSTRACT: The focus of this exploratory study was to investigate pharmacy academics' perception of their role in the Libyan health. A cross sectional survey design was used in this study. Using a questionnaire developed following an extensive literature review, a survey cross was undertaken in Libya from June to September 2010. The respondents' were pharmacy academics who had graduated from pharmacy faculties and were teaching at Libyan pharmacy faculties naming universities (Alfateh Tripoli and Alarab Medical Benghazi). The majority of respondents' reported that they did not teach courses related to social pharmacy in their institutions. There was substantial willingness among academics to incorporate social pharmacy subjects to pharmacy curriculum in Libya. The results obtained from the present study revealed that social pharmacy subjects are not fully thought and given priority in the Libyan pharmacy curriculum.

INTRODUCTION: The shift in the pharmacists' role to one which involves pharmaceutical care calls for strengthened skills, and a greater knowledge of social and administrative sciences.

The increasing demands for pharmacy trained professionals in response to the rapid growth of the health care and pharmacy industry are reminders of the beneficial role pharmacists may play in health and health care issues. This is probably due to the fact that in developed countries, the professional role of the pharmacist has been transformed from merely being a medicine compounder and dispenser to a role of importance in many other areas.

Pharmacy education is changing, and this change is being driven by a call for curricular innovation as well as an explosion of new pharmacy programmes^{1, 2}.

The number of pharmacy programmes increased by 45% between 1996 and 2008². Continuously innovating and incorporating components of pharmaceutical sociology, as advocated by the Nuffield Foundation (FIP),³ has played an important role in the progression of academic studies and the orientation of practice in developed countries. As a result, many challenges in public health and health care have been contained.

In Canada pharmacy practice continues to move from a product focus to a patient focus⁴ while in the United Kingdom the system of pharmacy education is predicted to continue evolving over the coming years to meet the anticipated changing roles of pharmacists within the health care system⁵.

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Concomitant with the advances in pharmacy practice and services, which have contributed significantly to people's health in developed countries, there has been an underuse of pharmacists for patient care and public health efforts in the developing countries. These differences can be partly explained on the basis of differences between the pharmacy education systems of the developed and developing countries. One of the most attractive differences is the qualification of pharmacist. In the developed countries, any pharmacist is required to hold a BSc in pharmacy, while in the developing ones (e.g. India) to practice pharmacy require a Doctor of Pharmacy qualification⁶.

In general, the particular strengths of pharmacy services include their accessibility within many communities, and the opportunities they provide for advising on the management of health problems⁷. It is widely believed that pharmacists could make a greater contribution to the provision of primary health care,^{8,9} especially in developing countries⁷. In developing countries a significant proportion of the population has a high level of unmet health needs¹⁰. This issue has been addressed in the Middle East where,¹¹ pharmacy education has increasingly changed over recent decades, although progress in pharmacy practice is considered to be slow.

The authors of this paper also noticed that hospital pharmacists often possess an advanced degree and tend to have a higher level of practice compared with that of community pharmacists. Although academics and practitioners in this region are facing adversity there is still a great deal of interest in advancing the science and practice of pharmacy. An overview of the recent literature on pharmacy education has shown that, while in the developed world the ideal frontline pharmacists of the future (known as the "seven star pharmacists") are increasing in number, efforts to incorporate social pharmacy in pharmacy training are just beginning in many developing countries.

The notion of social pharmacy, the key concept that has enabled pharmacists in the developed countries to become active health care managers, is still unknown in most parts of the developing world. A common characteristic of these countries is that health care systems are generally deficient and the number of health care professionals is insufficient to meet increasing health needs.

One way to overcome this impediment would be the provision of holistic health services by pharmacists who had received some sort of training in the field of social and behavioural aspects of illness and health. In order for this to happen it would be essential to incorporate more pharmaceutical sociology components into the current pharmacy curricula.

Social pharmacy has been concisely defined as a discipline concerned with the behavioural sciences relevant to the utilization of medicine by both consumers and health care professionals¹². In an extension of the behavioural and psychological aspects related to pharmacy, areas of pharmacy administration such as pharmacy management and marketing have also been seen as fundamental components of social pharmacy¹³.

The World Health Organization (WHO), through a consultative group, pinpointed seven roles to which "future pharmacists" should aspire: caregivers, decision-makers, communicators, leaders, managers, lifelong learners, and teachers¹⁴.

Within this context, there is a need for future pharmacists to be trained in all aspects of social pharmacy as it provides a background for their involvement in patient-oriented services.

MATERIALS AND METHODS: The study was conducted in two Libyan Universities: Alfateh University Tripoli, and Alarab Medical University Benghazi. The questionnaire was developed on the basis of the qualitative part of the study and from an extensive review of literature. The questionnaire had four sections which covered demographic information, the current pharmacy curriculum, the academic skills for social pharmacy, and expectations about social pharmacy. The participants were randomly selected from academic pharmacists.

The questionnaires were distributed to 90 participants, who were approached either directly or via colleagues. The questionnaire included both closed and open questions and statements, and consisted of a series of questions prepared by the researchers with one version targeted at the academic pharmacists.

Content validity is the extent to which there is a need for the adequate coverage of all the domains of the constructs being examined¹⁵.

Content validity cannot be examined using statistical analysis and thus, a thorough exploration of the literature and an extensive search of measures used in the literature must be applied. Moreover, pre-testing is used to check on the validity of the constructs. In this case the measures used are reviewed by experts“ academicians or professionals on the relevancy and adequacy of the constructs¹⁶. The list of social science subjects in Table 2 was derived from a similar study by Ryan and colleagues¹⁷.

In Ryan's *et al.*, work all these subjects are considered under the umbrella of social pharmacy subjects in pharmacy schools¹⁷. For this study, content validity was also applied for the constructs in which the items were reviewed by a senior lecturer, and a lecturer in the Discipline of Social and Administrative Pharmacy, Universiti Sains Malaysia (USM). These professionals were asked to provide their overall opinion of the questionnaire and to list the questions in the order of their relevance and importance.

The more relevant and important questions were thus highlighted. To assess the face validity of the questionnaire, twenty five participants were solicited, who were asked for their views on the significance, worth, and simplicity of each question; they were also asked to identify any questions which, in their view, should be removed so as to make the questionnaire simpler. In addition to this, the participants were also invited to make further comments on whether the questions were easily comprehensible or not. Most of them suggested simplifying the questions.

The reliability test was applied to all the variables comprising all domains. The reliability of the tool was estimated on the basis of Cronbach's Alpha ($\alpha = 0.64$) as recommended¹⁸. Each section of the questionnaire included a set of statements for which responses were requested. Some questions required a “yes” or “no” response.

To indicate are level of agreement a 5-point Likert scale was used for some questions. Where 1 = *strongly agreed*, 2 = *agreed*, 3 = *neutral*, 4 = *disagreed*, 5 = *strongly disagreed*. There was a section inviting comments at the end of the questionnaire.

Data collection: Data were collected using a cross-sectional survey. During the period of three months, June to September 2010, a total of 90 questionnaires were distributed. A list of Libyan pharmacy faculties was obtained from the Ministry of Health Libya,¹⁹ and it was estimated that there were, on average, 25 to 55 pharmacist academics in each faculty; therefore, two faculties were selected by convenience sampling. The total number of potential participants was calculated by summing the number of academics from the two faculties who agreed to participate, identified from the information provided by each Director of Pharmacy.

Data analysis: Both non-parametric statistical tests and the appropriate descriptive statistics for demographic characteristics (mean and standard deviation for age) were performed using SPSS® for Windows, version 16²⁰. The demographic information that was collected, including age, gender, practitioner location, year in practice, highest degree currently possessed, current position at the place of practice and practicing of profession as a pharmacist, frequencies and descriptive statistic of each variable was reported and mean and standard deviation, was calculated.

The Fisher exact probability test was used to test the significance of association between independent variables and the dependent variables, statistical significance was accepted at P value of < 0.05 .

Ethical approval: Currently in Libya, there is no ethical committee that overlooks survey research issues. As part of the ethical requirement for this study, before the commencement of the interviews, we strictly adhered to the written consent of the participants. All participants were assured that their personal information would be kept confidential.

RESULTS: The demographic characteristics of respondents are summarised in **Table 1**. The data obtained with respect to academics who gave their opinions in response to the questions or statements are included in the **Table 1**. Ninety questionnaires were distributed to the pharmacy academics of both pharmacy faculties, with 65 sent to Alfateh University in Tripoli and 25 to Alarab Medical University in Benghazi. A total of 68 (76 %) completed the questionnaire. Mean age was 46.47 years with standard deviation (SD) = ± 8.3 years.

The respondents were 42 (61.8 %) male and 26 (38.2 %) female. The majority of the academics were Libyan (62; 82.40 %) with six (8.80 %) non-Libyan respondents. Fifteen (22.10 %) of the respondents were less than 40 years old, 34 (50.0 %) were in the age bracket of 41-50 years, 16 (23.50 %) were in the age bracket of 51-60 and three (4.40 %) were over 60 years of age. With regard to academic degree, 56 (82.40 %) of the academics had a PhD degree and 12 (16.60 %) had a M.Sc. degree.

Regarding the current position of the respondents, 12 (17.60 %) were professors, 14 (20.60 %) were associate professors, 16 (23.50 %) were senior lecturers, 18 (26.50 %) were lecturers and 8 (11.80%) held other positions. Regarding the number of teaching years, the majority of respondents (45; 66.20 %) were in the teaching bracket of 1-10 years, 11-20 years were 9 (13.20 %), 21-30 years were 10 (14.70 %), while more than 30 years were 4 (5.090 %) had more than 30 years of experience.

TABLE 1: PHARMACY ACADEMICS DEMOGRAPHIC INFORMATION (N = 68).

Variables	Frequency	Percent (%)
Gender	Male	42 (61.8)
	Female	26 (38.2)
Age (mean \pm SD)	(46.47 \pm 8.3)	
	31-40	15 (22.1)
	41-50	34 (50.0)
	51-60	16 (23.5)
	> 60	3 (4.4)
Practice setting	Tripoli	48 (70.6)
	Benghazi	20 (29.4)
Nationality	Libyan	62 (91.2)
	Non Libyan	6 (8.80)

Highest Degree	PhD degree	56 (82.40)
	Master degree	12 (17.60)
Current position	Professor	12 (17.6)
	Associate Professor	14 (20.6)
	Senior Lecturer	16 (23.5)
	Lecturer	18 (26.50)
	Others	8 (11.80)
Years in teaching	1-10	45 (66.2)
	11-20	9 (13.20)
	21-30	10 (14.7)
	> 30	4 (5.9)

Regarding their perception of the current pharmacy curriculum in the two pharmacy faculties, the pharmacy academics were asked about the pharmacy curriculum; the results are shown in **Table 2**. With respect to providing undergraduate pharmacy education, the majority of respondents did not teach social science subjects, including economics, sociology, psychology, anthropology, communication skills, health promotion or education, social epidemiology, geography, business management and administrative pharmacy in the undergraduate curriculum. Only some subjects, such as the history of pharmacy or medicine (55; 80.9%), public health/health policy (42; 61.8%) and law/ethics (37; 54.4%) were taught at the undergraduate level. The rest of the respondents indicated that social pharmacy was taught under various alternative headings. These included economics, sociology, psychology, communication skills, the history of pharmacy or medicine, health promotion or education, public health/health policy, social epidemiology, law/ethics and business management/administrative pharmacy.

TABLE 2: CURRENT PHARMACY CURRICULUM IN THE UNIVERSITY

Items in questionnaire	Responses			P-values**		
	Yes	No	Age	Gender	Current position	Years in teaching
Subject						
Economics	6 (8.8%)	62 (91.2%)	0.063	0.193	0.002**	0.665
Sociology	1 (1.5%)	67 (98.5%)	0.265	1.000	1.000	1.000
Psychology	8 (11.8%)	60 (88.2%)	0.644	0.701	0.456	0.041**
anthropology	0	68 (100%)	0.000	0.000	0.000	0.000
History of pharmacy or medicine	55 (80.9%)	13 (19.1%)	0.164	0.752	0.731	0.095
Communication skills	21 (30.9%)	47 (69.1%)	0.006	0.418	0.449	0.803
Health promotion or education	28 (41.2%)	40 (58.8%)	0.169	0.129	0.316	0.121
Public health/ health policy	42 (61.8%)	26 (38.2%)	0.646	0.442	0.355	0.848
Social epidemiology	9 (13.2%)	59 (86.8%)	0.074	0.723	0.005	0.090
Geography	1 (1.5%)	67 (98.5%)	0.265	1.000	1.000	1.000
Law and ethics	37 (54.4%)	31 (45.6%)	0.978	0.622	0.617	0.311
Business management and administrative pharmacy	23 (33.8%)	45 (66.2%)	0.090	0.794	0.545	0.001***

*Responses are for all respondents; **Fisher exact test, Q = Identify the level (s) in the curriculum at which the following social science disciplines are taught in your school?

Pharmacy academics were asked about their perceptions regarding the pharmacy curriculum; the results are shown in **Table 3**. Only 34 (50.0%), of the academic pharmacists strongly agreed when they were asked about the necessity to impart social pharmacy knowledge to future undergraduate pharmacy students. With regard to the need for introducing social pharmacy subjects in the pharmacy curriculum, the majority of respondents (36; 41.20%) strongly agreed that it is very useful to

teach social pharmacy concepts to undergraduate pharmacy students in Libya. The majority of the pharmacy academics (31; 45.60%) agreed that it is important for pharmacists to be aware of and able to communicate, recognise and understand different social levels; this value was found to be statistically significant with respect to age ($p = 0.002$). There were no significant differences ($p > 0.05$) in responses with regard to gender.

TABLE 3: PERCEPTION REGARDING THE CURRENT PHARMACY CURRICULUM.

Item in questionnaire		Responses			p-values**	
Question No	SA n(%)	A n(%)	N n(%)	Age	Gender	
1	34 (50.00%)	26 (38.20%)	8 (48.1%)	0.890	0.780	
2	36 (41.20%)	27 (39.70%)	5 (7.40%)	0.128	0.688	
3	28 (41.20%)	31 (45.60%)	9 (13.20%)	0.002**	0.942	

Note: SA strongly agree; A agree; N neutral; DS disagree; and SD strongly disagree. *Responses are for all respondents; **Fisher exact test.

1= Do you think it is necessary to give social pharmacy knowledge to future undergraduate pharmacy students.

2= Do you think that it is a useful to teach social pharmacy concepts to undergraduate pharmacy students in Libya?

3= Do you think that it is important for pharmacists' to be aware and able to communicate, recognize and understand different social levels?

Pharmacy academics were asked about their perceptions regarding the kind of skills they were trying to teach to students in such disciplines or subjects; the results are shown in **Table 4**. In terms of their perceptions regarding their ability to influence the health care system, the majority of respondents (24; 35.30%) agreed that the second year of the course is best to teach these skills to undergraduate students; this was found to be statistically significant with respect to age ($p = 0.041$). When they were asked about intervention in public affairs and policy, the majority (34; 50.0%) of academic pharmacists agreed that the third year of

the course is the best choice to teach this subject to undergraduate students; there were no significant differences ($p = 0.05$) in responses in relation to the age or gender of the respondents. Finally, when the respondents were asked about effective communication skills with reference to the year of the undergraduate pharmacy curriculum in which these are taught, the majority (20; 29.40%) of the academic pharmacists agreed that the second year of the course is best to teach this aspect of the pharmacy curriculum at the undergraduate level. There were no significant differences ($p = 0.05$) in responses in relation to the age or gender of the respondents.

TABLE 4: ACADEMIC SKILLS TOWARDS SOCIAL PHARMACY DISCIPLINE

Item in questionnaire		Responses					P-values**	
Question No.	1 st year	2 nd year	3 rd year	4 th year	5 th year	Age	Gender	
	n (%)	n (%)	n (%)	n (%)	n (%)			
1a	14 (20.60)	24 (35.30)	14 (20.60)	12 (17.60)	4 (5.90)	0.041**	0.643	
1b	3 (4.40)	18 (36.50)	34 (50.00)	10 (14.70)	3 (4.40)	0.070	0.822	
1c	20 (29.40)	15 (22.10)	17 (25.00)	10 (14.70)	6 (8.80)	0.445	0.730	

*Responses are for all respondents; **Fisher exact test

Q: In teaching subjects related to social sciences in pharmacy; please indicate in which year the following skills need to be acquired by students?

1a= Ability to influence health care system. 1b= Intervention to public affairs and policy. 1c= Effective communication skills

DISCUSSION:

Perception regarding the current pharmacy curriculum: The present study focused on the perception of pharmacy academics regarding the current curriculum. The findings suggested that topics related to a social pharmacy course were currently taught at two of the schools surveyed, and the majority of respondents recognised the term “social pharmacy” and were able to respond to the questions.

The present study also found that topics related to social pharmacy courses were taught under various alternative headings such as communication skills, health education, pharmacy and health, history of pharmacy or medicine, law and ethics, public health/health policy, and business management. The survey also found that the pure social science subjects such as psychology, anthropology and economics were not much taught at all and were poorly represented in the undergraduate pharmacy curricula in Libya.

Generally, social pharmacy courses regularly draw upon the disciplines of sociology, social psychology, psychology, political sciences, economics, educational studies, communications, history, and anthropology. However, they lean more heavily towards the first five of these (sociology, social psychology, psychology, political sciences, economics), especially as these relate to issues in public health and social politics²¹. It has been suggested that for a pharmacy student to become professionally competent, they must understand human behaviour relative to health issues²².

Continuously innovating and incorporating components of pharmaceutical sociology, as has been advocated²³, has played an important role in the progression in academic orientation and practice in developed countries.

In 1975, the American Council on Pharmaceutical Education included pharmacy administration, and social and behavioural sciences as necessary curriculum content areas (American Association of Colleges of Pharmacy)²⁴. In the UK, the Nuffield Committee of Inquiry into Pharmacy declared that behavioural science should be incorporated into the undergraduate pharmacy curriculum^{25, 17}.

In Australia, social pharmacy elements were introduced in 1990¹⁷.

A number of Northern and Eastern European countries also introduced social pharmacy into their curricula in the mid-1970s. Courses were already being held in 1957 in Sweden that included “social pharmacy and laws/regulations in pharmacy” which in 1970 was changed to simply “social pharmacy”¹⁷. In Denmark, the first “social pharmacy” course was introduced in 1972–1973 and by 1980 the course appeared in the course catalogue as “social pharmacy with social science”¹⁷. In 1992 a chair in “social pharmacy” was established at the Royal Danish School of Pharmacy and the first Professor of social pharmacy was employed²⁶.

Some developing countries have also made efforts to incorporate social pharmacy into the undergraduate pharmacy curriculum. In Malaysia social pharmacy elements were introduced in 1992–93²². In Nepal, there have recently been initiatives to introduce the concept of social pharmacy, but similar to other developing countries the uptake among institutions and pharmacy academics are very slow²⁷.

Perceptions regarding developing pharmacy academic skills for the social pharmacy discipline:

In the present study the teaching of social pharmacy to the future generations of students seemed to be well appreciated by the academics. The vast majority of surveyed academics fully supported the inclusion of social pharmacy subjects in the undergraduate pharmacy curricula. Most of the respondents considered that the learning of social pharmacy has the potential to improve the knowledge, skills, practice and therefore the professionalism of pharmacists. Pharmacists have shifted from being focused on pharmaceutical and medicinal products to being patient focused. With this shift, pharmacists are now taking responsibility for patient medication outcomes and are active health care team members²⁸.

The role of the pharmacist is now described as having, not seven, but eight functions: caregiver, decision-maker, communicator, manager, lifelong learner, teacher, leader, and (in addition) researcher²⁸. Thus, a curriculum that focuses solely on the acquisition of knowledge and skills may not enable such capabilities to be developed in our graduates.

Since these changes, there have been calls for pharmacy educators to review the curriculum and increase the emphasis on clinical sciences and student-centered learning²³. One study has concluded that the current approach to the pharmacy curriculum will provide students with the knowledge and skills required to practice as pharmacists, and if the students acquire the necessary knowledge and skills, then they will become social pharmacists²⁹. However, the role of pharmacists and the world of health care have undergone a significant transformation, such that a new paradigm for practice now exists³⁰.

Ryan and colleagues, in an international survey, found that the teaching of social sciences provides undergraduate pharmacy students with the knowledge, skills and attitudes for critical thinking and decision-making, and provides a better understanding of social theory and patient care; all of which lead to improved professionalism. In a related survey²², reported that the completion of a social pharmacy course may allow students to acquire a high consciousness and realization of health issues and pharmaceutical problems, as well as enable them to evaluate alternative strategies for achieving satisfactory solutions. Barnett and Coate³¹, argued that to enable students to cope with a highly complex world, more than just knowledge and skills are required for them to flourish.

Perceptions regarding the expectation of pharmacy academics about social pharmacy education:

In present study the respondents expected that the inclusion of social pharmacy education as a discipline in the curriculum will help policy makers change the current status of pharmacists, and that the development of social pharmacy education in Libya will give students a greater knowledge of human behaviour. They also expected that it will help develop models for the study of patient/consumer behaviour, and improve ways for students to learn about the nature of the multiple factors contributing to health and wellbeing including social, psychological and biological factors.

They agreed that the development of behavioural science teaching, such as sociology, anthropology, social psychology, economics, political science and history should form an integral part of the modern pharmacist's education.

Despite the fact that the relevance of social and behavioural sciences courses is clear, actually integrating a social science perspective into a densely packed curriculum will raise a number of logistical and pedagogical issues. There have been a number of studies exploring the role of social pharmacy in the improvement of patient pharmaceutical care^{32, 22, 33}.

One particular study²² concluded that the introduction of social pharmacy courses to pharmacy students in Malaysia was successful in bringing more knowledge of human behaviour to the student and in developing models for the study of patient/consumer behaviour. More recently, Anderson believed that the future of social pharmacy is still young and suggested that as long as people are seeking treatment, taking medicines, and attempting to improve their health, there will be a rich resource for social pharmacy research, and of teaching in collaboration with social scientists³³.

Consequently, a study by Harding and Taylor³⁴, considered that the social pharmacy approach will better prepare pharmacists for their practice and will bring something additional to the basic, scientific drugs focus of courses, and in addition contribute something extra to the clinical and practical elements of courses.

LIMITATIONS: Overall, there are six pharmacy faculties in Libya. However, the respondents in this study were academics selected from only two of the faculties. The basis for this selection is that pharmacy education in Libya was first introduced in Al-Fateh University of Medical Sciences, Tripoli in 1975, and later in 1989, at Alarab Medical University Benghazi. The two cities, Tripoli and Benghazi are central to Eastern and Western Libya respectively and there is no faculties in Southern.

The other four faculties were only started in year 2000, with three of them located very close too Tripoli and the other close to Benghazi, such that they all draw heavily from the older faculties' academic staff as adjuncts and visiting scholars.

CONCLUSION: The results obtained from the present study revealed that social pharmacy subjects are not fully thought out and given priority within the Libyan pharmacy curriculum.

To overcome the challenges of adopting social pharmacy as a field of importance in pharmacy education and practice in Libya, a more proactive and collaborative approach is needed, involving all stakeholders and engaging pharmacy academics. The academic pharmacy profession is now in an excellent position to take the next logical step in its evolution, that is, the full development and incorporation of the behavioural sciences into the professional curriculum. This cannot be accomplished until more attention is given to overcoming the shortage of appropriately trained faculty staff with an interest in the psychosocial aspects of pharmaceutical care.

CONFLICT OF INTEREST: Authors would like to declare of no conflict of interest associated with this study.

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